Supplemental Remedial Investigation

Waste Oil Dump

NASA Wallops Flight Facility

Wallops Island, Virginia



National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility

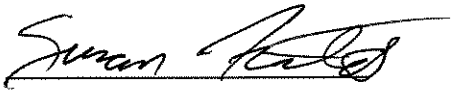
DECEMBER 2004

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I certify that the information contained in or accompanying this document is true, accurate, and complete.

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SUPPLEMENTAL REMEDIAL INVESTIGATION
WASTE OIL DUMP
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

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EXECUTIVE SUMMARY

This Supplemental Remedial Investigation (RI) has been prepared for the National Aeronautics and Space Administration (NASA) under Contract Task Order (CTO) 848 issued by the Engineering Field Activity Northeast (EFANE) of the Naval Facilities Engineering Command under the Comprehensive Long-Term Environmental Action Navy (CLEAN III) contract number N62467-94-D-0888. The supplemental RI addresses the Waste Oil Dump (WOD) Site at the NASA Goddard Space Flight Center (GSFC) Wallops Flight Facility (WFF) located in Accomack County, Virginia. The supplemental RI activities and this report have been prepared as part of the NASA environmental restoration program under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and Virginia Administrative Code Hazardous Waste Management Regulations, 9 VAC20. The supplemental RI was conducted in accordance with the Final Work Plan for Supplemental RI Activities approved and finalized in January 2003 (TtNUS, 2003a).

PURPOSE

The primary scope of the Supplemental RI was to perform further investigations and evaluations of the WOD site to ensure that appropriate remedial alternatives are developed and evaluated. The development and evaluation of remedial alternatives require an understanding of the site characteristics, the nature and extent of contamination, and the identification of potential exposure pathways and receptors. As described in the final work plan, the scope of the supplemental RI included the performance of additional investigations to fill data gaps and provide supplemental data to refine the risk assessments, support engineering evaluations, and provide data needed to develop remedial alternatives for the WOD site.

The specific Supplemental RI objectives include but are not limited to the following:

- Characterization of surface and subsurface conditions throughout the study area.
- Characterization of adjacent marshland soil conditions.
- Characterization of groundwater conditions.
- Collect data to support the evaluation of natural attenuation processes potentially occurring within the aquifer.
- Further refinement of the Conceptual Site Model.
- Assessment of potential human health and environmental risks.

BACKGROUND

WFF is located in Accomack County on the Eastern Shore of the Commonwealth of Virginia. The facility is comprised of three separate areas: the Main Base (MB), the Mainland (ML), and Wallops Island (WI). These three areas are in close proximity to each other and total approximately 5,000 acres of landmass and 1,000 acres of marshland. The most heavily developed area is the MB (about 1,900 acres) that includes administrative and technical offices, tracking and data acquisition components, the range control center, rocket motor storage and processing facilities, research and development facilities, airfield and control tower, aircraft hangars and maintenance facilities, and Navy administration and housing areas.

The WFF is located in the Atlantic Coastal Plain Physiographic Province and is underlain by a thick sequence of approximately 7,000 feet of unconsolidated sediments that unconformably overlie crystalline bedrock. The principal water-bearing units beneath the WFF are, in stratigraphically descending order, the Pleistocene-age Columbia Group and three hydraulically isolated aquifer units within the underlying Miocene-age Yorktown Formation. The Columbia Group extends to a subsurface depth of approximately 60 feet and consists of interbedded sands, gravels, and sandy clays deposited under fluvial and marine conditions. The water table beneath the WFF typically occurs under unconfined conditions within the Columbia Group at depths of 0 to 30 feet. Groundwater flow directions within the Columbia, as is generally the case with most shallow unconfined aquifers, reportedly mimics the general surface topography. The Yorktown Formation is approximately 1,000 feet thick and consists of alternating sequences of fine- to coarse-grained glauconitic sands (that may be variably clayey, silty, or shelly) and finer-grained silts and clays. The sands comprise the dominant aquifers, and the silts and clays form aquitards that create confining conditions and that separate the Yorktown Formation into three (upper, middle, and lower) aquifers. At the WFF, the upper Yorktown aquifer generally occurs at a depth of about 50 to 100 feet below ground surface and is isolated from the overlying Columbia aquifer by a clay and silt aquitard that is approximately 20 to 40 feet thick. Aquifer tests at the WFF indicate that there is no significant vertical leakage across the confining unit separating the upper Yorktown aquifer from the overlying Columbia Group. The WFF and the surrounding communities rely on groundwater, primarily from the Yorktown formation, for drinking water supplies.

The WOD is located at the northern end of Runway 17-35 on a peninsula-like feature adjacent to Little Mosquito Creek. The site is currently a field vegetated with grasses, shrubs, and bushes. The southern half of the site, bordered by the active runway, is relatively flat with little slope. The central portion of the site gently slopes to the north. The northern, eastern, and western boundaries of the site are formed by steep slopes that direct non-infiltrated surface runoff into low-lying marshes that border an unnamed tributary to Little Mosquito Creek and Little Mosquito Creek. There are no surface water bodies within or immediately adjacent to the disposal areas at the WOD. The closest body of water is the narrow

unnamed tributary to Little Mosquito Creek located about 160 feet west of the site. Approximately 300 feet of marshland to the north and east of the site separate the WOD from Little Mosquito Creek.

The WOD was reportedly used for the disposal of waste oils and possibly solvents for a period from the 1940s through the 1950s. Reportedly, the site was used to dispose of excess waste oil that could not be used for fire training activities at the Former Fire Training Area (FFTA) site. No records are available to determine the types and quantities of materials disposed or the duration of this activity at the site. A review of aerial photographs from 1943 through 1994 indicate the presence of ground scarring and possible excavations in the WOD area from 1943 through 1961.

Environmental investigations began at the WOD in 1986. In 1986, the Commonwealth of Virginia conducted an inspection of the WOD and identified the presence of waste (reported as waste oils) on the surface of the site. Following further inspection and consultation, NASA conducted a removal action in the area in December 1986 including the excavation and removal of approximately 180 cubic yards of impacted soils in four separate areas of the site. No samples were collected for analysis during or after the excavations.

A preliminary assessment (PA) and site investigation (SI) of the WOD were conducted from 1988 through 1992. The studies included the performance of soil gas surveys and surface and subsurface soil and groundwater sampling and analysis. The data from these investigations indicated that no waste materials remained at the site and it was concluded that no further action was required.

No additional work was completed at WOD until 1997. In 1997, a monitoring well (WFF15-GW7) was installed and sampled within the WOD as part of an RI being conducted at an adjacent site (Site 15). The analytical results from the well sample revealed the presence of volatile organic and petroleum compounds. In response to this finding, NASA conducted an inspection of the WOD and identified an area of stained soil and stressed vegetation surrounding the newly installed well. An RI was conducted at the WOD from 1998 through 2000 and included a review of historical data, the performance of a geophysical survey, the installation and sampling of temporary monitoring wells, sampling of surface and subsurface soils, and the installation and sampling of permanent monitoring wells. The RI focused on the area of stained soil and did not investigate the remaining portions of the WOD. Surface soil samples collected from within the stained area indicated the presence of elevated concentrations of polyaromatic hydrocarbons (PAHs), primarily benzo(a)pyrene. Subsurface soils collected at the soil/water interface from immediately beneath the stain contained elevated concentrations of benzene, toluene, ethylbenzene, and xylene (BTEX) compounds and PAHs. Groundwater samples were collected over a 3-year period from monitoring wells located upgradient, within, and downgradient of the stained soil. Analytical results indicated BTEX, PAH, and metals contamination in the groundwater immediately

beneath the stained soils. Samples from monitoring wells upgradient and downgradient of the stained soil did not show significant contamination.

Based on historical records and the available analytical and groundwater level results, it was concluded in the RI that past waste oil disposal activities at the WOD were the source of a limited groundwater contamination plume. Groundwater in the area occurs in an unconfined water table aquifer within the Columbia Group that is assumed to be isolated by an aquitard from the lower Yorktown Formation. A groundwater divide was interpreted to exist at the WOD, and groundwater was projected to flow in a northwesterly and northeasterly direction from the crest of the site. Groundwater measurements and subsequently projected groundwater contours indicated that the water table was relatively flat with no steep gradients. The groundwater plume, consisting of organic and metal contaminants, appeared to be fairly stable and located immediately beneath and/or slightly downgradient of the stained soil area.

SUPPLEMENTAL 2003 RI FIELD ACTIVITIES AND FINDINGS

The scope of the Supplemental RI field investigations included collecting and analyzing surface and subsurface soil samples from throughout the WOD site, collecting and analyzing surface soils from the marsh surrounding the site, installing additional monitoring wells, and sampling the new and existing monitoring wells to better define the groundwater flow and contaminant migration pathway.

A total of 27 surface and subsurface soil samples were collected from the WOD site and analyzed for VOCs, semi-volatile organic compounds (SVOCs), polychlorinated biphenyl (PCBs), and target analyte list (TAL) metals. Additionally, surface soil samples were analyzed for pH, total organic carbon (TOC), and grain size. An additional twelve surface soil samples were collected from the marsh surrounding the WOD site and analyzed for VOCs, SVOCs, PCBs, TAL metals, pH, TOC, and grain size.

Three new monitoring wells were installed at the WOD. The purpose of the new wells was to fill data gaps to provide a more complete delineation of groundwater flow patterns (by providing additional hydraulic head data) and a more complete delineation of the nature and extent of groundwater contamination. The wells were screened across the water table to monitor for the possible presence of floating or free product. The well borings were lithologically logged to further investigate hydrogeologic conditions at the WOD, and water level measurements and groundwater samples were collected and analyzed from the new and existing wells. Groundwater samples were analyzed for VOCs plus methyl tert-butyl ether (MTBE), SVOCs, PCBs, TAL total and dissolved metals (field-filtered), and monitored natural attenuation (MNA) parameters (hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and TOC). Additionally, field parameters (for example, pH, temperature, dissolved oxygen, oxygen reduction potential (ORP), salinity, conductivity, turbidity, alkalinity, ferrous iron, and hydrogen sulfide) were measured at each well.

The analytical data from the Supplemental RI were validated in accordance with EPA Region 3 and national functional guidelines and were evaluated along with the historical RI data to further define the nature and extent of contamination at the WOD. In addition, the lithological logs from the new and existing wells and the hydraulic head data collected during the Supplemental RI were evaluated to further refine the conceptual site model. The results and findings of the evaluation are presented and discussed in this report. The major findings and conclusions of the Supplemental RI are as follows:

- The lithologic unit immediately underlying the site, the Columbia Group, consists chiefly of fine- to medium-grained sands, with lesser amounts of silt and clay.

- A silty clay layer, approximately one- to two-feet thick, exists within the Columbia Group beneath the WOD at a subsurface elevation near sea level. This clay lens may have at least a semi-regional extent and functions as a leaky aquitard that hydraulically divides the Columbia aquifer into upper and lower units.

- The clay lens within the Columbia Group appears to be absent at well location WFF15-GW7. The clay lens was encountered at adjacent and nearby borings but its presence was not noted on the boring log for this well.

- Groundwater flow in the upper unit of the Columbia aquifer beneath the WOD is in directions ranging through an arc of approximately 180 degrees, or from nearly due west, through northward, to nearly due east. This flow is consistent with the directions that are predicted from the surface topography of the WOD, which is located on a small peninsula that extends northward from the end of Runway 17-35 towards Little Mosquito Creek and its associated lowlands and wetlands.

- The measured vertical hydraulic gradient within the shallow Columbia aquifer at the WOD is downward throughout the majority of the site but shifts to horizontal and possibly an upward gradient in the lowlands surrounding the site itself. The vertical gradients indicate that the area of higher elevation is a groundwater recharge area and the lowland areas are a groundwater discharge area.

- The unnamed tributary may be a discharge point for a small component of shallow groundwater flowing westward from the WOD. Little Mosquito Creek is expected to be the significant groundwater discharge point for the study area.

- Contamination at the WOD exists in both the soil and groundwater medium, but the extent of contamination is generally localized and concentrated in two geographic areas:

- A localized zone of fill material was identified in the west-central portion of the site. Samples from the fill material contained elevated concentrations of metals and some organic compounds, primarily PAHs and BTEX components. The limited presence to absence of groundwater contamination immediately downgradient of the area of fill indicates that this fill material is not significantly impacting the quality of the local groundwater.

- A localized area of contamination, in the vicinity of monitoring well WFF15-GW7, exists beneath the stained soil area identified in the 2001 RI. Subsurface soil samples collected from the soil/groundwater interface (23 to 24 feet below the ground surface) contained elevated concentrations of some metals and many organic compounds, primarily PAHs and BTEX compounds. Relatively low levels of contamination were encountered at the surface, and the intervening soil horizons were relatively free of contamination. Similarly, soil samples and borings from upgradient and nearby areas were relatively free of contamination. The contamination pattern suggests that waste materials may have been buried at this location.

- Groundwater contamination at the WOD is very localized and is centered in the vicinity of monitoring well WFF15-GW7. The Supplemental RI and historical sampling of this well has indicated that significant metals, BTEX compounds, and PAH contamination exists at this location. In addition, a floating layer of petroleum product (0.4 foot thick) was measured in this well at the start of the Supplemental RI field activities. The presence of a free-phase product and the high concentrations of contamination detected in the dissolved phase within the groundwater indicate that the contaminant source occurs at or near the water table in the immediate vicinity of WFF15-GW7.

- The contaminated groundwater associated with well WFF15-GW7 is not migrating for significant distances from the immediate vicinity of the apparent source. Available data indicate that the groundwater plume emanating from this source area migrates downward within the aquifer but attenuates rapidly in the downgradient direction. Very low concentrations of a few VOCs and no SVOCs were detected in the downgradient deep well, and no organic compounds at all were detected in the downgradient shallow well.

- The presence of the low-level contaminant plume in the deep downgradient well, which is screened below the expected depth of the clay lens, and the absence of the plume in the shallow downgradient well, appear to confirm the observation that the clay lens is not present in the immediate vicinity of the source area.

- Available data suggests that the attenuation and limited migration of the contaminant plume is related to the immobile nature of many of the contaminants and the active biodegradation (evidenced by nearly depleted oxygen levels, elevated methane levels, and a reducing environment) that is occurring at the source area. In addition, it is likely that the multiple excavations that have occurred at the WOD have created a heterogeneous aquifer whose properties, including hydraulic conductivity, vary within short lateral distances. It is likely that areas of low hydraulic conductivity exist within the site. These areas of low hydraulic conductivity likely result in a lower groundwater velocity, which increases the opportunity for degradation over a short distance.

- Contaminant concentrations in Supplemental RI groundwater samples collected from within the localized plume are within the same order of magnitude as seen in historical samples. The presence of weathered product indicates a significant volume of source material still remains, but it appears that the various processes of biodegradation are effectively attenuating or restricting the lateral extent of the dissolved-phase plume.

BASELINE RISK ASSESSMENTS

Baseline human health and ecological risk assessments using the historical and Supplemental RI surface and subsurface soil sample analytical results and Supplemental RI groundwater sample analytical results were performed. The human health risk assessment evaluated potential risks to current and future industrial workers, future construction workers and hypothetical future residents. Because the WOD is located at the end of an active runway, access to the area is heavily restricted. These restrictions limit the current activities at the site to periodic mowing and maintenance functions. The future anticipated land use for the WOD is the continued use of the area as an airfield. The development of the area for other uses, especially residential purposes, is extremely unlikely. The residential scenario was developed as a baseline for comparison purposes in accordance with EPA guidelines. It should also be noted that for the hypothetical future resident exposure scenario it was assumed that the shallow WOD groundwater (Columbia aquifer) would be used for residential purposes. The development of the shallow aquifer as a water supply is highly unlikely in that the lower Yorktown aquifer is more productive and use of the shallow Columbia aquifer is discouraged and restricted by the Commonwealth of Virginia under a groundwater management program administered by the VADEQ. Under this program, NASA has abandoned all water supply wells that withdraw from the Columbia aquifer.

The human health risk assessment was performed in accordance with the most recent EPA and VADEQ guidance and in accordance with the procedures and methodologies described in the work plan. Estimated potential risks were calculated for the reasonable maximum exposure (RME) scenario, which represents the conservative, upper end or most reasonably assumed maximum potential exposure to

contamination at the WOD. Carcinogenic and noncarcinogenic risks were calculated. EPA and VADEQ have defined the cancer risk range of 10^{-4} to 10^{-6} as the "target range" or "acceptable risk range" for most sites evaluated under their programs. This risk range represents the potential for contaminant exposure to cause one additional case of cancer in a population of ten-thousand people to one additional case of cancer in a population of one million people. Cumulative cancer risks greater than 10^{-4} generally will indicate that some degree of remediation is required, and cancer risks less than 10^{-6} normally will not result in remedial efforts. When the calculated risk falls between10^{-4} to 10^{-6}, decisions are typically made on a case by case basis. Noncancer risks were evaluated using the Hazard Index (HI) system. EPA and VADEQ have established this system to evaluate the potential for noncarcinogenic health effects of contamination. An HI of 1.0 or less is not expected to result in adverse health effects. The HI for an exposure scenario and for specific target organs are both evaluated under this system. In general, if the total HI exceeds 1.0 than the specific target organs expected to be affected by the contaminants are further evaluated to determine the HI for that organ. The HI value is not a numeric indication of risk. Rather, an HI that exceeds 1.0 indicates that a noncancer health effect cannot be ruled out.

The current industrial worker risk scenario represents the current and likely future exposure scenario for the WOD. This risk scenario assumes an industrial worker will be exposed to surface soils or subsurface and surface soils through the performance of limited routine maintenance and mowing activities at the WOD. The cancer risk for exposure to surface soils under this scenario was calculated to be 2.7×10^{-7}. This represents about 3 additional cases of cancer in a population of ten million people, which is less of a risk than the lower end of the EPA acceptable risk range, one case in one million. There were no contaminants detected that would contribute to a noncancer health effect. For potential exposure to subsurface and surface soils, assuming that subsurface soils were disturbed and became available as surface soils, the cancer risk was calculated as $2.1 \times 10^{-7.}$ This risk is also less than the acceptable risk range (10^{-4} to 10^{-6}) and represents a risk of about 2 cases in ten million industrial workers. The total and all target organ noncancer risks were found to be below an HI of 1.0.

The future industrial worker scenario was developed to assess the potential risks to industrial workers if the runway were to become inactive and the WOD was maintained under typical programs requiring more frequent mowing and maintenance activities as are currently being conducted for similar areas at WFF. The cancer risk resulting from exposure to surface soils and total soils (surface and subsurface combined) was calculated as 1.7 and 1.4×10^{-6}, respectively. These risks (between 1 and 2 in one million) are at the lower end of the acceptable risk range discussed above. Noncancer risks for both surface and total soils were found to be below an HI of 1.0.

The construction worker risk scenario was developed to assess the potential risks associated with workers being exposed to surface and subsurface soils and groundwater should the area be developed in

the future. The cancer risk for this scenario was calculated to be 2.0×10^{-7} (two in ten million) which is less of a risk than the lower end of the acceptable risk range (one in one million). All noncancer risks were calculated as having an HI of less than 1.0.

The future residential use scenario, although not likely to occur, was developed to evaluate the potential risks associated with residents living at the WOD and using the shallow groundwater at the site for domestic purposes. Under this scenario it was assumed that subsurface and surface soils would be available for contact and that no soil remediation would be performed and that groundwater would not be treated before use. It was also assumed that a resident would be exposed to the same contaminant levels found at the site from childhood through adult life for a period of 30 years. The cancer risk for this scenario was calculated to be 4.3×10^{-4} (about 4 in ten thousand) which is a greater risk than the high end of the acceptable risk range (1×10^{-4} or one in ten-thousand). The risks greater than the acceptable risk range were almost exclusively associated with hypothetical ingestion of untreated groundwater (4.25×10^{-4}). The primary risk driver was arsenic in groundwater. Tetrachloroethene and benzene also contributed to the groundwater risk. Total lifetime soil cancer risks were calculated as 7.3×10^{-6}. Potential noncancer health effects for exposure to soils under the residential use scenario were calculated as having an HI of less than 1.0 for both the child and adult receptor. However, an evaluation of the potential domestic use of untreated site groundwater resulted in HIs greater than 1.0 based primarily on potential exposure to arsenic, iron, manganese, aluminum, and 4-methylphenol in drinking water and naphthalene in shower vapors.

Arsenic was detected in only the deep monitoring (WFF16-GW2D) well located immediately downgradient of the source area. As discussed above, data indicate that groundwater conditions in this area reflect a highly reducing environment. Because of the reducing conditions in this area, it is not known if the presence of arsenic in this single sample is indicative of a waste constituent or if the reducing environment has enhanced the dissolution of arsenic from the geologic materials. Tetrachloroethene was also detected in only one monitoring well, WFF15-GW7. The concentration of tertachloroethene (5 ug/L) in the single sample was equal to the Maximum Contaminant Limit (MCL), (the maximum concentration permitted in public drinking water supplies), for tetrachloroethene. Benzene was detected in only these same two wells (WFF16-GW2D and WFF15-GW7) located in the source area. Both detections exceeded the MCL for benzene (5 ug/L). Floating petroleum product was present at monitoring well WFF15-GW7 and the sample from this well showed the highest number and levels of contamination at the WOD.

An ecological risk assessment was performed to determine whether adverse ecological impacts are present as a result of exposure to contaminants released to the environment at the WOD. The habitat, contaminants present, migration pathways, and the routes that receptors may be exposed to contaminants at the WOD were defined and evaluated as part of the assessment. The WOD is a

terrestrial habitat and the receptors evaluated for the terrestrial environment were plants, soil invertebrates, and herbivorous and insectivorous birds and mammals. In addition to considering the terrestrial environment, the ERA also evaluated the risks to benthic invertebrates (aquatic life) that may be exposed to contaminants that migrated from the WOD to marsh soils or sediments in the surrounding area. The contaminant concentrations, occurrence, distribution and potential effects data were evaluated to determine whether adverse effects to growth, survival, and reproduction were likely to occur in these receptors due to exposure to contaminants identified at the WOD. Overall, risks to plant, terrestrial wildlife, and terrestrial and benthic invertebrates from chemicals detected at the WOD were found to be low to negligible.

ACRONYMS

AET	Apparent Effects Threshold
AOC	Area of Concern
ASTM	American Standards and Text Methods
AWQC	Ambient Water Quality Criteria
BAF	Bioaccumulation Factor
BCF	Bioconcentration Factor
BERA	Baseline Ecological Risk Assessment
BSAF	Biota Sediment Accumulation Factor
BTAG	Biological Technical Assistance Group
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
CDI	Chronic Daily Intake
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	Comprehensive Long-Term Environmental Action Navy
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
CSF	Cancer Slope Factor
CSM	Conceptual Site Model
CTE	Central Tendency Exposure
CTO	Contract Task Order
DCA	Dichloroethane
DCE	Dichloroethene
DNAPL	Dense Non-Aqueous Phase Liquid
DON	Department of Navy
DRO	Diesel Range Organics
EC	Environmental Canada
EEQ	Ecological Effects Quotient
EFANE	Engineering Field Activity North East
EPA	Environmental Protection Agency
EPC	Exposure Point Concentration
ERA	Ecological Risk Assessment
ER-L	Effects Range-Low
ER-M	Effects Range-Median
FFTA	Former Fire Training Area
FS	Feasibility Study
FUDS	Formerly Utilized Defense Site
GRO	Gasoline Range Organics

ACRONYMS (Continued)

GSFC	Goddard Space Flight Center
HASP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HI	Hazard Index
HMW	High Molecular Weight
HQ	Hazard Quotient
I.D.	Inside Diameter
IEUBK	Integrated Exposure and Uptake Biokinetic
IRIS	Integrated Risk Information System
LMW	Low Molecular Weight
LOAEL	Lowest/Observable/Adverse/Effects/Level
MB	Main Base
MCL	Maximum Contaminant Limit
ML	Main Land
MNA	Monitored National Attenuation
MSL	Mean Sea Level
MTBE	Methyl Tri-Butyl Ethane
NACA	National Advisory Committee for Aeronautics
NASA	National Aeronautics and Space Administration
NCEA	National Center for Environmental Assessment
NOAA	National Oceanic and Atmospheric Administration
NOAEL	No/Observable/Adverse/Effects/Level
NOEC	No Observed Effect Concentration
NTU	Nephelometric Turbidity Units
O.D.	Outside Diameter
ORNL	Oak Ridge National Laboratories
ORP	Oxygen Reduction Potential
OSWER	Office of Solid Waste and Environmental Response
PA	Preliminary Assessment
PAH	Poly Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PEF	Particulate Emission Factor
PID	Photoionization Detector
PVC	Polyvinyl Chloride
QAPP	Quality Assurance Project Plan
RAGS	Risk Assessment Guidance for Superfund

ACRONYMS (Continued)

RBC	Risk Based Concentrations
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Assessment Facility
RfD	Reference Dose
RI	Remedial Investigation
RME	Reasonable Maximum Exposure
SAP	Sampling and Analysis Plan
SARA	Superfund Amendment and Reauthorization Act
SdSL	Sediment Screening Level
SERA	Screening Ecological Risk Assessment
SI	Site Inspection
SSL	Soil Screen Level
SVOC	Semi-Volatile Organic Compound
TAL	Target Analyte List
TCA	Trichloroethane
TCDD	Tetrachlorodibenzodioxin
TCL	Target Compound List
TCLP	Toxic Characteristics Leaching Potential
TEF	Toxicity Equivalency Factor
TOC	Total Organic Carbon
TPH	Total Petroleum Hydrocarbons
TRV	Toxicity Reference Values
UCL	Upper Confidence Level
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Society
UST	Underground Storage Tank
UTL	Upper Tolerance Level
VADEQ	Virginia Department of Environmental Quality
VIMS	Virginia Institute of Marine Services
VOC	Volatile Organic Compound
WFF	Wallops Flight Facility
WI	Wallops Island
WOD	Waste Oil Dump
WWTP	Waste Water Treatment Plan

1.0 INTRODUCTION

This Supplemental Remedial Investigation (RI) has been prepared for the National Aeronautics and Space Administration (NASA) under Contract Task Order (CTO) 848 issued by the Engineering Field Activity Northeast (EFANE) of the Naval Facilities Engineering Command under the Comprehensive Long-Term Environmental Action Navy (CLEAN III) contract number N62467-94-D-0888. The Supplemental RI addresses the Waste Oil Dump (WOD) Site at the NASA Goddard Space Flight Center (GSFC) Wallops Flight Facility (WFF) located in Accomack County, Virginia. The Supplemental RI activities and this report have been prepared as part of the NASA environmental restoration program under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986, and Virginia Administrative Code Hazardous Waste Management Regulations, 9 VAC20. The Supplemental RI was conducted in accordance with the Final Work Plan for Supplemental RI Activities approved and finalized in January 2003 (TtNUS, 2003a).

1.1 SCOPE AND OBJECTIVES

The primary scope of the Supplemental RI is to perform further investigations and evaluations of the WOD site to ensure that appropriate remedial alternatives are developed and evaluated. The development and evaluation of remedial alternatives require an understanding of the site characteristics, the nature and extent of contamination, and the identification of potential exposure pathways and receptors. As described in the final work plan, the scope of the Supplemental RI included the performance of additional investigations to fill data gaps and provide supplemental data to refine the risk assessments, to support engineering evaluations, and to provide data needed to develop remedial alternatives for the WOD site.

The general objectives of the Supplemental RI are to adequately characterize the WOD site and groundwater conditions at the WOD, to quantify the potential risks posed to human health and the environment as a result of exposure to those conditions, and to provide sufficient data to evaluate the need and options for remedial actions. The specific objectives include but are not limited to the following:

- Characterization of surface and subsurface conditions throughout the study area.
- Characterization of adjacent marshland soil conditions.
- Characterization of groundwater conditions.
- Evaluation of the occurrence and/or potential for natural attenuation of contaminants.
- Further refinement of the Conceptual Site Model (CSM).
- Assessment of potential human health and environmental risks posed by site contaminants.

1.2 PLAN ORGANIZATION

This report presents a review of historical and current information and analytical data pertinent to the WFF and the WOD site and presents a technical evaluation of that data. Section 1.0 provides this introduction and the scope and objectives of the Supplemental RI. Section 2.0 provides a summary of the facility background and environmental investigations. Sections 3.0 reviews the WOD operational and investigation history and CSM, and summarizes the planned Supplemental RI field activities. Section 4.0 presents a discussion of the Supplemental RI activities conducted. Section 5.0 discusses the historical data, presents the results of the Supplemental RI field sampling activities, evaluates the nature and extent of contamination, and refines the CSM. The properties that affect the fate and transport of the contaminants identified at the WOD are discussed in Section 6.0. Sections 7.0 and 8.0 assess the human and ecological risks associated with potential exposure to contaminants at the WOD.

2.0 FACILITY BACKGROUND AND HISTORY

2.1 FACILITY DESCRIPTION

2.1.1 Facility Location

WFF is located in Accomack County on the Eastern Shore of the Commonwealth of Virginia (Figure 2-1). The facility is comprised of three separate areas: the Main Base (MB), the Mainland (ML), and Wallops Island (WI). These three areas are in close proximity to each other and total approximately 5,000 acres of landmass and 1,000 acres of marshland. The most heavily developed area is the MB (about 1,900 acres) that includes administrative and technical offices, tracking and data acquisition components, the range control center, rocket motor storage and processing facilities, research and development facilities, an airfield and control tower, aircraft hangars and maintenance facilities, and Navy administration and housing areas. The WOD is located within the MB area (Figure 2-2).

2.1.2 Facility History

NASA has had a presence in the WFF area since the mid-1940s. From the 1940s until 1959, NASA's predecessor organization, the National Advisory Committee for Aeronautics (NACA), had a limited presence on Wallops Island. In 1959, shortly after its creation, NASA acquired the MB from the Navy. The Navy operated an aviation training field at the MB area from 1942 through 1958. NASA also acquired the ML area at this time and continued to expand land purchases on WI. In 1960, a causeway was constructed from the ML to WI. A detailed history of land ownership and transfers is presented in the Environmental Resources Document, NASA GSFC WFF Wallops Island, Virginia, October 1999, prepared by Occu-Health, Inc. (Occu-Health, 1999).

Beginning in 1942, the Navy operated a training airfield at the MB area, the Chincoteague Naval Auxiliary Air Station, prior to NASA occupation in 1959. The Navy constructed runways, buildings, and other support facilities throughout the MB area in 1943. The facility was used for naval aviation training until 1959 when operations ceased and the property was transferred to NASA. In addition to aviation training, the Navy used the facility for aviation ordnance testing to develop and test aviation ordnance and guided missiles [US Army Corps of Engineers (USACE), 2000].

NASA continues to maintain the runways constructed at the facility by the Navy and occupies many of the structures and buildings that were present at the time of the property transfer. In addition, NASA has expanded and constructed additional buildings within the MB area to support their mission and to provide support to other tenant organizations. The mission of NASA's WFF has undergone several changes

since it was established in 1959, but the main focus has been and continues to be rocket research, the management of suborbital projects, suborbital and orbital tracking, aeronautical research, and space technology research. NASA WFF also provides support to other tenant organizations including the Navy, which maintains surface combat systems and ship systems engineering training centers, and uses the airfield and launch sites at WFF. Other tenant organizations include the National Oceanic and Atmospheric Administration (NOAA), which maintains facilities at the MB, the United States Coast Guard, and the Mid-Atlantic Regional Spaceport, which utilizes the launch and rocket support facilities (NASA, 2002).

2.2 FACILITY ENVIRONMENTAL INVESTIGATION HISTORY

Formal environmental investigations on a facility-wide basis began at WFF in 1988 with the initiation of an environmental site survey. This survey was conducted for NASA by Ebasco Services, Inc. between 1988 and 1990 and resulted in the identification of 15 areas considered to be potential sites (Metcalf & Eddy, Inc., 1996). Ten of these sites were located at the MB, and the other five were located on WI. A series of initial investigations at those sites culminated in the publishing of a Site Inspection Report in 1992 that was later finalized in 1996 (Metcalf & Eddy, Inc., 1996). The Site Inspection Report details the activities and findings for each site. In general, the investigations included the performance of background document reviews, magnetometer studies, soil gas surveys, sampling of soils, groundwater, surface water, and sediments, and the preparation of preliminary Hazard Ranking System scores.

As a result of the site inspection, individual sites were prioritized for additional studies and evaluation. Since 1992, sites have been pursued on individual tracks based on the priority and potential hazard identified. Actions conducted at these sites include supplemental investigations, sampling programs, removals, product recovery, RIs, feasibility studies (FSs), remediation, and closeout. In addition to the formal facility-wide environmental assessment and site inspection process, NASA has conducted other environmental assessments and cleanup programs throughout the facility. The Virginia Department of Environmental Quality (VADEQ) has provided monitoring and regulatory support throughout this process. The WOD has been the subject of removal actions and ongoing investigations including an RI, focused groundwater investigations, and this Supplemental RI.

Environmental investigations at the WOD began in 1986 after a Commonwealth of Virginia inspection noted the presence of possible waste oil in surface soils at the site. NASA responded to this finding by conducting a soil excavation and disposal in that same year. In 1988, a preliminary assessment of the area was conducted. As a follow-up to the preliminary assessment, a site inspection including soil, groundwater, and sediment sampling and a soil gas survey was conducted in 1989. Based on the results of the soil gas study, additional surveys and sampling were conducted in 1990. Based on these

investigations, it was concluded that no further action was necessary at the WOD. During the performance of an RI at an adjacent site (Site 15 Debris Pile), groundwater contamination was discovered that was suspected to be originating from the WOD area. Upon further investigation, a previously unknown area of surface disposal was discovered at the WOD. In response to this finding, an RI was initiated at the WOD in 1998 and completed in 2000. Section 3.0 of this report provides a more detailed history of the WOD, summarizes the analytical findings from previous investigations, and reviews the planned Supplemental RI activities.

2.3 FACILITY ENVIRONMENTAL SETTING

2.3.1 Facility Topography and Drainage

WFF is located on the eastern shore of the Delmarva Peninsula and is relatively flat with no major topographic features. Numerous inlets, tidal estuaries, marshes, bays, and creeks exist throughout the WFF area. The MB is relatively flat with a reported maximum elevation of about 40 feet above mean sea level (msl) (Occu-Health, Inc., 1999). The MB is bordered to the east by extensive marshland and creeks that drain to the Chincoteague Bay and inlet. Little Mosquito Creek, which eventually also flows east into the inlet and to the Atlantic Ocean, borders the MB to the north and west. State Routes 175 and 798 form the southern and southeastern borders of the facility (see Figure 2-2). The runway complex covers a large portion of the MB and forms a flat plateau-like feature that covers the majority of the highest elevations at MB.

Surface water drainage from the MB is through natural and man-made drainage structures. Drainage within the industrialized portions of the MB is controlled and diverted by stormwater collection and conveyance systems. In addition, portions of the base have been isolated from surface water drainage areas by the formation of berms and higher elevation structures. The natural drainage patterns for the southwestern, western, and northern portions of the MB are to Mosquito Creek and its tributaries. The eastern, southeastern, and southern portions of the MB drain to a series of marshlands, creeks, and bays that lead to Chincoteague Bay and the Atlantic Ocean.

Surface waters in the vicinity of the MB are categorized as Class II (Estuarine Waters) according to the Commonwealth of Virginia Water Quality Standards (9 VAC 25-260). The larger, low-lying, receiving waters of the area are tidally influenced and are brackish to saline.

Wetlands are numerous in the WFF vicinity. The open water areas adjacent to and within WFF are mostly bordered by wetlands that fall into three categories: marine, estuarine, and palustrine. Marine and estuarine wetlands are tidal wetlands, and palustrine wetlands can be tidal or nontidal. Wetlands in the

area of WFF are delineated by the Accomack County Wetlands Board, the Commonwealth of Virginia, and the USACE (Occu-Health, Inc., 1999).

2.3.2 Facility Soils

Soils at WFF are coastal plain soils that are typically nearly level, very deep, and well drained. Soils within upland, terrace, and level portions of the MB area are predominately Bojac fine sandy loam [US Department of Agriculture (USDA), 1994] (see Figure 2-3). This soil type is reported to be a low organic content, acidic, well-drained soil with moderately rapid permeability. The more steeply sloped areas around the perimeter of the MB and the slopes leading from the level areas to the marshlands are predominantly classified as Molena loamy sand. These soils have properties similar to the Bojac series but reportedly have a higher permeability and are more acidic. Other identified soil types include silty loams and mucky sandy loam (Chincoteague and Polawana series) that occur within the marshland areas around the outer perimeter of the MB.

2.3.3 Area General Hydrogeology

The WFF is located in the Atlantic Coastal Plain Physiographic Province and is underlain by a thick sequence of approximately 7,000 feet of unconsolidated sediments that unconformably overlie crystalline bedrock. The sediments range in age from Recent to Cretaceous and generally consist of alternating series of sands, silts, clays, and gravels. The individual geologic units dip gently to the southeast at a rate of approximately 20 to 80 feet per mile (less than 1 degree) and also thicken in the downdip direction, creating a wedge-shaped section of sediments that gradually thin westward to their updip limit of extent at the Fall Line.

The principle water-bearing units beneath the WFF are, in stratigraphically descending order, the Pleistocene-age Columbia Group and three hydraulically isolated aquifer units within the underlying Miocene-age Yorktown Formation [United States Geological Survey (USGS), 1968]. Collectively, these units form the four major aquifers on the Eastern Shore of Virginia (as identified by the VADEQ) and locally are the primary source of water for public and domestic supplies and for agricultural and industrial uses (Occu-Health, Inc., 1999).

The Columbia Group extends to a subsurface depth of approximately 60 feet and consists of interbedded sands, gravels, and sandy clays deposited under fluvial and marine conditions. The Columbia Group is overlain by a variably thin (generally about 5 feet) veneer of recent deposits composed chiefly of wind-deposited or fluvial sands, silts, and gravels. Groundwater beneath the WFF typically occurs under unconfined conditions within the recent deposits and Columbia Group at depths of 0 to 30 feet (Occu-

Health, Inc., 1999). The water table, as is generally the case with most shallow unconfined aquifers, reportedly mimics the general surface topography. Aquifer tests conducted at the WFF indicate that the hydraulic conductivity of the Columbia Group ranges from about 80 to 200 feet per day, and the specific yield of these deposits ranges from about 0.01 to 0.13 (Occu-Health, Inc., 1999).

The Yorktown Formation is approximately 1,000 feet thick and consists of alternating sequences of fine-to coarse-grained glauconitic sands (that may be variably clayey, silty, or shelly) and finer-grained silts and clays (USGS, 1968; Occu-Health, Inc., 1999). The sands comprise the dominant aquifers, and the silts and clays form aquitards that create confining conditions and that separate the Yorktown Formation into three (upper, middle, and lower) aquifers. At the WFF, the upper Yorktown aquifer generally occurs at a depth of about 100 feet below ground surface and is isolated from the overlying Columbia aquifer by a clay and silt aquitard that is approximately 20 to 40 feet thick. Aquifer tests conducted at the WFF indicated that the transmissivity ranges from about 8,500 to 14,500 gallons per day per foot for the upper aquifer to 4,000 gallons per day per foot for the middle aquifer, and the storativity ranges from about 0.003 for the upper aquifer to about 0.002 to 0.0002 for the middle aquifer. These aquifer tests also indicated that there was no significant vertical leakage across the confining unit separating the upper Yorktown aquifer from the overlying Columbia Group.

Aquifer tests conducted at the WFF were reviewed and discussed in the Design Investigation of the Aviation Fuel Tank Farm, or AFTF (Metcalf and Eddy, 1992), to evaluate the degree to which the upper Yorktown aquitard isolates groundwater flow within the Columbia Group and prevents the downward migration of this groundwater into the underlying Yorktown aquifer. This evaluation was performed to satisfy a request by the State Water Control Board (SWCB) for an assessment of the risk of vertical migration of shallow (Columbia Group) groundwater contamination at that site into the underlying Yorktown aquifer due to the pumping of nearby potable supply wells. A review of the design report indicates that there is no single pumping test that can confirm the hypothesis that there is no groundwater migration across the upper aquitard, but, taken as a group in combination with other published materials discussing the regional Yorktown aquifer, the studies suggest that this conclusion is correct.

The aquifer test most pertinent to this current investigation involved the pumping of former supply well D-39 (a shallow well completed in the Columbia Group) for 72 hours, and the measurement of aquifer responses in the Columbia Group and the upper Yorktown Formation in a pair of nearby monitoring wells (Metcalf and Eddy, 1992). The rate of drawdown in the Columbia Group was constant throughout the pumping period, and it was concluded that the constant drawdown (or more specifically, the absence of a reduced rate of drawdown through time) was indicative of a lack of recharge (or leakage) from the underlying Yorktown Formation.

Another test discussed in the Design Investigation (Metcalf and Eddy, 1992) suggested that leakage across the confining unit may occur, but the results from this test were highly qualified and considered inconclusive or questionable. In this test, the pumping of former supply well F-35 (completed in the upper Yorktown Formation) for 24 hours apparently induced drawdown in an adjacent monitoring well completed in the Columbia Group. However, changes in the rates of drawdown in this well were interpreted as potential interferences from the pumping of other nearby supply wells (Metcalf and Eddy, 1992). It was also noted that although the monitoring well used for this test was completed in the Columbia Group, the borehole for that well was originally drilled into the upper Yorktown Formation. From this, the investigation concluded that if local leakage across the aquitard did occur, it may have been through the breach created by the borehole.

Other aquifer tests presented in the Design Investigation report (Metcalf and Eddy, 1992) were primarily intra-Yorktown tests that demonstrated the efficacy of the Yorktown aquitards in separating the Yorktown into hydraulically isolated upper, middle, and lower aquifers. In one test, the pumping of the middle Yorktown aquifer did not induce a response in the overlying Columbia aquifer. The lack of hydraulic communication between the Middle Yorktown aquifer and the Columbia was attributed to the presences of aquitards within the Yorktown and between the Yorktown and Columbia formations. However, it could not be stated for certain that the presence of the upper aquitard alone would have produced the same effects.

Groundwater flow directions within the Columbia Group throughout the base are variable, but are consistent with the flow directions that are typical or expected for a water-table or unconfined aquifer. That is, the topography of the water table is a generally subdued reflection of the surface topography. The WFF is essentially a peninsula that is surrounded on three sides by surface water bodies that reside at an elevation of sea level and function as discharge points for groundwater, and groundwater generally flows from the facility towards these surface water bodies. As will be discussed in detail in Section 4, the WOD is also essentially a peninsula-like feature and groundwater at the WOD flows in northwesterly to northeasterly direction, toward the unnamed tributary and Little Mosquito Creek.

2.3.4 Area Water Supplies

Groundwater is the only source for drinking, agricultural, and process water within the WFF area. This is generally true for a large portion of the Eastern Shore. Because of the reliance on groundwater and the coastal proximity of the area, the Commonwealth of Virginia has declared the Eastern Shore of Virginia a Critical Groundwater Area. The withdrawal of groundwater from the area, including Accomack County, is controlled through the issuance of withdrawal permits under the Virginia Groundwater Management Act. The State Water Control Board, in consultation with local planning commissions and the Department of

Health, administers the permitting program and allocates groundwater withdrawal volumes as part of the permitting process.

WFF operates and maintains its own permitted water supply system that includes five wells actively used to withdraw water from the Yorktown Formation. The locations of the WFF MB potable supply wells are illustrated on Figure 2-4. In addition, NOAA and the Town of Chincoteague operate water supply wells located on WFF property. NOAA operates a single well drilled into the Yorktown aquifer. The Town of Chincoteague operates eight supply wells located along the eastern boundary of the WFF MB property. Three of these wells are shallow wells drilled into the Columbia aquifer and the other five wells are deeper wells installed in the Yorktown aquifer. Table 2.1 presents depth and screened interval information for the supply wells located on the MB facility.

The WFF MB supply wells are not affected by the WOD, which has locally impacted the Columbia Aquifer. As illustrated on Figure 2-4, the supply wells are all located hydraulically upgradient from the WOD, as the groundwater originating at the WOD migrates in a generally northeastward and northwestward direction and toward Little Mosquito Creek and the unnamed tributary. The supply wells are located at least 3,000 feet upgradient of the WOD, and because most of these wells withdraw water from the Yorktown Aquifer, are also vertically isolated from the WOD by the intervening upper Yorktown aquitard. The Town of Chincoteague supply wells that withdraw water from the Columbia Aquifer are located approximately 4,000 feet upgradient of the site.

3.0 WASTE OIL DUMP (WOD) BACKGROUND AND HISTORY

3.1 WOD DESCRIPTION

3.1.1 Facility Location

The WOD is located at the northern end of Runway 17-35 on a peninsula-like feature adjacent to Little Mosquito Creek (see Figure 3-1). The southern half of the site is basically flat, with little slope, and is grass covered. The central portion of the site slopes to the north and east, with slopes ranging from 1 to 3 percent. The northern, eastern, and western boundaries of the site are steeply sloped. These slopes direct non-infiltrated surface runoff into low-lying marshes that border an unnamed tributary to Little Mosquito Creek and Little Mosquito Creek. The northern portion of the site was recently clear cut of a large stand of conifer trees. Vegetation currently consists of bushes and tall grasses. Immediately to the west and southwest, the WOD is bordered by two other suspected disposal sites used by the Navy prior to NASA operations. These two sites are referred to as Debris Pile-Site 15 and Abandoned Drum Field-Site 9. Both of these sites have been designated as Formerly Utilized Defense Sites (FUDS) under federal programs and are under investigation by the USACE. There are no surface water bodies within or immediately adjacent to the disposal area at the WOD. The closest body of water is a narrow, unnamed tributary to Little Mosquito Creek located about 160 feet west of the site. Approximately 300 feet of marshland to the north and east separate WOD from Little Mosquito Creek.

3.1.2 WOD Operational History

The WOD was reportedly used for the disposal of waste oils and possibly solvents from the 1940s through the 1950s (Versar, Inc., 2001a). Reportedly, the site was used to dispose of excess waste oil that could not be used for fire training activities at the Former Fire Training Area (FFTA) site. No records are available to determine the types and quantities of materials disposed or the duration of this activity at the site. The USACE and the EPA have both conducted evaluations of historical aerial photographs that assist in defining the nature and timeframe of the use of the WOD (USACE, 2000; USEPA, 1996).

The WOD is evident as an excavated area north of Runway 17-35 in a 1943 aerial photograph (USACE, 2000). An open, less heavily vegetated and more level area is present between the runway and the suspected WOD area. As indicated in Section 2 of this report, the runway and the support structures were constructed during 1942 and 1943. Photographs from 1949 and 1954 (USACE, 2000), show a larger excavated/disturbed area at WOD with an unpaved road leading to the area along the edge of Runway 17-35. The disturbed area encompasses most of the peninsula-like feature; however, the open undisturbed area still exists between the runway and the site. The area appears to be unchanged in a

1957 photograph other than the presence of vegetation in the center of the area. Waste activities were not visible at the time (EPA, 1996). The area appears to be slightly more vegetated in a 1959 photograph (USACE, 2000), and an additional road appears to be present leading from the end of the runway to the disturbed area (EPA, 1996). What appears to be a "deep excavation" running east to west in the center of the site was present in 1961 (USACE, 2000). The area appears to be unchanged in 1963 (USACE, 2000) and inactive and revegetated in 1967 (USEPA, 1996). Additional aerial photographic coverage from 1974, 1980, 1982, 1988, and 1994 indicate that the area was inactive and revegetated (USACE, 2000; USEPA, 1996).

3.2 WOD ENVIRONMENTAL INVESTIGATION HISTORY

Environmental actions began at the WOD in August 1986 when the Commonwealth of Virginia conducted an inspection of the site and identified the presence of waste (reported as waste oils) on the surface of the site. Following further inspection and consultation, NASA conducted a removal action in the area from November 12 to December 30, 1986 including the excavation and removal of approximately 180 cubic yards of impacted soils in four separate areas of the site (Figure 3-2). No samples were collected for analysis during or after the excavations. The Commonwealth of Virginia provided NASA with a letter indicating that no further investigations were necessary regarding the potential release of petroleum products at the site (Versar, Inc., 2001a).

A PA consisting of interviews, review of historical records, and a site walk-over was conducted at the WOD in 1988. The PA recommended further investigation and sampling based on the potential for residual contamination and the reported disposal of solvents in the area (Ebasco Services, Inc., 1988). An SI conducted from 1989 through 1992 included the performance of soil gas surveys, surface and subsurface soil and sediment sampling, and the installation and sampling of groundwater monitoring wells.

Two separate soil gas surveys were conducted at the WOD. In August/September 1989, a limited soil gas survey consisting of nine sampling points spaced at 100-foot intervals was conducted. Samples were analyzed using a field instrument. One of the soil gas sample results indicated the presence of elevated concentrations of volatile organic compounds (VOCs) (Ebasco Services, Inc., 1990b). A second soil gas survey, consisting of 37 sampling points, was conducted in June 1990. Sampling points were located throughout and between the areas excavated in 1988, and the samples were analyzed using a field instrument. The results indicated a potential for minor VOC contamination in the area, and further soil and groundwater sampling was recommended (Ebasco Services, Inc., 1990b).

Additional sampling activities were conducted in 1990 and 1992. In 1990, two surface and one subsurface soil, two sediment, and two groundwater samples were collected from the WOD and analyzed for target compound list (TCL), VOCs, semi-volatile organic compounds (SVOCs), pesticides, PCBs, and target analyte list (TAL) metals. The analytical results were not validated and sampling locations were not surveyed. Based on the review of these results, the 1990 SI report identified a potential for contamination and the release of contamination from the site. However, the results were reevaluated as part of the SI review process between 1990 and 1992. In 1992, it was concluded in the final revision to the SI report that there was no analytical evidence that waste remained at the WOD. This conclusion was based on a comparison of the 1990 analytical results and the results of samples collected from five additional borings to action levels, background levels, and EPA guidance criteria (Metcalf & Eddy, Inc., 1992). Five samples were collected from the borings at depths varying from 1 to 15 feet below ground surface and analyzed for total petroleum hydrocarbon (TPH). No TPH was detected in any of the samples (Metcalf & Eddy, Inc., 1992). As a result of these findings, a no further action recommendation was made for the WOD. The analytical data and site history for WOD were reviewed during the completion of a base-wide RCRA Facility Assessment (RFA) conducted in 1991 and 1992. The RFA concluded, based on the 1992 SI Report, that the WOD did not require any further investigation.

No additional work was completed at WOD until 1997. In 1997, monitoring well WFF15-GW7 was installed in the WOD area (see Figure 3-3) as a background well for investigations being conducted at Site 15 (located west of WOD). This well was sampled in 1997 and 1998 as part of the Site 15 RI. The analytical results from these samples indicated the presence of solvent and petroleum compounds (Versar, Inc., 2001a). In response to this finding, NASA conducted an inspection of the WOD and identified an area of stained soil and stressed vegetation (see Figure 3-3). The stained soil area is west of the area that was excavated in 1986, and the ground surface is stained with and contains what appears to be weathered petroleum-based materials.

An RI was conducted at the WOD from 1998 through 2000 and included a review of historical data, the performance of a geophysical survey, the installation and sampling of temporary monitoring wells, sampling of surface and subsurface soils, and the installation and sampling of permanent monitoring wells (Versar, Inc., 2001a). The geophysical survey consisted of an electromagnetic survey using an EM-31 ground conductivity meter conducted to identify the presence of buried metal and nonmetal objects. The survey was conducted over a 200,000-square-foot area extending from the runway to about 190 feet north of monitoring well WFF15-GW7 and about 150 feet west to about 350 feet east of WFF15-GW7. The survey indicated that the WOD did not contain large areas of buried material or a large burial area. Two small areas of possible buried metal debris were identified. The survey findings were confirmed through the advancement of soil borings throughout the area (Versar, Inc., 2001a).

The geophysical survey was followed by the advancement of 31 soil borings using direct push methodology throughout the stained soil area and the area covered by the geophysical survey. The borings were extended into the water table and ranged in depth from 12 to 30 feet below ground surface. Twenty-seven of these borings were converted to temporary monitoring wells and were sampled and analyzed for VOCs and TPH [gasoline range organics (GRO) and diesel range organics (DRO)] using an on-site mobile laboratory and for arsenic using an off-site laboratory. The analytical data were not validated but were used to select locations for permanent monitoring wells (Versar, Inc., 2001a). The temporary wells were surveyed, and water level data were recorded for each well.

Based on the data collected from the temporary wells, six new permanent monitoring wells were installed in the study area (WFF16-GW1, WFF16-GW-2S, WFF16-GW2D and WFF16-GW3 through WFF16-GW5, see Figure 3-4). Groundwater samples were collected from these wells and existing wells MW-3, WFF15-GW1 and WFF15-GW7 on four occasions from 1997 through 2000. Samples were collected in April 1997 and March 1998 from WFF15-GW1, WFF15-GW7 and MW3 as part of the Site 15 RI. Samples were collected from monitoring wells WFF16-GW1 through WFF16-GW5 in May 1998. The final round of sampling was conducted in February 2000 and included samples from the new monitoring wells and WFF15-GW7. All samples were collected using hand bailers and analyzed for TCL organics, TAL inorganics, and TPH (GRO and DRO), and the analytical results were validated using EPA validation protocol (Versar Inc., 2001a). All monitoring wells were surveyed, and water level measurements were taken during each round of sampling. In addition to groundwater sampling, other groundwater investigations included a groundwater tidal influence study conducted at monitoring well WFF15-GW7 and slug testing conducted at nearby wells installed during the Site 14 and 15 RI. These aquifer tests were conducted as part of the Site 14 and 15 RI concurrent with the WOD RI (Versar, Inc., 2001b).

Soil investigations conducted during the WOD RI included the collection of 21 surface soil and 4 subsurface soil samples collected from within and immediately around the area of stained soil and stressed vegetation (Figure 3-4). Samples were analyzed for TCL organics, TAL inorganics, and TPH (GRO and DRO), and the analytical results were validated using EPA validation protocols. Surface soil samples were collected from 0 to 6 inches below ground surface, and subsurface samples were collected at varying depths ranging from 17 to 24 feet below ground surface (Versar, Inc., 2001a). Based on the findings and results of the investigation, an RI/FS report for the WOD was prepared in March 2001 (Versar, Inc., 2001a). The RI findings are presented in more detail in the Supplemental RI work plan (TtNUS, 2003a) and discussed in Sections 3.4 and 5.0 of this report.

3.3 WOD ENVIRONMENTAL SETTING

3.3.1 Topography and Surface Water

The WOD is currently an open field vegetated with grasses, shrubs, and bushes. The southern half of the site is relatively flat with little slope, and is grass covered. The central portion of the site slopes to the north and east, with a change in elevation from about 28 feet above msl to about 12 feet msl over a 1,200-foot distance. The northern, eastern, and western boundaries of the site are formed by steep slopes that direct non-infiltrated surface runoff into low-lying marshes that border an unnamed tributary to Little Mosquito Creek and Little Mosquito Creek. There are no surface water bodies within or immediately adjacent to the disposal areas at the WOD. The closest body of water is a narrow, unnamed tributary to Little Mosquito Creek located about 160 feet west of the site. Approximately 300 feet of marshland to the north and east separate WOD from Little Mosquito Creek.

3.3.2 WOD Soils

The WOD Site is located near the northern perimeter of the MB, north of the end of Runway 17-35. The soils at the WOD belong to the Molena series (see Figure 2-3) (USDA, 1994). These soils are described as a well-drained, fine to coarse sandy loam with low organic content. Because the WOD is adjacent to a main runway and considering the past operations at the site, it is likely that the soils at the WOD have been disturbed and reworked. Considering the natural topography of the area, it is possible that the WOD experienced some filling with soil materials from nearby portions of the MB that consist of Bojac series soils. These soils are of similar type but are reported to have a higher percentage of finer-grained sands.

3.3.3 WOD Geology as Determined by Previous Investigations

The boring logs generated during the RI (Versar, Inc., 2001a) indicated that the geology of the Columbia Group beneath WOD is generally similar to the regional geology. The geologic materials were reported to consist of a fine-to medium-grained quartz sand with some silt, and the lithology did not differ significantly throughout the site.

A sandy clay layer was consistently encountered at depths ranging from 10 to 27 feet below ground surface, or (considering the differences in site topography) at an elevation near sea level, and was also encountered in adjacent Site 15 near the same elevation. The thickness of this clay at the WOD was reported to be as much as 5 feet. Based on the local and regional stratigraphy, this clay was not believed to represent the upper Yorktown aquitard, which at the nearby Fire Training Area was encountered at an elevation of about

25 feet below sea level (Metcalf & Eddy, Inc., 1996b). It was concluded that the clay layer was a localized lens within the Columbia Group. Laterally extensive, fine-grained deposits would not be unusual for the paleoenvironmental and depositional conditions of the Columbia Group (i.e., probable channel and overbank sediments deposited in a low-relief, coastal plain setting) that existed during the Pleistocene Era.

3.3.4 Groundwater as Determined by Previous Investigations

Groundwater occurrence and flow characteristics for WOD have been interpreted and reported in the RI/FS for the WOD (Versar, Inc., 2001a) and for adjacent Site 15 in the RI/FS for Sites 14 and 15 (Versar, Inc., 2001b). These studies only investigated the Columbia Group; no monitoring wells were installed into the Yorktown Formation.

The depth to groundwater beneath the WOD is variable due to the varying topography across the site. In March 2000, the depth to groundwater varied from about 23 feet at monitoring well WFF16-GW-1 (located near the end of the runway) to about 6 feet at well WFF16-GW-5 (located along the northwestern border of the site and adjacent to Site 15) (see Figure 3-4). In May 1998, the static water elevations were generally about 0.5 foot higher than in March 2000. Groundwater elevations in the Site 15 monitoring wells are also pertinent to this investigation because they monitor the groundwater conditions near the suspected groundwater discharge point at the unnamed tributary to Little Mosquito Creek. Depths to groundwater in the Site 15 monitoring wells were not measured during either round of the WOD RI but have historically been very shallow, consistent with their position adjacent to (or within) a groundwater discharge zone. Because the groundwater elevation data for WOD are limited, no conclusions can be reached regarding the degree of seasonal fluctuation nor the effects of varying weather cycles (wet versus drought) on the position of the water table at this site.

Contour mapping of the water table and an interpretation of groundwater flow direction were presented in the RI (Versar, Inc., 2001a). This interpretation indicated that the general direction of groundwater flow at and near the water table was consistent with and generally mimicked the surface topography, which is common for shallow, unconfined aquifers. Figure 3-5 presents the groundwater contour interpretation from the RI and indicates that the WOD is basically bisected by a groundwater divide that trends north-to-northeastward through the peninsula, although the hydrogeological interpretations concerning the presence and position of the divide (and all interpretations east of the divide) are severely constrained by a lack of groundwater data from the eastern half of the peninsula (Versar, Inc., 2001a). Groundwater to the west of the divide is indicated as flowing in a generally west to northwestward direction and toward the unnamed tributary to Little Mosquito Creek. Based on this interpretation, it was assumed that the groundwater flowing from the western side of the WOD discharges into the unnamed tributary to Little Mosquito Creek that flows through Site 15 and the wetlands adjacent to Little Mosquito Creek. Groundwater east of the divide was

assumed to flow in a generally east to northeastward direction and flow toward and discharge into Little Mosquito Creek and its adjacent wetlands.

3.4 CONCEPTUAL SITE MODEL (CSM)

As described in Section 3.2, a series of environmental investigations and actions occurred at the WOD from 1986 through 2000. The following sections present an overview of the nature and extent of contamination identified in these investigations and discusses the analytical results and physical characteristics of the WOD in the form of a general CSM. Many of the earlier investigations did not include the rigorous analytical data handling and validation requirements that are necessary to support the completion of a CERCLA RI or risk assessment. However, that analytical data is referred to for collaborative or comparison purposes where appropriate.

3.4.1 Surface Water and Sediment

There are no surface water bodies within the WOD nor are there any surface water bodies located immediately adjacent to the disposal sites. The majority of the WOD is relatively flat, and the majority of precipitation is expected to infiltrate into the ground. The perimeter of the WOD is sloped such that overland flow from the site enters low-lying, poorly drained areas or marshes that border nearby surface water bodies. The closest stream is an unnamed tributary to Little Mosquito Creek located about 160 feet to the west of the WOD. The headwaters of this unnamed tributary are formed by a permitted outfall that discharges water from the stormwater management system, wash racks and oil/water separator located at the main airfield hangar. Additionally, the tributary flows adjacent to and between FUDS Sites 9, 14 and 15. Little Mosquito Creek is located about 300 feet north of the WOD. The unnamed tributary, Little Mosquito Creek, and other nearby surface water bodies in the area have been sampled and evaluated as part of RI/FS activities at Sites 14 and 15. These investigations included the collection and analysis of surface water, sediment, and ecological receptor (target) tissue samples (Versar, Inc., 2001b). Because there is no direct surface flow between the WOD and these surface water bodies, no surface water samples have been collected in conjunction with WOD investigations.

3.4.2 Soils

Twenty-one surface soil samples were collected from WOD during the 2000 RI. All of these samples were collected in and around the area of stained soil and stressed vegetation (Figure 3-4). No other areas within WOD were sampled during the RI. However, prior to collecting surface soil samples, a visual inspection and geophysical survey were conducted throughout the study area. No other areas of waste disposal were evident or identified as a result of these surveys (Versar, Inc., 2001a). Based on this

observation, the surface soil sampling program focused on the area that exhibited visual evidence of contamination.

The 21 surface soil samples were analyzed for VOCs, SVOCs, pesticides/PCBs, and TAL inorganics, and the analytical results were validated using EPA-approved methods and protocols (Versar Inc., 2001a). Eight organic compounds and 20 metals were positively identified in the WOD surface soil samples. Positive results for DRO and GRO TPH were also identified in these samples. Of the eight organic compounds detected, five were SVOCs and the remaining three were pesticides. The full analytical results for these surface soil samples are discussed in Section 5.0 of this report.

Benzo(a)pyrene was identified as the major surface soil contaminant of concern at the WOD. It was detected in two samples at concentrations greater than human health risk-based screening concentrations. Samples 3WFF16-SS9 and 3WFF16-SS10 (see Figure 3-4) contained benzo(a)pyrene at 910 ug/kg and 1,200 ug/kg, respectively (Versar, Inc., 2001a). Both of these samples were collected from the center of the stained soil area.

Metals analytical results were fairly consistent across the site and were similar to background levels. Pesticide analytical results consisted of isolated, low-level detections that did not indicate an association with site activities.

An ecological risk assessment (ERA), conducted in accordance with EPA guidance, was completed as part of the WOD RI (Versar, Inc., 2001a). An ecological characterization including a review and identification of habitat types, organisms, populations, communities, and endangered species occurrence associated with the WOD was conducted. Surface soil sample results were compared to EPA Region 3 biological technical assistance group (BTAG) screening levels to identify contaminants of potential concern (COPCs) for the ERA. Thirteen contaminants were identified as COPCs based on this screening. Based on the habitat characterization and potential exposure routes, risk assessment endpoints including terrestrial plants, soil invertebrates, small carnivorous mammals, and small carnivorous birds were selected for evaluation. Toxicity data and exposure pathway parameters, using EPA guidelines and published reference data, were evaluated for each COPC and risk assessment endpoint to characterize potential WOD ecological risks. Based on this assessment, the RI concluded that there was a very limited potential for adverse ecological impacts from several metals present in WOD surface soils (aluminum, chromium, lead, vanadium, and zinc). The metals that contributed most to the potential adverse impacts were aluminum and chromium. The WOD concentrations of these metals were noted as being at or less than background concentrations (Versar, Inc., 2001a).

Four subsurface soil samples, one from each boring (see Figure 3-4), were collected during the RI and analyzed for the same parameters as surface soils. The analytical results were validated as described above and discussed in full in Section 5.0 of this report.

The analytical results for the subsurface soil samples indicated the elevated presence of VOCs and SVOCs. Ethylbenzene was detected at concentrations ranging from 1,100 ug/kg to 2,200 ug/kg. Toluene and xylene concentrations as high as 1,700 ug/kg and 13,000 ug/kg respectively, were detected. The highest concentrations of these VOCs were detected in the sample collected from boring SB-2 (2WFF16-SB2). This boring, located near the eastern border of the stained soil area, also contained the most significant number and concentrations of SVOCs (2-methylnapthalene at 29,000 ug/kg; naphthalene at 7,700; phenanthrene at 7,800 ug/kg). Similar but slightly lower concentrations of these contaminants were identified in the sample collected from boring SB1 (2WFF16-SB1). Only trace or estimated low levels were detected in samples collected from SB3 and SB4. Benzene was not reported as detected in any of the surface or subsurface soil samples (Versar, Inc., 2001a).

Metals were detected in the subsurface soils but at levels that appeared to be consistent with surface soil levels identified at the site and in background samples collected from the area (Versar, Inc., 2001a).

3.4.3 Groundwater

Nine monitoring wells at WOD were sampled as part of the RI. The sampling occurred on four occasions from April 1997 through February 2000. No single round of sampling included all nine wells. Groundwater samples were analyzed for VOCs, SVOCs, and TAL inorganics. The analytical results were validated using EPA validation protocols (Versar, Inc., 2001a). Data from the four sampling events were pooled into one database and used for evaluating site characteristics presented in the RI (Versar, Inc., 2001a).

Analytical results from the four sampling rounds indicated significant detections of VOCs, SVOCs, and metals. The analytical results were evaluated in the 2001 RI to identify the significance and nature and extent of the groundwater contamination. This evaluation included the comparison of groundwater contaminant levels to EPA Region 3 tap water risk-based screening concentration (RBCs) and Maximum Contaminant Levels (MCLs) and examining the occurrence and distribution of the detected contaminants. As a result of this evaluation, benzene, toluene, 1,2-dichloroethene (1,2-DCE), ethylbenzene, several SVOCs, arsenic and lead were identified as the major contaminants that characterized the extent and significance of contamination at the site.

With one exception, the maximum concentrations of organic and metals contamination were detected in monitoring well WFF15-GW7 (see Figure 3-4). The only exception was 1,2-DCE for which the maximum concentration (8 ug/L) was detected in well cluster WFF16-GW2S/D. Monitoring wells WFF15-GW7 and WFF16-GW2S/D are located at opposite ends of the stained soil area. These two wells also contained significant concentrations of benzene (maximum 58 ug/L), toluene (maximum 1,400 ug/L) and ethylbenzene (maximum 280 ug/L). Benzene, toluene, 1,2-DCE, and ethylbenzene were either not detected or detected at infrequent low levels (below RBCs) in other wells (Versar, Inc., 2001a).

SVOCs detected at significant levels included 2-chlorophenol, 2-methylnaphthalene, 4-methylphenol, carbazole, dibenzofuran, naphthalene, and phenanthrene. All of these SVOCs were detected almost exclusively at WFF15-GW7, WFF16-GW2S, and WFF-16-GW2D. The highest and most frequent detections, and the only levels in excess of the tap water RBCs, were at WFF15-GW7. These compounds were either not detected or present at trace estimated concentrations in other wells.

Monitoring well WFF15-GW1, located in the projected downgradient direction from the stained soil, was the only other well that consistently contained a similar contaminant pattern as monitoring wells WFF15-GW7, WFF16-GW2S, and WFF-16-GW2D. However, the frequency and levels of detection in this well were significantly less than in the upgradient wells, and for the most part concentrations did not exceed MCLs or RBCs.

Arsenic and lead were the most significant metals detected during the groundwater sampling events. Similar to the organic contamination pattern, the maximum concentrations (arsenic at 88.2 ug/L and lead 62.8 ug/L) were detected in well WFF15-GW7. Samples collected from wells WFF16-GW2S and WFF-16-GW2D were the only other samples that contained arsenic and lead levels greater than reported background levels.

3.4.4.4 Summary of CSM as Determined By Previous Investigations

Based on historical records and the available analytical and groundwater level results, it was concluded in the RI that past waste oil disposal activities at the WOD were the source of a limited groundwater contamination plume. Groundwater in the area occurs in an unconfined water table aquifer within the Columbia Group that is isolated by an aquitard from the lower Yorktown Formation. A groundwater divide was interpreted to exist at the WOD, and groundwater was projected to flow in a northwesterly and northeasterly direction from the crest of the site. Groundwater measurements and subsequently projected groundwater contours indicated that the groundwater was relatively flat with no steep gradients. The groundwater plume, consisting of organic and metal contaminants, appeared to be fairly stable and located immediately beneath and/or slightly downgradient of the area of stained soils.

This conceptual model of the site is limited by the number and location of samples collected to date. Historical records indicate that the WOD site consists of an area more expansive than that addressed in the RI. Although a removal action was completed in other disposal locations at the WOD, no samples were collected at the time of the removal, and no surface or subsurface investigations have been conducted in those areas since. In addition, a limited number of monitoring wells are available to characterize the groundwater at the site. Surface runoff patterns have not been investigated to date to characterize the potential impact of the site on the surrounding wetlands.

3.5 PLANNED SUPPLEMENTAL REMEDIAL INVESTIGATION

Supplemental RI activities to refine the CSM and meet the objectives identified in Section 1.1 of this report were defined in a final work plan (TtNUS, 2003a). That work plan includes a detailed description of the field effort, data handling and management, and data evaluation process and methodologies to be applied in completing this Supplemental RI. The work plan includes a Sampling and Analysis Plan (SAP) and a Quality Assurance Project Plan (QAPP) that provide a discussion of methods and procedures to be applied in performing the Supplemental RI. The sampling program presented in the work plan is summarized in the following sections. Pesticide analysis was not included in any of the Supplemental RI site-specific samples. This decision was based on a review of existing historical information and analytical data which indicated that pesticides were not associated with any site-specific activity. In addition, because of the lack of an association with any site specific activity or finding, historical pesticide results were not to be included in any supplemental data evaluations.

3.5.1 Background Study

The work plan presents a review of background surface and subsurface soil and groundwater data available from historical investigations conducted at WFF. In addition, the work plan discusses the completion of a separate study to be conducted within the MB to characterize the two major soil types (Bojac and Molena) present within the MB and to collect additional groundwater data. The completion of the MB background study includes the evaluation of existing data and the compilation of historical and new data for application under this Supplemental RI. No background soil samples were planned as part of the Supplemental RI program. Site-specific background groundwater samples were to be collected from monitoring well MW-3. The groundwater samples were to be analyzed for VOCs plus Methyl Tri-Butyl Ethane (MTBE), SVOCs, PCBs, TAL total and dissolved metals (field-filtered), and monitored natural attenuation (MNA) parameters [hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and total organic carbon (TOC)]. Groundwater field parameters [pH, temperature, dissolved oxygen, oxidation reduction potential (ORP), salinity, conductivity, turbidity, alkalinity, ferrous iron, and hydrogen sulfide] also were to be measured at each well.

3.5.2 Soils

Soil sampling activities to be conducted to further characterize the WOD were to consist of collecting 25 surface and 25 subsurface samples. The study area was defined as that area north of the end of Runway 17-35 starting at about 160 feet north of the runway and extending throughout the peninsula-like feature. This area was defined through a review of background information and historical aerial photographs that indicated suspected former disposal and/or disturbed zones within this area. The samples were to be collected at locations placed on approximate 80-foot centers to allow for coverage of the entire study area and to investigate the presence or absence of waste materials, residues, or contamination associated with past use of the area for waste disposal. Several specific areas of interest were identified and sampling locations were adjusted from the 80-foot centers to include sampling locations immediately upgradient of monitoring wells WFF15-GW7 and WFF16-GW2 S/D.

A surface soil sample consisting of soils from 0 to 6 inches below ground surface was to be collected from each location. In addition, a boring was to be advanced to the water table at each location to characterize the subsurface materials and allow for the collection of subsurface samples. A subsurface sample was to be collected from each boring at evidence of waste or at the depth of the highest photoionization detector (PID) reading, or at mid-depth if no waste or elevated PID readings were encountered. Samples were to be analyzed for VOCs, SVOCs, PCBs, and TAL metals. Additionally, surface soil samples were to be analyzed for TOC, pH and grain size.

3.5.2.1 Marsh Area Soils

Additional surface soil samples were to be collected around the perimeter of the former disposal area near the marshlands that surround the WOD to characterize any potential releases associated with runoff from the former disposal area. Eleven surface soil samples (0 to 6 inches in depth) were to be collected from depositional areas along the perimeter of the WOD. Sampling locations were to be selected in the field based on field conditions and were to be located at the base of the embankment around the site, in areas of potential erosion and runoff, and spaced to ensure adequate coverage of the marsh soils along the eastern, northern, and western sides of the site. Samples were to be analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH, and grain size.

3.5.3 Surface Water

Surface water was not expected to exist in the immediate vicinity of the WOD. The work plan indicated that if open surface water channels that potentially receive runoff from the site were noted during the selection of marsh soil sampling locations, the surface waters and sediments would be sampled. In

addition, if leachate outbreaks or seeps were noted, these were also to be sampled. If surface water samples were required, they were to be analyzed for VOCs, SVOCs, PCBs, and TAL metals. Sediment samples, if collected, were to be substituted for the marsh soil samples and analyzed for the same parameters. In addition, a separate surface water sample was to be collected and analyzed for TAL dissolved metals analysis.

3.5.4 Groundwater

The groundwater investigation was to consist of the installation of new monitoring wells, the redevelopment of existing wells, the collection of groundwater samples, and two rounds of synoptic groundwater level measurements. Three new wells (including a replacement well for MW3, which was noted to be damaged) were to be installed at the WOD to allow for better characterization of groundwater flow patterns and to provide sampling points to characterize groundwater conditions in the eastern and northern portions of the site. The well screens were to be installed across the water table.

All monitoring wells (new and existing) were to be developed prior to the performance of groundwater level measurement and sampling activities. Sampling was to occur no sooner than 10 days after completion of well installation and development. Samples were to be collected using low-flow methods and analyzed for VOCs, SVOCs, PCBs, TAL total and TAL dissolved metals (field-filtered), and MNA parameters (hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and TOC). In addition, groundwater field parameters [dissolved oxygen (DO), ph, ORP, salinity, conductivity, turbidity, temperature, alkalinity, ferrous iron, and hydrogen sulfide] were to be measured at each well.

4.0 SUPPLEMENTAL RI INVESTIGATIONS

4.1 BACKGROUND STUDY

A background study of soils and groundwater for the WFF MB area was conducted in 2003. The results of that study are presented in a report, Background Soils and Groundwater Report for the Main Base at National Aeronautics and Space Administration (NASA) Wallops Flight Facility (WFF), dated May 2004 (TtNUS, 2004). The background study included the evaluation of existing background samples as well as the collection and analysis of additional soil and groundwater samples from locations identified as being outside of the influence of known or suspected waste sites or sources of contamination. A separate work plan for the background study, identifying the location of sampling points, analytical protocols, data management, and data evaluation methodologies was approved by the EPA and VADEQ.

The background study included a comparison and statistical evaluation of the similarities and differences among chemical/analyte concentrations detected in the two major soil series (Bojac and Molena) present at the MB. In addition, the study evaluated the similarities and differences between chemical/analyte concentrations detected in surface and subsurface samples within the same soil series. The background study concluded that there are sufficient differences in metals concentrations between Bojac and Molena series soils to consider them dissimilar for background data comparisons. In addition, the study concluded, based on the occurrence and distribution of concentrations of a number of metals, that the surface and subsurface profiles for each soil series were dissimilar and suggested that a compositional difference exists with depth (TtNUS, 2004). For organics, the study concluded that surface and subsurface soils were dissimilar but that no significant differences were apparent between the two soil series. The background study presents the evaluation of the background soils in detail and includes tables of analytical results for each soil series and depth (surface and subsurface).

The soils at the WOD have been categorized as belonging to the Molena series. As indicated above, an evaluation of surface and subsurface background samples within the Molena series indicates that surface and subsurface soils should be evaluated separately. For the purposes of this Supplemental RI, the background data set established in the referenced background report (TtNUS, 2004) will be used to evaluate site-specific soil samples collected and analyzed from the WOD. Tables 4.1 through 4.4 present the occurrence and distribution of substances detected in background surface and subsurface soil samples. Figures 4-1 and 4-2 show the background soil sample locations.

As indicated above, the background study included the evaluation, collection, and analysis of background groundwater samples. The well identified as a WOD site-specific well, MW-3, was sampled during the background study and during the Supplemental RI. The analytical results for both sampling events are shown in Appendix A. Table 4.5 presents the occurrence and distribution of substances in all background

groundwater samples, and Table 4.6 presents the metals results for filtered background groundwater samples. Figure 4-2 shows the location of the MB background monitoring wells.

4.2 SOIL INVESTIGATION AND SAMPLING

Surface and subsurface soil sampling was conducted at the WOD between February 6 and 26, 2003. Sampling locations were surveyed by a licensed professional surveyor, and locations were tied back into benchmarks referenced to the Virginia State Plane Coordinate System, South Zone, North American Datum 1983 (NAD 1983) High Accuracy Recovery Network (HARN) Adjustment, 1993. Elevations were referenced to the National Geodetic Vertical Datum 1929 (NGVD 29). Survey data is presented in Appendix B. Unless indicated below, all work was performed in accordance with the work plan (TtNUS 2003a). The following sections describe any deviations from the work plan, briefly describe the field investigation activities, and present significant observations made during the field investigation.

4.2.1 Surface Soils

The work plan designated 25 surface soil and 11 marsh soil samples for collection and analysis. All samples were to be analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH and grain size.

4.2.1.1 Deviations from the Work Plan

Three additional surface soil samples (WOD-SS-121, -122, and -123) were collected in the area immediately upgradient (south) of the suspected source area near monitoring well WFF15-GW7 (see Figure 4-3). These samples were collected at the location of additional soil borings advanced after encountering elevated PID readings in the subsurface soils at location WOD-SS/SB-102 (see Section 4.2.2 for a discussion of subsurface soil findings). The samples were collected 25 feet west, east, and south of location WOD-SS-102 and were analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH and grain size.

One surface soil sample (WOD-SS-128) collected from the eastern boundary of the WOD (see Figure 4-3), was considered a marsh soil rather than a surface soil because it was collected at the base of a steep embankment, and groundwater was encountered within two feet of the ground surface at this location. The sample was analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH and grain size.

4.2.1.2 Surface Soil Sampling and Analysis

A total of 27 surface soil and 12 marsh soil samples, two more soils and one more marsh soil than anticipated in the work plan, were collected during the Supplemental RI. Figure 4-3 shows the surface and marsh soil sampling locations, along with the 2001 RI sampling locations. All samples were collected and analyzed in accordance with the work plan. Surface soils consisted, in general, of silty fine-to medium-grained sand with some occurrence of clays. The soils around the perimeter of the WOD contained more noticeable amounts of fine silt and less sand. The marsh soil samples, in general, consisted of dark, organic-rich sandy silt. No other significant observations were noted during the investigation. Sample logs for the surface soil and marsh soil samples are presented in Appendix C.

4.2.2 Subsurface Soils

The work plan designated 25 borings and subsurface soil samples for collection and analysis. All samples were to be analyzed for VOCs, SVOCs, PCBs, and TAL metals.

4.2.2.1 Deviations from the Work Plan

Three additional borings (WOD-SB-121, -122, and -123) were advanced in the southern (upgradient) portion of the site, (see Figure 4-4). These borings were located 25 feet west, east, and south of boring WOD-SB102 in response to encountering elevated PID readings in WOD-SB102, which was placed within a suspected source area. Subsurface soil samples were collected from each of these soil borings at the 10 to 12 foot depth interval and were analyzed for VOCs, SVOCs, PCBs, and TAL metals.

One boring at the eastern perimeter of the site was not advanced as planned. The work plan designated that a boring was to be located about 80 feet east of boring location WOD-SB125. During the field investigation, this location was found to be at the base of the embankment, inaccessible to drilling equipment, and located between two marsh soil sampling locations. In addition, the water table in this area was encountered within 2 feet of the ground surface. Because of the location, the elevated water table, and the close proximity of other borings (WOD-SB125 and -SB127), only a surface soil sample was collected from this location.

According to the work plan, borings were to be advanced using direct push technology, and subsurface materials were to be collected in an acetate-lined macrocore sampling device. This technology was not used at soil boring locations WOD-SB126 and -SB127, because the area was not accessible to a direct push rig. These two borings were advanced using an all-terrain vehicle (ATV) drilling rig and split spoons.

Split spoon samples were collected continuously from the surface in these two locations, and the split spoon content was logged and sampled.

Soil recovery was poor at boring locations WOD-SB110 and -SB111. Because the material recovered in the macrocore samplers at these two locations was inadequate for the required sample volume, an additional macrocore was collected at each of these locations. The second boring was driven within several feet of the original location, and the material was sampled to complete the sample volume requirements.

4.2.2.2 Subsurface Soil Sampling and Analysis

A total of 27 subsurface soil samples were collected and analyzed for VOCs, SVOCs, PCBs, and TAL metals as designated in the work plan. The samples were collected from 27 borings that were advanced from ground surface to the water table and were collected at the depth exhibiting the highest PID reading or at mid-depth if no elevated PID readings were encountered, with the exception of sample WOD-SU-117-0102. This sample was collected at the 1 to 2 foot depth because the water table was encountered at 2 feet below the ground surface. Figure 4-5 shows the locations of the subsurface soil samples, along with the 2001 RI subsurface soil sampling locations.

Borings, with the exceptions noted above, were advanced using the direct push method, and the subsurface materials were retrieved using a macrocore sampler, with the recovered material collected in an acetate sleeve. A 2-inch diameter macrocore sampler was used to allow for sufficient volume to log the subsurface lithologies and for the collection of analytical samples. In general, the subsurface material consisted of silty fine-to medium-grained sand with the sand content and grain size increasing with depth. The presence of clay mixed with the sand was also noted in the deeper borings, and the clay content increased with depth. The water table was encountered at a depth of about 23 feet in areas of higher elevation south of the site (WOD-SB102, -SB123 area), 14 to 12 feet below ground surface over the relatively flat portions of the site (from WOD-SB106 to WOD-SB119), and decreased with surface topography to the north (10 to 8 feet at WOD-SB114 and WOD-SB-116). In the areas of lower elevation at or near the base of the embankment that forms the perimeter of the site, the water table was encountered at depths of 4 to 2 feet below ground surface.

Elevated PID readings ranging from 63 parts per million (ppm, benzene equivalent) to 206 ppm and a strong fuel odor were recorded in soil boring WOD-SB102. These were encountered from the 15 foot depth down to total depth of 24 feet below ground surface. The highest PID reading (206 ppm) was recorded at the water table, which was approximately 21.5 feet below the ground surface. Because of these observations and because this boring was located immediately upgradient of monitoring well

WFF15-GW7, which historically contained the most significant contamination, three additional borings (WOD-SB-121, -122, and -123) were advanced 25 feet to the west, east and south. No evidence of waste materials, odors, or elevated PID readings were noted in these borings until the water table was reached at an approximate depth of 23 feet. Elevated PID readings ranging from 75 ppm to 200 ppm, and a petroleum odor were recorded from soils retrieved from immediately below the water table. No odors or PID readings were noted in the soils above the water table in these borings.

No elevated PID readings were encountered in any of the other borings. However, a layer of soft, wet fill material containing glass, metal, and ceramic fragments and wood and charcoal debris was encountered in borings WOD-SB110 and -SB111. The material was mixed with the silty sand and extended from a depth of 2 to 12 feet and 4 to 10 feet, respectively in these borings. As indicated in Section 4.2.2.1, two borings were advanced in both of these locations because of poor soil recovery in the first macrocore sampler. The same subsurface material was encountered in the second set of borings, and a sandy clay was encountered at the 12 foot depth immediately below the fill material. Samples were collected from the 2 to 4 foot depth from boring WOD-SB110 and from the 5 to 7 foot depth in boring WOD-SB111. Sample logs and boring logs for the Supplemental RI field program are presented in Appendices C and D, respectively.

4.3 SURFACE WATER

No surface water channels, seeps, or open water was found at the perimeter of the WOD during the Supplemental RI field investigation. No surface water or sediment samples were collected and in accordance with the work plan, the low-lying marsh soil surrounding the WOD was sampled to assess the potential for contaminant migration.

4.4 HYDROGEOLOGIC INVESTIGATION

According to the work plan, two new wells and a replacement background well were to be installed at the WOD and the new and existing (10) wells were to be developed and sampled. Samples were to be collected using low-flow methods and analyzed for VOCs, SVOCs, PCBs, TAL total and dissolved metals (field-filtered), and MNA parameters (hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and TOC). In addition, groundwater field parameters (DO, pH, ORP, salinity, conductivity, turbidity, temperature, alkalinity, ferrous iron, and hydrogen sulfide) were to be measured at each well.

Hydrogeologic investigations were conducted at the WOD between February 10, and March 18, 2003. The following sections describe any deviations from the work plan, briefly describe the field investigation, and

present significant observations made during the field activities. Unless noted below, all samples were collected and analyzed in accordance with the final work plan (TtNUS, Inc., 2003a). Figure 4-6 shows the locations of the newly installed and existing wells at the WOD. All new and existing wells were surveyed by a licensed professional surveyor and locations were tied back into benchmarks referenced to the Virginia State Plane Coordinate System, South Zone, North American Datum 1983 (NAD 1983) High Accuracy Recovery Network (HARN) Adjustment, 1993. Elevations were referenced to the National Geodetic Vertical Datum 1929 (NGVD 29). Survey data are presented in Appendix B.

4.4.1 Monitoring Well Installation and Development

The work plan called for the installation of one replacement and two new monitoring wells to be constructed with 10-foot screened intervals placed across the water table. Rationale for well placement is contained in the work plan and Section 3.5.4 of this report.

4.4.1.1 Deviations From the Work Plan

Because of the shallow water table encountered during the installation of the two new wells (WFF16-GW6 and -GW7), these wells were constructed using a 5-foot screen rather than the planned 10-foot screen. A shorter screen was used to ensure that the water table intersected the screened interval and the wells met the objectives defined in the work plan (TtNUS, 2003a). Well construction was also modified to accommodate the shallow nature of these wells. The filter pack was placed to extend 1 foot above the screen rather than the planned 2 feet, and a 1.5 feet thick bentonite seal was placed above the filter pack rather than the planned 2 feet thick seal.

Several deviations from the well development procedures described in the work plan were necessary because of low water levels and yields. These deviations consisted of the following:

- Due to low water levels and yields, monitoring wells WFF16-GW2S, WFF16-GW4, WFF16-GW5 and WFF15-GW2 were developed using peristaltic pumps and/or hand bailers instead of submersible pumps.

- Monitoring well WFF16-GW1 was not developed because there was only 1 foot of water in the well, which was an insufficient volume to operate a submersible or peristaltic pump or allow for bailing.

- Monitoring well WFF16-GW3 was not developed because the well was dry during the well development phase of the investigation.

4.4.1.2 Monitoring Well Drilling, Construction, and Development

One replacement well and two new monitoring wells were drilled, constructed, and developed at the WOD. Existing monitoring well MW-3 was abandoned by removing the surface/security casing and the well casing to a depth of 1 foot below the ground surface and filling the well casing, by tremie pipe, with a cement/bentonite grout mixture. The surface pad was removed and the top 1 foot of the well boring and the surface area around the abandoned well were filled with cement. The replacement well, WFF15-MW3R, was installed as the WOD site-specific background well (see Figure 4-6). Monitoring wells WFF16-GW6 and -GW7 were installed along the eastern edge of the WOD to provide monitoring points for groundwater sampling and water level measurements in areas where no data points existed.

The wells were installed using the hollow-stem auger drilling method. Continuous split-spoon samples were obtained and lithologically logged for WFF15-MW3R (see Appendix E). Monitoring wells WFF16-GW6 and -GW7 were installed in soil borings WOD-SB124 and -127, respectively, so no separate drilling logs were prepared for these borings. The wells were constructed with 2-inch diameter PVC well screens and risers. The well screen openings were 0.010 inch wide (10-slot). The filter pack consisted of appropriately sized sand (Morie No. 1 or equivalent) and extended from the bottom of the borehole to a height of approximately 2 feet above the top of the screen, except as noted above. The filter pack was emplaced by pouring the sand into the borehole and around the screen. An annular seal consisting of bentonite chips or pellets was installed above the filter pack. The seal had a minimum thickness of 2 feet, except as noted above, and was allowed to fully hydrate per the manufacturer's recommendations before the remainder of the borehole was backfilled. The remainder of the annular space was backfilled with a bentonite/cement grout (approximately 5 pounds of bentonite and 7 gallons of potable water per 94-pound bag of Portland cement). A concrete collar was installed from a depth of 2 feet to the ground surface and around the steel protective standpipe. Well construction diagrams for these wells are contained in Appendix E.

Existing monitoring wells were re-developed and all new monitoring wells were developed. Wells were developed with a submersible pump except where low yields required the use of peristaltic pumps and hand bailers. A surge block was used as an aid in well development. Turbidity was monitored during development, and well development continued until a turbidity value of less than 10 NTU was achieved, or for a maximum of 3 hours. The field geologist recorded the field-measured parameters of pH, conductivity, dissolved oxygen, and turbidity on well development logs. Groundwater elevations were obtained prior to and after well development activities. All groundwater generated during well development activities was containerized for subsequent characterization and appropriate disposal.

Significant observations recorded during well development are presented below:

- A 0.4-feet thick petroleum product layer was present on the surface of the water column in WFF15-GW7 before well development. During development, the water was noted to have sheen, and a product layer developed after containerization. At the completion of well development activities, no measurable product layer was present in the well.

- A petroleum odor was noted during the development of WFF16-GW2S. There was no noticeable sheen in the development water after containerization. No petroleum odor was noted when samples were obtained from this well about 2 weeks later.

- Sulfur-like odors and very low yields were encountered during the development of monitoring wells WFF16-GW4 and -GW5. No odors were noted in these wells during subsequent sampling activities.

- Similar sulfur-like odors were noted at WFF15-GW1 and -GW2 during both development and sampling activities.

4.4.2 Water Level Measurements

Two rounds of synoptic water level measurements were conducted. The first round, prior to monitoring well sampling, was performed on March 3, 2003 after a significant snowfall/melt event. The second round of water level measurements was performed on March 19, 2003, several days after the conclusion of monitoring well sampling. Water level measurements, well construction, and elevation data are presented in Table 4-7.

4.4.3 Groundwater Sampling and Analysis

As indicated above and in the work plan, a complete round of groundwater samples was to be collected from 13 monitoring wells at the WOD. Samples were to be collected using submersible bladder pumps, or peristaltic pumps if necessary, and in accordance with EPA Region 3 low-flow (low-stress) sampling guidelines. Samples were to be analyzed for VOCs, SVOCs, PCBs, TAL total and dissolved metals (field-filtered), and MNA parameters (hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and TOC). In addition, groundwater field parameters (DO, pH, ORP, salinity, conductivity, turbidity, temperature, alkalinity, ferrous iron, and hydrogen sulfide) were to be measured at each well.

4.4.2.1 Deviations From the Work Plan

Several slight deviations in the sampling occurred due to well yields and volume. Deviations from the plan include:

- Monitoring wells WFF16-GW1 and -GW2S went dry during sample collection. Sufficient sample volume was obtained using the standard low-flow sampling technique for all parameters except hydrogen. The hydrogen sample was collected the following day after the well was allowed to recharge.

- Monitoring well WFF16-GW5 exhibited a very low yield during the low-flow sample purging phase, and the well was pumped dry before samples could be collected. The well was allowed to recharge overnight before sampling. The well yield was insufficient to support the collection of hydrogen samples from the well. All other samples were collected according to the work plan.

- Sampling at monitoring well WFF16-GW3 was conducted using a peristaltic pump. The water level in this well was too low to allow for operation of the submersible bladder pump. The sampling was conducted in accordance with the SAP and EPA Region 3 "Low-Flow" (Low-stress) sampling guidelines, and the "straw" method was used to collect the VOC samples.

4.4.3.2 Groundwater Sampling

A total of 13 monitoring wells (3 newly installed and 10 existing wells) were sampled during the Supplemental RI from March 12 through March 18, 2003. Samples were obtained using low-flow sampling techniques with a few minor exceptions noted above. All samples were analyzed for the parameters noted above with the exception of monitoring well WFF16-GW5. The yield was too low in this well to sustain sufficient water flow to allow for the collection of a hydrogen gas sample. Figure 4-7 shows the locations of the 13 wells sampled during the Supplemental RI. Field measurements and MNA parameter data were collected from the wells during the sampling effort and are presented in Table 4.8.

The following observations were noted during the sampling:

- Monitoring wells WFF15-GW7 and WFF16-GW2S were checked for the presence of a petroleum product layer before sampling. A 0.06-feet thick layer of petroleum product was measured in WFF15-GW7. There was no product layer or petroleum odor present at WFF16-GW2S.

- A PID reading of 10.4 ppm was obtained in the wellhead at WFF15-GW7.

- A PID reading of 0.5 ppm was obtained in the wellhead at WFF16-GW2S.

- A PID reading of 0.8 ppm was obtained in the well head at WFF16-GW5.

- Sulfur-like odors but no PID reading was noted during the sampling of monitoring wells WFF15-GW1 and -GW2.

Samples from the following wells had a noticeable color or the well failed to achieve the targeted 5 NTU turbidity reading after purging:

- The sample from WFF15-GW7 was described as "slightly cloudy." Turbidity in this well stabilized at 15 NTUs after 2 hours of purging. The initial turbidity reading in this well was 155 NTUs.

- Turbidity in WFF16-GW2S decreased from an initial reading of 83 NTU and stabilized at 9 NTUs after 2 hours of purging. The sample was described as "clear."

- Turbidity in WFF16-GW2D decreased from an initial reading of 76 NTU and stabilized at 7.5 NTUs after 1.5 hours of purging. The sample was described as "clear."

- The sample from WFF15-GW2 was described as "light brown." Turbidity in this well stabilized at 18 NTUs after 1.75 hours of purging. The initial turbidity reading in this well was 52 NTUs.

- The sample from WFF16-GW5 was described as "light brown." Turbidity readings in this well decreased from 100 NTUs to 48.5 NTU before the well ran dry after 0.5 hours of purging at rates decreasing from 100 ml/minute to 25 ml/minute. The well fully recovered after 0.5 hours and the turbidity was measured at 76 NTUs. The well was purged for another 15 minutes and the turbidity decreased to 27.4 NTUs before the samples were collected.

- The sample from WFF16-GW4 was described as "light brown." Turbidity in this well remained elevated and stable even after 2 hours of purging. Turbidity readings only decreased from 94.9 NTUs to 90.7 NTU after 2 hours of purging.

- The sample from WFF16-GW7 was described as "slightly tan." Turbidity in this well stabilized at 9 NTUs after 1.5 hours of purging. The initial turbidity reading in this well was 188 NTUs.

- The sample from WFF-MW4 was described as "light brown." Turbidity in this well remained high and stabilized at 130 NTUs after 2.5 hours of purging. The initial turbidity reading in this well was 357 NTUs.

4.5 GEOLOGY

The borings completed during the Supplemental RI generally confirm the site geology described in the 2001 RI (Versar, Inc., 2001a). The lithologic unit immediately underlying the site, the Columbia Group, was found to consist of predominantly fine to medium sand with lesser amounts of silt and clay. The lithology was consistent throughout the site.

During the 2001 RI, a sandy clay layer was frequently encountered at an elevation around sea level (Versar, Inc., 2001a). This clay layer was also encountered in the three Supplemental RI well borings and in a majority of the soil borings at the WOD that extended to sea level (see Appendices D and E for boring logs). The clay layer was typically 1 to 2 feet thick and varied in composition from clayey sand to silty clay to clay.

Fill material was encountered in two soil borings, WOD-SB-110 and WOD-SB-111 (see Section 4.2.2.2). The fill consisted of various debris (glass, concrete, wire, ceramic, metal, charred wood) in a silty sand matrix and was encountered at a depth of approximately 4 feet and extended at least to 12 feet in SB-110 and to 10 feet in SB-111.

The thickness of the Columbia Group was not investigated during the 2001 RI or the Supplemental RI. However, during concurrent drilling operations at the nearby FFTA, the Columbia Group was found to be approximately 50 feet thick. The bottom of the Columbia Group was marked by a clay layer, the upper Yorktown aquitard, which was encountered at the FFTA at an elevation of approximately 22 feet below sea level. None of the borings at the WOD were deep enough to encounter this unit.

4.6 HYDROGEOLOGY

Groundwater levels were measured in the WOD area monitoring wells on March 3 and 19, 2003. Table 4-7 provides information regarding the well depths, static water level measurements, and water level elevations. In general, the water levels on March 19 were slightly higher (up to 0.14 meters/0.44 feet) than those measured on March 3. The depth to groundwater at the WOD on March 19 ranged from 7.99 meters (26.20 feet) in WFF15-MW3R, near the end of Runway 17-35, to 0.87 meters (2.95 feet) in WFF15-GW1, on the bank of the unnamed tributary to Little Mosquito Creek (see Figure 4-8).

The groundwater elevation contours for the shallow groundwater at the WOD are illustrated in Figure 4-8. The current interpretation generally agrees with that of the 2001 RI. The groundwater flow directions reflect the influence of surface topography. The site is on a small peninsula that extends from the end of Runway 17-35 towards Little Mosquito Creek to the north. A groundwater divide bisects the site from southwest to

northeast, following the axis of the peninsula west of the divide flows to the northwest and the unnamed tributary to Little Mosquito Creek. Groundwater east of the divide flows towards Little Mosquito Creek and the adjacent marshlands. The two new data points provided by WFF16-GW6 and WFF16-GW7 have confirmed this interpretation by providing groundwater elevation points for the eastern part of the site. Groundwater originating at or flowing through the source area (near WFF15-GW7) flows generally northwest towards the unnamed tributary to Little Mosquito Creek. The horizontal hydraulic gradient beneath the WOD, as measured between WFF15-GW7, near the top of the peninsula, and WFF16-GW5, on the bank of the unnamed tributary, is 0.009.

Because of the nature of the contamination (petroleum), most of the wells at the WOD monitor the groundwater at or near the water table. Consequently, there is little information regarding the hydraulic head variation with depth. There is only one location, the WFF16-GW2 cluster, where two depths are monitored. WFF16-GW2S is screened from 9 feet to 19 feet, and WFF16-GW2D is screened from 23 feet to 28 feet below ground surface. On March 19, the groundwater elevations in WFF16-GW2S and WFF16-GW2D were 5.40 and 5.06 feet above msl, respectively, indicating a slightly downward vertical hydraulic gradient. The downward flow indicated by the vertical hydraulic gradient is expected to be impeded by the sea level clay layer.

To investigate the vertical component of groundwater flow beneath the WOD, a hydrogeological cross section was constructed from WFF15-MW3R, near the end of the runway, northwest to FTA-MW104S, on the opposite side of the unnamed tributary (see Figure 4-9). This cross section, presented in Figure 4-10 shows a predominantly vertical hydraulic gradient (downwards) at the top of the slope in the vicinity of wells WFF15-GW7 and WFF15-MW3R. Topographically downgradient, towards the unnamed tributary, the hydraulic gradient becomes progressively more horizontal, indicating flow towards the unnamed tributary. Immediately beneath the unnamed tributary, the hydraulic gradient is vertically upward in the shallowest groundwater (at and near the water table), which indicates groundwater discharge.

5.0 NATURE AND EXTENT OF CONTAMINATION

This section presents the results of the chemical analyses performed for surface soils, subsurface soils and groundwater samples collected during this Supplemental RI. In addition, historical data for these media will also be included in this evaluation.

The data are summarized in tables for each sampling medium and in tables comparing analytical results to corresponding background results. The latter tables summarize the occurrence and distribution of results for each chemical (frequency of detection, minimum result, maximum result, and location of the maximum result). The tabulated number of data points for each chemical varies depending on the number of results that were qualified as rejected or non-detected due to blank contamination as part of the data validation process. Individual sample results are presented in a complete database format in Appendix A.

5.1 USE OF HISTORICAL ANALYTICAL DATA

The work plan for the Supplemental RI (TtNUS, 2003a) and Sections 3.2 and 3.4 of this report detail the historical investigations and results at the WOD. As presented in the previous sections, the 2001 RI included the collection and analysis of samples from the area of stained soils and select monitoring wells. The usability of the data and a summary of results for each medium are discussed in this section.

5.1.1 Data Usability

Analytical data from the 2001 RI were verified as to validation status and the interpretation of qualifiers attached to individual results. Data qualified as rejected (R) or false positives attributable to blank contamination (B) were removed from further consideration. Data qualified as estimated (J) or biased high (K) or low (L) were retained. An assessment of data usability was performed to determine if detection limits were adequate to meet the project objectives defined in the work plan (TtNUS, 2003a). A review of the 2001 RI data for the WOD indicates that these data are acceptable.

5.1.2 Surface Soils

Twenty-one surface soil samples were collected from the WOD during the 2001 RI. The validated analytical results for these samples are included in Appendix A. Table 5.1 presents a summary of analytical results for these samples (2WFF16-SB1S1 through 3WFF16-SS17) and the surface soil samples collected during the Supplemental RI. The sampling locations for the 2001 RI are shown in Figure 3-4. All of the 2001 RI surface soil samples were collected from the area of stained soil and

stressed vegetation. The results for these samples will be considered in evaluating the nature and extent of contamination at the WOD and in assessing human health and ecological risks.

Although the 2001 RI included an assessment of human health risks, the risk assessment did not take into consideration current EPA and VADEQ risk assessment guidelines and did not include a complete set of exposure scenarios. For the Supplemental RI human health risk assessment (HHRA), the 2001 RI data will be combined with the data from the Supplemental RI, and the combined data set will be used in risk assessment. In addition, the data will be evaluated to determine if an area of elevated risk or "hot spot" exists.

The 2001 RI included an assessment of ecological risks that applied appropriate EPA and VADEQ guidelines and is considered acceptable. For the Supplemental RI ecological risk assessment (ERA), the 2001 RI data will be combined with the Supplemental RI data into one data set and the data set will be compared to the 2001 RI data. The purpose of the comparison is to see if the combined data set is similar or different from the 2001 RI data set. An ERA using the surface soils will only be performed if the combined data set indicates a higher level of contamination considering the Supplemental RI sample results.

5.1.3 Subsurface Soils

Four subsurface soil samples were collected during the 2001 RI from four borings (SB1 through SB4) advanced at the WOD. The soil borings were located within and immediately adjacent to the stained area and downgradient of monitoring well WFF15-GW7, which exhibited high levels of contamination in earlier investigations. Samples were collected from the base of the four borings at depths ranging from 19 to 24 feet below ground surface. The validated analytical results for these samples are contained in Appendix A. A summary of analytical results for these samples (2WFF16-SB1S2 through 2WFF16-SB4S2) and the subsurface soil samples collected during the Supplemental RI are presented in Table 5.2. The sample locations are shown on Figure 3-4. The results for these samples will be considered in evaluating the nature and extent of contamination at the WOD and in assessing human health risks. Because these samples were collected at depths greater than 2 feet below the ground surface, they do not present a risk to ecological receptors and will not be considered in the ERA.

5.1.4 Groundwater

Nine monitoring wells were sampled during the 2001 RI. The sampling occurred on four occasions from April 1997 through February 2000. No single round of sampling included all nine wells. Monitoring wells MW-3, WWF15-GW1, and WWF15-GW7 were sampled in April 1997 and March 1998 (see Figure 3-4).

In May 1998, wells WFF16-GW1, -GW2S, -GW2D, -GW3, -GW4, and -GW5 were sampled. The final round of sampling was conducted in February 2000 and included the same six wells sampled in May 1998 plus well WFF15-GW7. Data from the four sampling events were pooled into one database and used for evaluating site characteristics in the 2001 RI (Versar Inc., 2001a).

Three additional monitoring wells were installed during the Supplemental RI to augment the existing monitoring points. These new wells and 10 existing wells were sampled in March 2003 and provide the most recent and most comprehensive data set available for the WOD. Because the analytical data from the 2001 RI were collected over a 3-year period using varying sampling methods, represent a less complete data set, and do not represent current conditions, the historical data will not be used for risk assessment purposes. The historical data will be used only for qualitative discussions of apparent contaminant patterns over time.

5.2 COMPILATION OF HISTORICAL AND SUPPLEMENTAL RI DATA

The Supplemental RI was performed to fill the data gaps identified in the work plan (TtNUS, 2003a). The Supplemental RI data, combined with the acceptable historical data discussed above, form the complete data set to evaluate the nature and extent of contamination and determine risks to human health and the environment. The sample analytical results presented in Appendix A of this Supplemental RI contain the results from the historical data combined with the Supplemental RI data.

5.2.1 Supplemental RI Data Usability

All analytical data from the Supplemental RI were validated following EPA Region 3 and national functional guidelines. Data qualified as rejected (R) or false positives attributable to blank contamination (B) were removed from further consideration. Data qualified as estimated (J) or biased high (K) or low (L) were retained. Appendix F contains the validation reports and support documentation for the Supplemental RI data. An assessment of data usability was performed to determine if detection limits were adequate to meet the project objectives defined in the work plan (TtNUS, 2003a). Based on the data usability review, the analytical data for the Supplemental RI are acceptable except for the instances stated above (data qualified B or R).

5.2.2 Surface Soils

Twenty-seven surface soil samples (WOD-SS-101 through WOD-SS-127) were collected from the WOD from February 6 through 21, 2003. The samples were collected, in general, based on an 80-foot grid pattern established across the site. Some field variations to the sampling locations were made to account

for suspected source areas as detailed in Section 4.2.1. Sampling locations are shown in Figure 4-3. Samples were analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH, and grain size.

Twelve marsh surface soil samples (WOD-SS-128 through WOD-SS-139) were collected from around the perimeter of the WOD from February 19 through 26, 2003. The samples were collected from the base of the embankment that forms the perimeter of the WOD site and in areas of runoff and deposition as detailed in Section 4.2.1. Sampling locations are shown in Figure 4-3. Samples were analyzed for VOCs, SVOCs, PCBs, TAL metals, TOC, pH, and grain size.

The 39 surface soil samples collected during the Supplemental RI combined with the 21 surface soil samples detailed in Section 5.1.2 form the data set to evaluate the nature and extent of surface soil contamination at the WOD. A summary of analytical results for the combined data set is presented in Table 5.1.

5.2.3 Subsurface Soil

Twenty-seven subsurface soil samples (WOD-SU-101-1315 through WOD-SU-127-0203) were collected from 27 borings from February 6, 2003 through February 26, 2003. The borings were advanced, in general, at locations based on an 80-foot grid pattern established at the site and in areas of suspected waste disposal. A description of the field program is presented in Section 4.2.2, and the sample locations are shown in Figure 4-5. The subsurface soil samples were collected from depths where evidence of waste materials was encountered or at mid-depth between the ground surface and the water table. Table 5.2 provides the depth for each sample. Samples were analyzed for VOCs, SVOCs, PCBs, and TAL metals.

The 27 subsurface soil samples collected during the Supplemental RI combined with the four subsurface soil samples detailed in Section 5.1.3 form the data set to evaluate the nature and extent of subsurface soil contamination at the WOD. A summary of analytical results for the combined data set is presented in Table 5.2.

5.2.4 Groundwater

The Supplemental RI field investigation included the drilling and construction of three new monitoring wells and the collection of groundwater samples from a total of 13 monitoring wells as detailed in Section 4.4. Monitoring wells sampled during the Supplemental RI are shown on Figure 4-7. The groundwater samples were obtained via low-flow sampling techniques following appropriate EPA Region 3 protocol and guidelines, and analyzed for VOCs, SVOCs, PCBs, TAL total and dissolved metals (field-filtered), and MNA

parameters (hydrogen, soluble manganese, nitrate, chloride, sulfate, methane/ethane/ethene, and TOC). Groundwater field parameters (pH, temperature, dissolved oxygen, ORP, salinity, conductivity, turbidity, alkalinity, ferrous iron, and hydrogen sulfide) were measured at each well.

The 13 samples collected during the Supplemental RI form the data set to evaluate the nature and extent of groundwater contamination at the WOD. Summaries of analytical results for the groundwater data set are presented in Table 5.3 and Table 5.4. As discussed in Section 5.1.4, historical groundwater sample results were used to formulate the CSM and are used for qualitative evaluation purposes and to support the evaluation of contaminant trends only.

5.3 BACKGROUND DATA COMPARISONS

5.3.1 Statistical Approach

Statistical methods presented in the WOD work plan (TtNUS, 2003a) were applied to compare the concentrations of substances detected in WOD samples to those found in background samples. Statistical methods adhere to published guidance (EPA, 2002a, 2000, 1998, 1996a, 1994a, 1994c, 1994d, 1992a, 1992b, 1989a, and 1989b; US Navy, 2000, 1999, 1998) and other literature references (Gilbert, 1993 and 1987; Gehan, 1965; and Millard and Deverel, 1988).

Section 4.1 of this report presents a discussion of the WOD background study conducted in 2003. Soil and groundwater data considered usable from the background study are applied in this section to compare to results from WOD samples and to evaluate whether compounds detected on site are related to site operations or attributable to background or anthropogenic conditions.

Background comparisons for metals were handled somewhat differently than background comparisons for organics. The background study found significant differences in metals concentrations between Bojac and Molena soil series and between surface and subsurface soil within the Molena soil series. Because the Molena soils predominate at the WOD, site-related surface and subsurface soil data for metals were statistically compared to background surface and subsurface soil data sets from the Molena classification. The background study revealed significant differences in concentrations of organic substances between surface and subsurface soil but not between the two soil series. Therefore, background organic data from the two soil types were consolidated to yield a larger surface soil data set that was statistically compared to WOD surface soil organic data. The background subsurface soil organic data were also consolidated from both soil types for comparison to WOD subsurface soil organic data.

The background study included approximately 10 samples of each background soil type, which was the stated goal in the WOD work plan to achieve adequate statistical power to detect small differences between background and site concentrations. However, individual circumstances for specific analytes can also impact statistical power, such as distributional shape, frequencies of detection, and whether the ranges of detection limits are low compared to the ranges of positive results, so statistical background test results for certain chemicals were qualified as not applicable on a case-by-case basis.

There were not sufficient upgradient groundwater samples to allow quantitative statistical comparisons to WOD site-related groundwater samples, so data were compared on a qualitative basis only. Appropriate background groundwater samples were limited to the wells upgradient of the WOD Site and only samples collected in 2003 were utilized because different groundwater sampling methods were used in earlier sampling rounds.

5.3.2 Data Pretreatment

Several data pretreatment steps were necessary prior to conducting statistical tests. For chemicals with at least one positive detection in each data set, a value of one-half the sample quantitation limit was assumed for non-detect (U qualified) results. Duplicate samples were averaged together and considered as one result. For duplicates, where one result was positive and the other result was a non-detect, the problem of calculating an average result arose whenever half the detection limit exceeded the positive result. In these situations, the positive result was used to represent the non-detect.

The WFF background study conducted in 2003 included screening for extreme values and anomalies. Findings were documented in the background study report. No suspect data were identified among the samples collected in the 2003 supplemental investigation, and data qualified unusable (R) or affected by blank contamination (B) were eliminated from consideration in this Supplemental RI.

Prior to conducting any background data comparisons, the underlying statistical distribution of data was determined for each detected chemical. The Shapiro-Wilk W-test or the Shapiro-Francia Test (EPA, 1992d) were performed to determine if the data set of chemical concentrations matched the shape of a normal or lognormal distribution. [The latter test is required if there are greater than 50 samples (EPA, 1992d, 1996a).] Normally distributed data exhibit a characteristic "bell-shape" curve that is symmetrical, whereas lognormal data have a skewed shape with a longer tail at the high-concentration end. For each analyte, the W-test was performed once using the original data and once after data was converted to their logarithms. A 5 percent level of significance was used to determine if the data deviated from either hypothesized distribution. Associated W-test scores greater than the critical value indicate that the

hypothesis of a normal or lognormal distribution cannot be rejected at a 0.05 level of significance, respectively.

The distributional shapes that were assumed in parametric background tests are listed in the background test results in Tables 5.5 and 5.6. W-test scores for distributional analysis tests for all substances detected in groundwater, surface soil, and subsurface soil are presented in Appendix G.

The shape of the data distribution determined which background comparison tests were applicable as summarized by the following decision scheme:

Case 1: If the W-test accepted the hypothesis of a normal distribution for both site and background, the parametric t-test as well as the set of nonparametric background comparison tests were conducted to decide whether site exceeded background.

Case 2: If the W-test rejected the hypothesis of a normal distribution for both site and background, but accepted the hypothesis of a lognormal distribution for both site and background, then only the set of nonparametric background comparison tests were conducted to determine that site exceeded background.

Case 3: If the W-test rejected both hypothesis of either a normal distribution or lognormal distribution for both site and background, then only nonparametric background comparison tests were conducted.

Special Cases for the upper tolerance limit (UTL) test: The UTL test was not used to decide globally that site exceeds background, but rather IF site data were first determined to exceed background based on the other statistical tests, then the information presented in the UTL test could be used to evaluate whether individual sample results might represent hot spots. If the W-test accepted the hypothesis of a normal distributional shape and the score reflected a better fit than for a lognormal shape, then the UTL test was based on the raw (not log-transformed) data. If the W-test accepted the hypothesis of a lognormal distributional shape and the score reflected a better fit than for a normal distribution shape, then the UTL test was based on the log-transformed data. If the W-test indicated that the data did not match either a normal or lognormal shape and there were at least 19 data points in the background data set, then the UTL was based upon substitution of the non-parametric 95^{th} quantile of the background data set.

5.3.3 Background Comparison Tests

To determine if results of samples from the WOD site are elevated relative to background sample results, an array of statistical procedures was applied that consist of three quantitative tests that look for overall differences between the entire populations of site and background data values; four quantitative tests that essentially look for hot spots; and two qualitative tests that examine only the frequency of detection (proportion of detected versus non-detected values in site versus background) but not the magnitude of values.

Each statistical test was run using a decision-making probability level (P-level) of 0.05, which means that, in situations where the test conclusion states that site-related results are greater than background, the chance of the test yielding a false conclusion caused by random variations in the data set is five percent or less. The overall conclusion (whether site results are greater than background) was assumed to be "yes" if any one of the quantitative tests concluded that site data are elevated above background. If no conclusion could be reached for any of the quantitative tests (e.g., if the assumptions necessary to run each of the various tests were not valid), then the overall decision was based on the conclusions of the qualitative tests alone. Further information regarding each statistical test is presented below:

- The means of the two data sets were compared if both site and background matched a normal distribution. If the site and background data exhibit equal standard deviations (based upon Bartlett's test for equal variances), then the student's t-test was applied; otherwise, Satterthwaite's t-test was performed to see if the site mean is greater than the background mean. The t-test is valid only if at least 85 percent of site data and 85 percent of background data are positive detects, there are at least three sampling points in each data set, and the pooled standard deviation is not zero.

- Nonparametric statistical tests, which do not require underlying assumptions regarding equal data distributions, were also applied in each case. The Mann-Whitney U-test was used to determine whether the site and background data are from populations with identical medians and rank distributions. The Mann-Whitney test involves combining the two data sets, ranking results from smallest to largest, and evaluating whether the two sites have a similar distribution of data within the range of low to high ranks. If more than 40 percent nondetected results were present in either the site or the background data set or when multiple levels of detection limits are present, a different statistically valid test, Gehan's test, was substituted because recent guidance (EPA, 1992c) indicates that the Mann- Whitney test is not valid in the aforementioned situations. (Gehan's test is statistically equivalent to the Mann-Whitney Test if all results are positive.) For either of these tests to work, not all data points can be tied and there must be at least two background data points. The Mann-Whitney U test and the Gehan test statistics were computed using appropriate score adjustments for tied

values and a normal approximation when sufficient data points were available; whereas, an exact computation of probabilities was used in the situations where there were very few (for example, less than eight) data points.

- A 95 percent upper tolerance limit (UTL) test was performed strictly to provide supplementary information to assist in locating potential hot spots of a magnitude exceeding 95 percent of the background population. Because the UTL test is designed to compare only one site-related sample to background, erroneous conclusions can occur if this test is relied upon when the site data consist of a larger number of samples, since in such cases the probability of one or more of the site-related samples exceeding the UTL is much greater than 5 percent even when the site and background data belong to the same underlying statistical population. Therefore, in accordance with Navy guidance, the UTL test was only considered as a source for qualitative information and other statistical tests were relied upon as the basis for decisions regarding whether the site population exceeds background.

- The 95 percent UTL is defined as the calculated upper limit that, on the average, is expected to include 95 percent of the background population (EPA, 1992a). If the background data were determined to match the shape of a normal or lognormal population, then the limit was calculated using the t-distribution or K-value and the appropriate normal or log-transformed mean and standard deviation from the background data set. For this test to be valid, the background data set is required to be comprised of at least 85 percent detects and at least three data points.

- A substitute procedure for the 95 percent UTL test, called the 95 percent quantile test, was employed to provide supplementary information to assist in locating potential hot spots if the background data were not in the shape of a lognormal or a normal population. For the quantile test to be valid, at least 19 background data points are required, no detection limit can be greater than the UTL, and at least 10 percent of the data points must be detects in the background data set.

- The upper ranks test (EPA, 1992c, 1996d) is another hot spot test. This test combines the site and background data into one set and determines whether the major portion of a subset of the largest detected results is comprised chiefly of site data rather than an equal mixture of site and background. In this procedure, the probability is calculated that k or more samples from the largest r data points in the combined data set are comprised of site data, assuming that the site and background populations are equal. In the event that there is less than a five percent chance that this could happen if the populations are indeed the same, then the test concludes that there is a hot spot comprised of samples from the area of interest. This test was used for making decisions regarding background.

- In the event that none of the above quantitative statistical tests yielded a definite "yes" or "no" decision, a test of proportions was used to determine if the percentage of positively detected results is greater in the site data versus the background data. When only a very small portion of results are detected (less than 10 percent), this test is recommended (EPA, 1996d, 1989b). The test is routinely applied using a normal distribution approximation to the probability that site is above background but is not considered valid when fewer than five samples are detected in either site or background. To reach a confident decision in such cases, a generalized version of the test of proportions, called the Fisher Exact Test, is required (Brownlee, 1965). This test was applied to all situations because it calculates the exact probability for all combinations of possible outcomes and gives a probability level for the condition where the observed frequency of site detects is greater than background, given the number of samples involved.

The following provides a breakdown of the decision scheme applied to determine which statistical tests were used:

Case 1: If the W-test accepted the hypothesis of a normal distribution for both site and background, then the W-test using the logarithmic conversion was not applicable and parametric as well as nonparametric background comparisons were conducted.

- For this case, the parametric t-test was performed to compare the arithmetic means of site and background only if there were greater than 85 percent detects in the site data and greater than 85 percent detects in the background data. A Satterthwaite adjustment of the t-test was used if the standard deviations between site and background data were found to be significantly different from one another (criteria based on Bartlett's Test for equal variances).

- For Case 1 (but also applicable to Cases 2 and 3, as discussed later), a nonparametric test was also selected to compare the ranks of the overall populations, based on either the Mann Whitney test or Gehan's test. The prevalence and magnitude of non-detects can bias the outcome of the Mann Whitney test, but not so for Gehan's test. Therefore, Gehan's test replaced the Mann Whitney test if any of the following circumstances occurred:

  a. if more than 40 percent non-detects were present in either the site data set or the background data set;

  b. if the number of non-detect data points from the site data that are greater than either data set's lower 25^{th} percentile for positive detections is greater than 10 percent of the total number of detects in the site data;

c. if the number of non-detect data points from the background data that are greater than either data set's lower 25th percentile for positive detections is greater than 10 percent of the total number of detects in the background data;

d. if the ratio of the highest detection limit to the lowest detection limit among all data groups combined was greater than 3.5;

e. if greater than 15 % of the data points in the site data set consisted of non-detects that were less than the 25th percentile of the subset of non-detected site data but greater than the 25th percentile of the subset of non-detected background data (a relative shift in the distribution of the two data sets' non-detects occurring in a low percentile range). The same test was also performed for the converse situation (more than 15 percent of background data consist of nondetects whose magnitude was less than the 25th percentile of non-detected background data but greater than the 25th percentile of non-detected site results). The same tests were also performed at the 75th percentile and 95th percentile of site and background data sets, such that evaluating all of these tests together served to identify any significant shifts in the relative distribution of non-detects compared between the site population and background population.

- Technically, although Gehan's test could be substituted for the Mann Whitney test in all circumstances, the Mann Whitney test is more familiar to scientists and available in software, so the use of the Mann Whitney test has been retained because it is easier for a third party to independently verify the calculations and test results.

- For Case 1 (but also applicable to Cases 2 and 3, as discussed later), a second nonparametric test was selected to compare the upper ranks (i.e., the upper percentiles) of the site data versus background data. This test has been labeled as "upper ranks" to avoid confusion with a separate test for upper tolerance limits (UTL) that also involves quantiles for the nonparametric case. The term "quantile test" is also used for the upper ranks test. This test was computed multiple times, starting with the highest concentration (rank) data points, and then repeating the test after including the next lower concentration sample results, thereby successively expanding the size of the upper rank subsets to include lower percentiles of the combined site and background data. The upper ranks tests were concluded when the highest non-detected result was encountered or when the maximum size subset of site data was found that had at least a probability (P-level) of 0.05 that the upper ranks of this subset of data is significantly greater than background.

- For Case 1 (but also applicable to Cases 2 and 3, as discussed later), if each of the applicable test results (t-test, Mann Whitney, Gehan, and Upper Ranks) were considered not applicable ("NA") due to insufficient sample size or other limitations, then a test of proportions was considered applicable to determine if the percentage of positively detected results was statistically greater in the site data versus the background data. The test of proportions was performed one of two ways, either based upon combinatorial probabilities calculated using Fisher's exact test if there were less than 5 detects in the site data set, less than 5 detects in the background data set, less than 5 non-detects in the site data set, or less than 5 non-detects in the background data set. If there were 5 or more detects and non-detects for each data set, then a normal approximation to the probability of proportions was computed using the z-test. These results were used to decide site is greater than background only if other tests were "NA".

- For Case 1, if a decision was first reached that site concentrations were greater than background based on the tests presented earlier, then the 95 percent upper tolerance limit (95 % UTL) was considered applicable. The UTL test was not used to decide globally that site exceeds background, but rather IF site data exceeded background, then the information presented in the UTL test could be used to evaluate whether individual sample results might represent hot spots. Following previous risk assessment recommendations from EPA Region 3, the UTL was computed in two different ways, using formula presented in EPA, 1992a: In the case where there were less than 8 samples in the background data set, the UTL was calculated assuming a 50 percent coverage of the 95 percent UTL, so that formula included the student's t-value times the standard deviation. In the case where there were 8 or more samples in the background data set, the UTL was then calculated in a more conservative manner assuming 95 percent coverage of the 95 percent UTL, so that the formula included the K-value times the standard deviation. Note that the UTL test has an unacceptable rate of false positives if there are many site samples, and the existence of one or more exceedances in a data set comprised of more than three site samples does not by itself necessarily indicate that site exceeds background.

Case 2: If the W-test rejected the hypothesis of a normal distribution for both site and background, but accepted the hypothesis of a lognormal distribution for both site and background, then only the set of nonparametric background comparison tests were conducted to determine that site exceeded background. The following tests were performed for Case 2:

- Either the Mann Whitney or Gehan's test was performed, as discussed above.

- The upper ranks test was performed, as discussed above.

- The t-test was not performed.

- The test of proportions was performed and considered in making decisions only if the Mann Whitney, Gehan, and upper ranks tests were all not applicable ("NA").

- If a decision was first reached that site concentrations were greater than background based on the tests presented earlier, then the 95 percent upper tolerance limit (95 % UTL) was considered applicable. The UTL test was not used to decide globally that site exceeds background, but rather IF site data exceeded background, then the information presented in the UTL test could be used to evaluate whether individual sample results might represent hot spots.

Case 3: If the W-test rejected both hypothesis of either a normal distribution or lognormal distribution for both site and background, then only nonparametric background comparison tests were conducted. The following tests were performed for Case 3:

- Either the Mann Whitney or Gehan's test was performed, as discussed above.

- The upper ranks test was performed, as discussed above.

- The t-test was not performed.

- The test of proportions was performed and considered in making decisions only if the Mann Whitney, Gehan, and upper ranks tests were all not applicable ("NA").

- If a decision was first reached that site concentrations were greater than background based on the tests presented earlier, then the 95 percent upper tolerance limit (95 % UTL) was considered applicable. The UTL test was not used to decide globally that site exceeds background, but rather IF site data exceeded background, then the information presented in the UTL test could be used to evaluate whether individual sample results might represent hot spots. In this case, the UTL test was based upon the non-parametric 95^{th} quantile and was only possible if there were at least 19 data points in the background data set.

For this project, computer algorithms were employed to automatically perform applicable statistical tests wherever the necessary underlying assumptions are valid. This approach allows the use of any valid test result that identifies that concentrations from one data set are elevated, regardless of the outcome of unrelated statistical tests.

5.3.4 Surface Soil Background Comparison Results

Table 5.5 compares the WOD site-related data to background for surface soil. Surface soil data were demonstrated to be above background for sodium and bis(2-ethylhexyl) phthalate. With sodium, the Mann Whitney test revealed that there was an overall difference in the relative ranks of the site and background populations, which has a probability of occurring only 0.9 percent of the time in statistically equivalent populations. However, because data did not follow a normal or lognormal distribution the means of the two populations could not be directly compared. The upper ranks test essentially corroborated the same findings and indicated all 27 of the sodium sample concentrations in the site data set were greater than any values in the background data set, which has a probability of occurring only 0.07 percent of the time in statistically equivalent populations.

In the case of bis(2-ethylhexyl) phthalate, Gehan's test indicated that there was an overall difference in the relative ranks of the site and background populations, which has a probability of occurring only 0.4 percent of the time in statistically equivalent populations. However, because data did not follow a normal or lognormal distribution the means of the two populations could not be directly compared. From a qualitative standpoint, the frequency of detection was approximately 40 percent for site data versus only 8 percent for background data, with 17 out of 25 WOD sample results greater than sample quantitation limits.

Surface soil background test results were inconclusive for antimony, silver, and most of the organic compounds detected. In most cases, this was due to the majority of samples being nondetected, which reduced the effective size of the data sets that were compared. In the case of silver, several site and background results were qualified as rejected and certain site results were qualified due to blank contamination, which further reduced the number of usable data points.

5.3.5 Subsurface Soil Background Comparison Results

Table 5.6 compares the WOD site-related data to background for subsurface soil. No substances detected in subsurface soil were demonstrated to be above background. Subsurface soil background test results were inconclusive for antimony, cadmium, cyanide, selenium, silver, thallium, and most organic compounds. Generally, this was due to many of the results being nondetected (and in few cases qualified due to blank contamination or rejected), which reduced the effective size of the data sets that were compared.

5.4 NATURE AND OCCURRENCE OF CONTAMINATION

5.4.1 Surface Soil

Results from the background tests, as shown in Table 5.5, indicate that a limited number of contaminants were detected in samples collected from the WOD surface soils at levels exceeding background levels. No metals were identified as exceeding background concentrations. However, tests were inconclusive for antimony and silver. As shown in Table 5-7, antimony was not detected in the background samples but was detected in two WOD site surface soil samples. Antimony was detected at levels near the detection limit in samples 3WFF16-SS13 (0.92 mg/kg) and WOD-SS-106 (0.36 mg/kg). Both of these samples were collected near the northwestern end of the stained soil area (see Figure 5-1).

Silver was detected in 28 of the surface soil and marsh soil samples collected from the site. The maximum concentration 2.3 mg/kg was detected in sample WOD-SS-136. This is a marsh soil sample collected from the western drainage area leaving the WOD site. Similarly, sample WOD-SS-135, a marsh soil sample collected in the northwestern drainage area, was the only other sample with a silver concentration greater than 1 mg/kg (1.6 mg/kg). Figure 5-1 illustrates the positive detections of silver in the WOD site surface soil samples. As can be seen, the remainder of the positive detections are similar to background silver concentrations (0.15 mg/kg to 0.3 mg/kg).

Bis(2-ethylhexyl)phthalate is the only organic compound identified as exceeding background levels. The highest level of bis(2-ethylhexyl)phthalate detected (2,800 ug/kg) was in sample 3WFF16-SS9. This sample was collected during the 2001 RI and was located within the stained soil area. Seventeen of the other 20 surface soil samples collected during the 2001 RI also contained somewhat elevated levels (430 ug/kg to 2,100 ug/kg) of bis(2-ethylhexyl) phthalate. Only 8 of the 39 surface soil samples collected during the Supplemental RI contained bis(2-ethylhexyl) phthalate and the levels were at low estimated concentrations (40J ug/kg to 170J ug/kg). Figure 5-1 illustrates the positive detections for bis(2-ethylhexyl) phthalate in the WOD surface soil samples.

Background tests were inconclusive for most other organic compounds. PCBs were detected at estimated trace levels in samples WOD-SS-135 and -136 (220J ug/kg and 180J ug/kg, respectively). No other PCBs were detected on site. Benzaldehyde, which was not analyzed for in the background samples or in the 2001 RI samples, was detected in 20 Supplemental RI samples at estimated concentrations ranging from 46J ug/kg to 1,500J ug/kg. The low levels and widespread occurrence of benzaldehyde does not appear to be indicative of waste disposal activities at the WOD.

Other organic compounds were infrequently detected in WOD surface soils, and few samples contained SVOCs at concentrations greater than maximum background concentrations. Benzo(a)pyrene was detected in nine WOD samples at concentrations ranging from an estimated 47J ug/kg to 1,300 ug/kg. The maximum level was detected in sample 3WFF16-SS10. This sample was collected during the 2001 RI from the stained soil area. Other benzo(a)pyrene detections greater than the maximum background concentration (410J ug/kg) were reported in samples 3WFF16-SS9 and WOD-SS-123 (910 ug/kg and 550J ug/kg, respectively). Sample 3WFF16-SS9 was collected from the western edge of the stained soil and sample WOD-SS-123 was collected immediately south of this area, toward the end of the active runway. Figure 5-1 provides the location and concentrations of benzo(a)pyrene detections in the WOD surface soil samples. A similar pattern, as shown on Figure 5-1, is seen for benz(g,h,i)perylene concentrations.

VOCs were detected at trace levels in only a few WOD surface soil samples. The 2001 RI identified benzene, toluene, 1,2-DCE, and ethylbenzene as the VOC groundwater contaminants at the WOD. Benzene and 1,2-DCE were not detected in surface soil samples, and toluene and ethylbenzene were detected only at trace levels (2J ug/kg) in two soil samples.

5.4.2 Subsurface Soil

Background tests for subsurface soils, as shown in Table 5.6, indicate that no metals were identified as exceeding background levels. Tests were inconclusive of antimony, cadmium, cyanide, selenium, silver, and thallium. The maximum site concentrations for antimony (18.3 mg/kg), cadmium (23.4 mg/kg), silver (389 mg/kg) and thallium (3.5 mg/kg) were detected in sample WOD-SU-111-0507 (see Figure 5-2). This sample, as described in Section 4.2.2.2, was collected from a layer of fill material encountered in boring WOD-SB111. Antimony was not detected in any other subsurface sample. Cadmium was detected in only three other WOD subsurface soil samples, and the concentrations in these samples were within the background range of 0.19 mg/kg to 0.57 mg/kg. Figure 5-2 provides the locations and concentrations of cadmium detections in WOD subsurface soil samples. Similarly, silver was detected seven other subsurface soil samples at levels approximating background levels. The only other on-site detection of thallium (0.18 mg/kg) is less than background levels (0.22 mg/kg to 0.53 mg/kg).

The background tests were inconclusive for cyanide and selenium due to the low frequency and level of detections in both background and site subsurface soil samples. Cyanide was not analyzed for during the Supplemental RI but was detected in one 2001 RI sample at 0.59 mg/kg. Selenium was detected in only two WOD subsurface soil samples at concentrations of 0.34 mg/kg and 0.35 mg/kg. These detections are within the range of selenium concentrations, 0.23 mg/kg to 0.89 mg/kg, detected in background subsurface soils.

Background tests were inconclusive for all organic compounds except bis(2-ethylhexyl)phthalate. The tests indicate that site subsurface detections (37J ug/kg to 190J ug/kg) are similar to the levels found in background subsurface soils (37J ug/kg to 110J ug/kg). As shown in Table 5-8, most organics were infrequently detected in the WOD subsurface samples. The maximum concentration of organics, and most of the positive detections, were in samples collected in close proximity to the stained soil area (see Figure 5-2). This contaminant pattern is consistent with the observations made during the soil boring and sampling phase of the Supplemental RI. Evidence of contamination in this area was noted during field activities in the form of elevated PID readings, fuel-like odors, and the presence of a petroleum sheen or product layer at the water table.

5.4.3 Groundwater

As can be seen in Table 5.9, the maximum concentrations of potential groundwater contaminants were identified, with few exceptions, in monitoring wells WFF15-GW7 and WFF16-GW2S/D. In addition to the highest levels of contamination, organic contaminants were almost exclusively detected only in these two wells.

Arsenic was detected (21.4 ug/L) only in a sample collected from monitoring well WFF16-GW2D. The filtered groundwater sample collected from this well, WOD-WFF16-GW2DF, also contained arsenic at 19.5 ug/L. The maximum barium concentration, 117 ug/L, was detected in the shallow monitoring at this same location (WFF16-GW2S). Barium was detected site wide and in site-specific background wells. Only one site-specific background well exists at the WOD (WFF15-MW3R), and the level of barium detected in a sample from that well was less than all site detections. However, as shown in Table 4.5, base-wide barium levels appear to be similar to the range detected in the WOD monitoring well samples.

Chromium was detected in three WOD monitoring wells (WFF16GW1 and -GW3, and MW4) at levels ranging from 6.1 ug/L to 147 ug/L. The locations and concentrations of chromium detections in monitoring well samples are shown on Figure 5-3. As shown in Table 5.4, chromium was also detected (43.5 ug/L) in the filtered sample collected from monitoring well WFF16-GW1 but not in the other two wells. Monitoring wells WFF16GW1 and -GW3 were not developed during the Supplemental RI due to the lack of water, see Section 4.4.1. In addition, samples from MW4 were reported to be brown colored and the turbidity measurements in this well remained high after purging. Lead was also detected (5.1 ug/L) in the unfiltered but not the filtered sample from this well. The only other lead detection was in the samples collected from monitoring well WFF15-GW7 (68.6 ug/L total lead and 54.7 ug/L dissolved lead). Iron and manganese levels were high in both the unfiltered and filtered samples from this well.

Iron and manganese levels appear to be elevated in most wells when compared to the site-specific upgradient well (WFF15-MW3R). However, the WOD wells are shallow wells and most remained slightly turbid even after development and purging. In addition, the levels detected at the WOD (iron from 50.6 ug/L to 49,900 ug/L; manganese from 14 ug/L to 641 ug/L) are similar in range to the base wide data (iron from 452 ug/L to 50,000 ug/L; manganese from 4.5 ug/L to 3,110 ug/L) for other monitoring wells located at the facility, see Table 4.5.

Organic contamination was almost exclusively detected in a sample collected from monitoring well WFF-GW7. The levels of organic contamination detected in Supplemental RI groundwater samples and the location of the samples are shown on Figure 5-3. Poly aromatic hydrocarbons (PAHs) and VOCs were detected at the highest occurrence and concentrations in the sample collected from well WFF15-GW7. This well is located in the center of the stained area identified as the suspected source area during the 2001 RI. Based on the data from the other WOD monitoring wells, it appears that the contamination is generally limited to this well, with low levels identified in downgradient monitoring wells WFF16-GW2D and WFF15-GW1 and -GW2. This can be illustrated by examining the total benzene, ethylbenzene, and xylene (BTEX) concentrations found in WOD monitoring wells. BTEX was detected at 740 ug/L in WFF15-GW7, 16ug/L in WFF16-GW2D, 2 ug/L in WFF15-GW2, and was not detected in WFF15-GW1. Additionally, no BTEX compounds were detected in a sample collected from monitoring well WFF16-GW5, located northwest (downgradient). No BTEX compounds were detected in the shallow well, WFF15-GW2S, located adjacent to WFF15-GW2D. Trace levels of Cis-1,2-DCE (1 ug/L) were detected in this shallow well. Similar levels were detected in the deep well, WFF16-GW2D (2 ug/L), WFF15-GW7 (1 ug/L), and WFF15-GW1 (3 ug/L).

No contaminant plume delineation, or isoconcentration, mapping has been attempted using the Supplemental RI data because the results indicate that significant contamination is limited to the small area bounded by monitoring wells WFF15-GW7 and WFF16-GW2D. This is similar to the findings presented in the 2001 RI (Versar, Inc., 2001a). As presented in Section 3, the RI groundwater data set consisted of partial rounds of monitoring samples collected over a 3-year period. Three samples were collected from WFF15-GW7 and two samples were collected from WFF16-GW2S/D, WFF16-GW5 and WFF15-GW1 over the 3-year period from April 1997 through February 2000. BTEX compounds were detected only in the samples collected from WFF15-GW7 and WFF16-GW2D. Total BTEX levels ranged from 653 ug/L to 2,780 ug/L in WFF15-GW7 and from 63 ug/L to 73 ug/L in WFF16-GW2D. BTEX compounds were not detected in any of the downgradient well samples collected during this period.

5.5 REFINED CONCEPTUAL SITE MODEL

The additional hydrogeological and chemical data obtained during the Supplemental RI were used to revise the CSM as presented in this section. The revised CSM was derived through the integration of the updated hydrogeological interpretation of groundwater flow (discussed in Section 4) with the nature and extent of contamination based on results from the Supplemental RI sampling and select previous data.

The site is underlain by the Columbia Group and the Yorktown Formation, which comprise the two aquifers beneath the WOD. The Columbia aquifer is the aquifer of concern because, although no borings at the WOD are sufficiently deep to penetrate the underlying Yorktown Formation, the regional geology and the site investigations performed elsewhere on the MB (including the adjacent FFTA) indicate that the underlying Yorktown aquifer is hydraulically isolated from the Columbia by a confining clay unit or aquitard. The Columbia aquifer extends from the land surface to the top of the Yorktown aquitard, or to an estimated subsurface depth of approximately 50 feet.

The hydrogeologic conclusions and the interpretation of the revised CSM generally agree with the conclusions presented in the 2001 RI (Versar, Inc., 2001). The Columbia Group at the site consists chiefly of fine- to medium-grained sands, with lesser amounts of silt and clay. A sequence of finer-grained sediments was encountered at an elevation near sea level in the majority of borings drilled during both the 2001 RI and this Supplemental RI (see Appendices D and E for the boring logs). This layer varied in lithology from a clayey sand to a silty clay to clay, with a typical thickness ranging between one to two feet. A similar fine-grained layer (referred to as the Sea Level Clay, or SLC) has also been encountered near an elevation of sea level at the adjacent FFTA Site (TtNUS, 2003a), suggesting this unit may have at least a semi-regional extent. However, at the WOD this SLC was significantly absent from the boring for monitoring well WFF15-GW7 (which was drilled in the source area), although it was detected in the neighboring borings.

Groundwater at the WOD has been interpreted to flow in directions ranging through an arc of approximately 180 degrees, or from nearly due west, through northward, to nearly due east. These interpreted flow directions are consistent with the flow directions defined during previous investigations, and are also consistent with the directions that are predicted from the surface topography of the WOD, which is located on a small peninsula that extends northward from the end of Runway 17-35 towards Little Mosquito Creek and its associated lowlands and wetlands. The hydrogeologic cross-section (see Figure 4-10) indicates that the vertical hydraulic gradient across the site is variable and ranges from a downward orientation within the areas of higher elevation (recharge zone), to a horizontal to possibly upward orientation within the lowland areas at the base of the peninsula (discharge zone).

Contamination at the WOD exists in both the soil and groundwater medium, but the extent of contamination is generally localized and concentrated in two geographic areas. A localized zone of fill material was identified in the west-central portion of the site, at boring locations SB110 and SB111 (see Figure 4-5). Samples from the fill material (especially from SB111, see Figure 5-2) contained elevated concentrations of metals and some organic compounds, primarily PAHs and BTEX components. The limited presence to absence of groundwater contamination immediately downgradient of the area of fill at WFF16-GW3, -GW4, and -GW5 (see Figure 5-3) indicates that this fill material is not significantly impacting the quality of the local groundwater.

The other area of localized contamination exists within an area of "stained" surface soil and stressed vegetation (as noted during the 2001 RI) located in the vicinity of monitoring well WFF15-GW7. Surface soil, subsurface soil, and groundwater within this area contained elevated concentrations of some metals and many organic compounds, primarily PAHs and BTEX compounds. The vertical distributions of the organic compounds within the soil (as determined by both the analytical chemistry and the PID readings measured during the Supplemental RI) are somewhat atypical. Relatively high concentrations of contamination were encountered just above the water table, relatively low levels were encountered at the surface, and the intervening soil horizons were relatively free of contamination. Conceptually, if the contamination were introduced at or near the surface, then the highest levels of soil contamination (especially for the less mobile PAHs) would be expected near the surface or the shallow subsurface horizon. Even if the compounds had migrated with infiltrating precipitation to the water table over time, significant concentrations of residual contamination would be expected in the intervening subsurface soil. The presence of highly contaminated soil at the water table and the lack of contamination in the overlying soil leads to the possibility that the compounds were either introduced directly into the deeper horizon through excavation and disposal or migrated on the surface of the water table from an upgradient source and were deposited within the soils as a smear zone created by fluctuations in the water table. The lack of shallow contamination noted in the immediately upgradient soil boring SB-102, and the lack of any contamination in the adjacent borings SB-121, -122, and -123 (see Figure 5-2) preclude the existence of a significant upgradient contaminant source. Under either hypothesis, there does not appear to be a connection between the deeper contamination and the lower levels of soil contamination observed on the present surface soils.

Groundwater contamination at the WOD is very localized and is centered in the vicinity of monitoring well WFF15-GW7. This well was constructed with a 15-foot screen that extends across the water table to a depth below the expected depth interval for the SLC, which was not noted at this location. The current and historical sampling of this well has indicated that significant groundwater contamination exists at the water table. In addition, a floating layer of petroleum product (0.4 foot thick) was measured in this well at the start of the current field activities. The presence of a free-phase product and the high concentrations of

contamination detected in the dissolved phase within the groundwater indicate that the contaminant source occurs at or near the water table in the immediate vicinity of WFF15-GW7.

The data obtained from other soil borings in the vicinity of WFF15-GW7 indicate that the source is relatively small and discrete, because it is bounded in both the adjacent upgradient and sidegradient directions by borings from which neither contaminated soils nor elevated PID readings were detected near the water table. Groundwater analytical results also indicate the localized presence of contamination. Total groundwater BTEX concentrations viewed with the hydrogeologic cross-section constructed for the WOD (see Figure 5-4) indicate that the groundwater plume emanating from this source area migrates downward within the aquifer but attenuates rapidly in the downgradient direction. Very low concentrations of a few VOCs and no SVOCs were detected in the downgradient deep well (WFF16-GW2D), and no organic compounds at all were detected in the downgradient shallow well (WFF16-GW2S). The presence of the hydrocarbon plume in WFF16-GW2D (albeit at low levels) at a depth below the SLC, and the absence of the plume above the SLC in WFF16-GW2S, appear to confirm the observation that the SLC is not present in the immediate vicinity of the source area, which allows the plume to migrate to a depth below the SLC. If an effective aquitard existed at the WOD, the plume would be expected to exist above, but most likely not below, the SLC.

The limited geographic extent of the groundwater plume is interpreted to be a result of several factors. The first factor is the mobility of the contaminants. Many of the contaminants at the source area are SVOCs, which are relatively immobile in groundwater, and are not expected to migrate significant distances from the source area. However, the abundant VOCs detected at the source area are relatively mobile in groundwater and could reasonably be expected to be present in the downgradient well (WFF16-GW2S/D) given the elapsed time since the contaminants were introduced at the source. Therefore, the mobility of the contaminants alone cannot explain the limited areal extent of the plume.

The second factor believed to be attenuating the plume is the biodegradation of the organic contaminants. Various MNA parameters collected during the Supplemental RI (including dissolved oxygen, ORP, and methane) support the interpretation that active biodegradation is occurring within the plume. Significant observations noted from the evaluation of the MNA parameters include the following:

- The groundwater plume corresponds with a zone of very low (nearly depleted) dissolved oxygen levels in wells WFF15-GW7 and WFF16-GW2D, suggesting that significant aerobic biodegradation has occurred in this area. Although low dissolved oxygen concentrations were also measured in several downgradient wells (including WFF15-GW1 and WFF16-GW7), it is believed that the low oxygen levels at these locations are reflecting the high organic content of the marsh and palustrine environments of the lowlands surrounding this site. The very low dissolved oxygen concentrations found at the source

area are markedly dissimilar from the surrounding, more oxygenated waters that were sampled from similar higher site elevations.

- The groundwater plume corresponds with a groundwater zone characterized by very weakly oxidizing (ORP of 3) to strongly reducing (ORP of -51) conditions. Reducing conditions were also measured in several downgradient wells located in the site lowlands, but these readings are believed to reflect the natural groundwater conditions at these locations. The weakly oxidizing to reducing conditions measured at the source area are markedly dissimilar from the surrounding, strongly oxidizing conditions noted in the adjacent wells from the higher site elevations.
- The groundwater plume corresponds with a zone of elevated methane concentrations, suggestive of a zone of methanogenic biodegradation. Elevated methane concentrations were also noted in several downgradient wells located in the site lowlands, but these readings are believed to reflect the natural groundwater conditions at these locations. The elevated methane concentrations detected at the source area are markedly higher than those detected in the adjacent wells from the higher site elevations.

The third factor that is believed to be inhibiting the migration of the plume is the hydraulic conductivity of the aquifer, although a relative lack of data (and the conflicting nature of the data that do exist) make this connection less certain. Aquifer tests conducted during the 2001 RI (Versar, Inc., 2001a) indicate that the hydraulic conductivity of the Columbia Aquifer at the WOD is in the magnitude of 5E-4 cm/sec, which is on the low end of the range of values obtained across the MB, but is sufficiently high to permit the migration of the plume to the groundwater discharge points surrounding the WOD. However, the two wells tested in conjunction with the WOD 2001 RI were WFF15-GW1 and WFF15-GW2, which are located west of the peninsula in the lowlands adjacent to the unnamed tributary to Little Mosquito Creek. It is possible that the hydraulic conductivity of the aquifer within the higher elevations of the peninsula (in the vicinity of the plume) are lower, although the lithologies noted during the drilling of the soil borings are consistent with those found elsewhere (predominantly sands), and are not suggestive of lower-conductivity material. However, the aquifer properties noted during the recent sampling event are not consistent with the properties that would be expected from the observed lithologies. Several of the wells exhibited very slow recharge rates that are indicative of a bcally low transmissivity, even though sands were the dominant aquifer material. It is possible that the multiple episodes of excavation and filling have created a heterogeneous aquifer whose properties may vary within short lateral distances. For a given hydraulic gradient and effective porosity, a lower hydraulic conductivity will result in a lower groundwater velocity, which will also allow the MNA processes to impact the groundwater for a greater period of time per unit distance traveled.

A comparison of the contaminant concentrations detected during the Supplemental RI with those detected historically at this site (Versar, Inc., 2001a) indicates that overall, the most recent concentrations are within

the same order of magnitude. The presence of weathered product indicates a significant volume of source material still remains, but it appears that the various processes of biodegradation are effectively attenuating or restricting the lateral extent of the dissolved-phase plume.

6.0 FATE AND TRANSPORT

Several aspects of contaminant fate and transport relevant to the WOD are discussed in this section. The ultimate fate of chemicals in the environment is determined by several physical, chemical, and/or biologically related factors. The role that physical properties such as specific gravity, solubility, and vapor pressure play in determining the processes that take place for a particular chemical (or class of chemicals) is often variable and can vary considerably from location to location, even within the same contaminant regime. Chemical and biological transformational processes can also be significantly affected by localized conditions.

Various chemical and physical properties affecting contaminant migration and the media (e.g., geologic influences) that affect their migration are discussed in Section 6.1. No distinctions as to the locations or concentrations of the chemicals detected at or near the site are made in this section. Section 6.2 presents a discussion of contaminant persistence. Potential contaminant migration routes are identified and discussed in Section 6.3. Section 6.4 summarizes fate and transport mechanisms as they pertain to the WOD.

6.1 PHYSICAL AND CHEMICAL TRANSPORT PROPERTIES

This section provides a qualitative discussion of potential migration of the contaminants found at the WOD. The physical and chemical properties of the chemicals found in the study area, where available, are presented in Table 6.1. Partitioning coefficient ranges for detected metals are presented in Table 6.2. These parameters may be used to assess the behavior of a chemical in the environment.

Empirically determined literature values of water solubility, octanol/water partition coefficient (K_{ow}), organic carbon partition coefficient (K_{oc}), soil-water partitioning coefficient, vapor pressure, Henry's Law constant, and specific gravity are presented for organic chemicals, as available. Many of these parameters are not applicable to inorganic chemicals. For inorganics, specific gravity has been presented along with qualitative descriptions of important environmental fate properties. Calculated values, which were obtained using approximation methods, are presented when literature values are unavailable. A discussion of the environmental significance of each of these parameters follows.

6.1.1 Solubility

The rate at which a chemical is leached from a waste deposit by infiltrating precipitation is proportional to its water solubility. Chemicals that are more soluble are expected to enter water much more readily and rapidly than less soluble chemicals. The VOCs (ketones, monocyclic aromatics, and halogenated

aliphatics) are usually several orders of magnitude more water soluble than PAHs and PCBs. At the WOD metals were detected in both soil and groundwater but metals that appeared to be elevated in soils and groundwater did not appear to be collocated, see Figures 5-2 and 5-3. Groundwater samples were collected from shallow monitoring wells that exhibited low yields and relatively high turbidity. Metals detected in these samples may be part of the sediment in the sample instead of the aqueous fraction. This is a manifestation of their limited water solubility and tendency to adsorb onto soil/sediment particles. Filtered groundwater samples were collected to measure the dissolved metals, (see Table 5.4), and although several metals were detected at elevated levels, no single metal was observed in multiple wells and no contaminant pattern is apparent.

The solubility of inorganics is strongly influenced by their valence states and forms (e.g., hydroxides, oxides, carbonates). The solubility is also dependent on pH, Eh, and the presence of other ionic species in solution (the Debye-Huckel theory). Solubility factors reported in the literature vary with the type of complex formed.

In the case of manganese (Mn), which is a common metal and occurs in several natural mineral forms, the predominant species is Mn^{+2} as the solvated (or hydrated) ion at normal pH and ORP values. This ionic state is typically associated with metamorphic rocks. Other manganese compounds, such as permanganate (Mn^{+7}) or manganese oxide (MnO_4), are either too easily reduced to be present in ambient waters or have low solubilities.

6.1.2 Octanol-Water Partitioning Coefficient (K_{ow})

The K_{ow} is a measure of the equilibrium partitioning of a chemical between octanol and water. The K_{ow} is also used to estimate bioconcentration factors (BCFs) in aquatic organisms. A linear relationship between the K_{ow} and the uptake of chemicals by fatty tissues of animal and human receptors has been determined (Lyman et al., 1990). Polycyclic aromatic hydrocarbons (PAHs), phthalate esters, and PCBs are several orders of magnitude more likely to partition to fatty tissues than the more water-soluble VOCs. The K_{ow} is also useful in characterizing the sorption of compounds by organic soils when experimental values are not available. Relatively simple organic chemical molecules have low K_{ow} values.

6.1.3 Organic Carbon Partitioning Coefficient

The soil/sediment partition (organic carbon partition) coefficient (K_{oc}) is related to water solubility and K_{ow}. K_{oc} indicates the tendency of a chemical to bind to soil particles containing organic carbon. Chemicals with high K_{oc} values generally have low water solubilities and vice versa. Chemicals such as semivolatiles, PAHs, and PCBs are relatively immobile in the subsurface environment and are

preferentially bound to the soil phase. These compounds are not subject to groundwater transport to the same extent as compounds with high water solubilities.

K_{oc} may be used to infer the relative rates at which the more mobile chemicals are transported in groundwater. Complex organic chemicals are relatively immobile and are preferentially bound to the soil phase. These compounds are not subject to rapid groundwater transport.

6.1.4 Distribution Coefficient

The soil-water partitioning (distribution) coefficient (K_d) is a measure of the equilibrium distribution of a chemical or ion in soil/water systems. The distribution of organic chemicals is a function of both the K_{oc} and the fractional organic carbon content of the soil (FOC) for the solid and aqueous matrices.

6.1.5 Vapor Pressure

Vapor pressure provides an indication of the rate at which a chemical volatilizes from both soil and water. It is of primary significance in instances where environmental interfaces such as surface soil/air, sediment/air, and surface water/air are important, rather than in evaluation of groundwater and subsurface soils. Vapor pressures for VOCs are generally many times higher than vapor pressures for other organic compounds (e.g., semivolatiles, pesticides, and PCBs). Chemicals with higher vapor pressures are expected to enter the atmosphere much more readily than chemicals with lower vapor pressures. Volatilization depends upon such factors as total exposed surface area, contaminant concentrations, and amount of organic matter in the soil.

6.1.6 Henry's Law Constant

Both vapor pressure and water solubility are of use in determining volatilization rates from surface water bodies and groundwater. The Henry's Law constant (HLC) is the equilibrium vapor pressure of a chemical above a solution divided by its concentration in the solution (for dilute systems). The HLC may also be used to calculate the equilibrium contaminant concentrations in the vapor versus liquid phases for dilute solutions commonly encountered in environmental settings. The HLC is also useful for mass transfer applications for air-stripping column design.

In general, chemicals with a HLC less than E-5 atm-m^3/mole should volatilize very little and be present only in minute amounts in the atmosphere or in soil gas. Chemicals with a HCL greater than 5E-3 atm-m^3/mole, such as halogenated aliphatics and monocyclic aromatics, can undergo significant volatilization and diffusion in soil gas. HLCs (generally measured under laboratory conditions) for some of the PAHs,

semivolatiles, pesticides, and PCBs indicate that these chemicals would tend to volatilize to a limited extent. However, in the environment, these chemicals are strongly sorbed to soil/sediment particles that would keep them from volatilizing into the atmosphere.

6.1.7 Specific Gravity

Specific gravity is the ratio of the weight of a given volume of pure chemical at a specified temperature to the weight of the same volume of water at a given temperature. Its primary use is to determine whether pure compounds or very high concentrations of a contaminant will float or sink in water.

Chemicals with a specific gravity less than 1.0 will tend to float, whereas chemicals with a value greater than 1.0 will tend to sink. Of the commonly detected chemicals at the WOD site, the ketones and monocyclic aromatics have a specific gravity less than 1. Halogenated aliphatics, PAHs, PCBs, phthalate and esters have specific gravity great than 1.

6.2 CONTAMINANT PERSISTENCE

The persistence of the classes of organic and inorganic contaminants found in the study area is discussed in this section. Several transformation processes are believed to affect the persistence of organic chemicals in the environment. The primary processes affecting contaminant fate for organic compounds include microbial, photolytic, chemical degradation (hydrolysis, biodegradation), and oxidation/reduction reactions. For inorganics, persistence may be influenced by soil characteristics such as cation exchange capacity (CEC), TOC, pH, and soil porosity. General classes of the detected chemicals are addressed because the fate of chemicals in the environment is usually similar for chemicals within a particular chemical family.

The following general classes of contaminants are discussed; all of these classes have been detected in samples from the site:

- Monocyclic aromatics
- Halogenated aliphatics
- PAHs
- Phthalate Esters
- Metals
- PCBs

Table 6.3 summarizes those contaminants that were grouped into classes for evaluating persistence. These contaminants include inorganics and organic compounds that were detected at the site (for further details, see Section 5.0.

In general, photolytic degradation is not considered a relevant degradation mechanism for monocyclic aromatic compounds such as toluene (EPA, 1982). Furthermore, even photodegradable compounds must be present in media exposed to sunlight for such degradation to occur (such as surface soil). Because only a few VOCs were detected in surface soil at the WOD, photolytic degradation is not expected.

Generally, organic molecules are subject to several chemical reactions under environmental conditions. Such reaction mechanisms include acid/base reaction, addition, elimination, and hydrolysis. However, monocyclic aromatics are not particularly amenable to the majority of these degradation mechanisms. Hydrolysis is considered negligible for halogenated hydrocarbons. Hydrolysis reactions can occur under acidic, basic, or neutral conditions.

Another possible type of degradation is the dechlorination of tetrachloroethene and trichloroethene to 1,2-DCE, 1,1-DCE, and ultimately vinyl chloride (Cline and Viste, 1984). A similar type of reaction has been reported for 1,1,1-TCA in degradation to 1,2-DCA, 1,1-DCA, and chloroethane. Since only trace levels of some of these compounds (tetrachloroethene, and 1,2-DCE) were detected in the groundwater samples collected at the site, these reactions do not appear to be a major factor in evaluating contaminant persistence/degradation processes at the site under current conditions.

Bacterial degradation is a potential environmental fate mechanism. A compound for which biodegradation is potentially considerable is toluene (EPA, 1982; Verschueren, 1983). This degradation is primarily biological, and anaerobic conditions are typically required for these reactions to occur.

6.2.1 Monocyclic Aromatics

Monocyclic aromatics, such as benzene, toluene, 1,2,4-trimethylbenzene, and xylenes (BTEX compounds), are not considered to be persistent environmental contaminants in comparison to pesticides, PCBs, phthalate esters, and metals. Such compounds are subject to degradation via the action of both soil and aquatic microorganisms. The biodegradation of these compounds in the soil matrix is dependent on several factors including the abundance of microflora, macronutrient availability, soil reaction (pH), temperature, and oxygen. BTEX compounds were detected at the highest levels in subsurface soil and groundwater samples collected from one small discrete area of the site, see Figures 5-2 and 5-3. Other soil and groundwater samples collected surrounding this area did not contain significant levels of BTEX compounds, indicating that the

contaminants may be undergoing some form of degradation or are relatively immobile due to other physical factors.

Although BTEX compounds are amenable to microbial degradation, the rate of degradation cannot be predicted without information on the availability of nutrients and the type of bacteria present. If these contaminants discharge to nearby streams, volatilization and biodegradation may occur relatively rapidly. For example, a reported first-order degradation rate constant for benzene is 0.11 day^{-1} in aquatic systems (Lyman et al., 1990). This corresponds to an aquatic half-life of approximately 6 days.

Additional degradation processes such as hydrolysis and photolysis are considered insignificant fate mechanisms for monocyclic aromatics (EPA, 1982). However, some monocyclic aromatic compounds such as benzene and toluene have been shown to undergo clay-, mineral-, and soil-catalyzed oxidation (Dragun, 1988).

6.2.2 Halogenated Aliphatics

Halogenated aliphatics, such as 1,2-DCE and 1,1,-TCA, are subject to reductive dehalogenation via the action of anaerobic bacteria. Research indicates that degradation of highly chlorinated ethanes is a relatively slow process. It does not appear that appreciable degradation of halogenated aliphatics occurs in aerobic aquatic systems (EPA, 1982) or unsaturated soils (Lyman et al., 1990). Photolysis is not considered to be a relevant degradation mechanism for this class of compounds (EPA, 1982). Limited hydrolysis of saturated aliphatics (i.e., alkanes) may occur, but it does not appear to be a significant degradation mechanism for unsaturated species (i.e., alkenes) (EPA, 1982).

Transport of halogenated aliphatics from groundwater to surface water can occur. When discharged to surface water, these compounds tend to volatilize rapidly due to their high solubility rather than bind with sediments.

6.2.3 PAHs

PAHs are common constituents of oil and grease and may be present at the site due to reported disposal of these types of materials at the site. Data from landspreading applications have indicated that PAHs are amenable to microbial degradation. Studies have demonstrated that PAHs are much more amenable to degradation in soil matrices than in aquatic environments (EPA, 1979). Under existing site conditions, the rate of microbial degradation cannot be predicted without knowledge of microbial populations. PAHs do not contain functional groups that are susceptible to hydrolytic actions, and hydrolysis is considered to

be an insignificant degradation mechanism. Photolysis may be a major degradation mechanism in aquatic environments but is probably insignificant in solid materials.

6.2.4 Phthalate Esters

Phthalate esters are considered to be relatively persistent environmental contaminants. Although numerous studies have demonstrated that phthalate esters undergo biodegradation, it appears that this is a very slow process in both soil and surface water. Certain microorganisms have been shown to excrete products that increase the solubility of phthalate esters and enhance their biodegradation (Gibbons and Alexander, 1989). Biodegradation of bis(2-ethylhexyl) phthalate and other phthalate esters is an important fate mechanism, as is bioaccumulation. Hydrolysis of phthalate esters is very slow, with calculated half-lives of 3 years (dimethyl phthalate) to 2,000 years [bis(2-ethylhexyl) phthalate] (EPA, 1979). Similarly, photolysis is considered to be an insignificant degradation mechanism for phthalate esters (EPA, 1982).

6.2.5 PCBs

PCBs are considered to be very persistent organic chemicals. Biodegradation is the only process known to transform PCBs under environmental conditions, and only the lighter compounds are measurably biodegraded (EPA, 1979). Although some microorganisms may biodegrade PCBs, such fungi may not exist in local soil. There is experimental evidence to suggest that heavier PCBs (five or more chlorines per molecule) can undergo photolytic degradation, but there are no data to suggest that this process operates under environmental conditions (EPA, 1979). Base-, acid-, and neutral-promoted hydrolysis are considered inconsequential degradation mechanisms for PCBs (EPA, 1982).

6.2.6 Metals

The transport and fate of metals in the environment are primarily controlled by sorption to soil/sediment material. Some key parameters affecting mobility of metals in groundwater are listed in Table 6.2. The metal-organic relationships, both in soil and water, increase in importance as the organic carbon content increases. Some metals (e.g., arsenic) are extremely soluble and mobile in the environment. Many other metals, such as zinc and copper, have an affinity for hydrous iron and manganese oxides, as well as for organic materials, and are therefore preferentially adsorbed to soil. The mobility of most metals increases as the soil pH decreases. Table 6-3 presents the metals of concern for the various media.

Inorganic contaminants with a positive charge (cations) will be retarded by clays exhibiting a net negative charge, and anions such as chromium (as chromate) and arsenic (as arsenate) will be more mobile in such

an environment. The mobility of metals in soil is also influenced by the metals' ability to form insoluble precipitates, bind to metal oxides in the soil, or remain insoluble.

6.2.7 Summary

A summary of the fate processes for each of the critical compounds found in the study area is shown in Table 6.4. This table helps identify which compounds would be the most persistent in the environment. Metals and PAHs are the most persistent compounds found that may be attributable to the site. The metals detected do not undergo volatilization, biodegradation, or photolysis as fate processes.

6.3 CONTAMINANT MIGRATION FACTORS AND ROUTES

In general, several potential migration routes exist in areas contaminated with hazardous materials. For the WOD, such migration routes include, but are not limited to,

- Atmospheric migration via particulate or volatile vaporization or fugitive dust emissions from the site.
- Overland migration of dissolved or adsorbed contaminants.
- Leaching from the site soils to underlying groundwater.
- Groundwater transport to surface water.

Contaminants migrating from the site may be transported through one or more environmental media. The physical and chemical characteristics of those media affect the interactions between the contaminant and the media and determine how, or if, a given contaminant migrates in a particular medium. The environmental media identified in Section 5.0 as being potentially contaminated by site activities include surface and subsurface soil and groundwater.

The environmental factors that have the greatest influence over the mobility of contaminants in the various media include

- Hydraulic conductivity
- Cation exchange capacity (CEC)
- Organic carbon content
- Hydraulic gradient
- pH
- oxidation/reduction potential (ORP)
- Groundwater/surface-water interactions
- Dissolved oxygen

- Temperature
- Specific conductance

6.3.1 Atmospheric Migration

The first possible route for contaminant migration from the site through the air is the volatilization of compounds from surface water or surface and subsurface soil (especially if exposed through excavation or erosion). The results of the sampling and analysis indicate that this is not happening on a significant scale on a site-wide basis. VOCs were infrequently detected and at low (near quantitation limit) levels in surface soils, see Table 5.7 and Figure 5-1.

The second possible route for contaminant migration from the site through the air is the generation of contaminant dusts from surface soil. This would be potentially important for metals and possibly for organic chemicals strongly sorbed to soil particles. Subsurface soil fugitive dust exposure would depend upon the subsurface material being exposed in some way. Potential future risks associated with estimated dust emissions via inhalation of suspended particles from soils are assessed in Section 7.0.

6.3.2 Soil Migration

Surface soils may be transported by water erosion during rainstorms and other precipitation events. Along with overland flow of contaminants, wind erosion may be responsible for the movement of fine-grained particles on site. The soil properties that affect permeability or potential reaction with the dissolved components in the water include not only permeability and hydraulic conductivity but also CEC, mineral content of the soil, and the soil organic carbon content. Overburden materials present at the site are predominantly silty or loamy sands.

Samples from the WOD indicate that substantial levels of organic contamination of surface soils are not wide-spread at the site. As depicted in Figure 5-1, low levels of PAHs were primarily detected within a small surface stain that appeared to be highly weathered petroleum product. Most metals are present but at levels similar to background levels. However, silver was detected at levels that appear to be above background concentrations, especially in surface soil samples collected at the base of the bank along the unnamed tributary to Little Mosquito Creek and in a subsurface sample collected from fill material encountered in this area of the site, see Figures 5-1 and 5-2. The migration of contaminants through the soil partly depends on the capacity for fluid movement through the subsurface. Hydraulic conductivity is a measure of the rate at which water flows through the soil or rock under a change in pressure, or head. Soils generally classified as loamy sands are considered well-drained.

The fate of metals in surface soils may be largely controlled by weathering and the absorptive capacity of the soil. Absorption will control the amount of metals that can be retained within the soil. The capacity of soil to immobilize ionic inorganics can be reasonably predicted based on a correlation equation involving pH and CEC. CEC is a measure of the capacity of the soil to adsorb positively charged ions such as metals onto the negatively charged surface of the soil particles. Although soils were not analyzed for CEC during the WOD investigations, it is likely that they would exhibit high CEC values and would have a generally high capacity to adsorb metals.

Generally, a soil composed of clay or a clay mixture attenuates (slows) dissolved ions during transport more than does a clay-free soil. Conversely, a soil composed of well-sorted (i.e., clay-free) quartz sand and gravel typically has little or no capacity to adsorb or exchange an ionic substance (e.g., metals or radionuclides) migrating through it. Therefore, soils present at the site are not expected to significantly attenuate contaminants via this mechanism as they consist of well-drained loamy sands. The soils surrounding the site, marsh soils, were noted to be of a higher organic and silt content and would likely adsorb or attenuate metals.

The amount of organic carbon present in a soil also increases the relative amount of an organic compound that will be attenuated by that soil. In effect, the organic carbon content increases the effective distribution coefficient (K_d) of chemical species in solution. The greater the organic carbon content in the soil, the more likely it is that organic compounds migrating through the soil will become adsorbed onto the soil and the less likely they will migrate long distances through it. If appropriate pathways exist, contaminants retained on soils or sediments could migrate off site with surface water flowing away from the site. The Supplemental RI surface soil samples were analyzed for TOC and the samples collected from the marsh area around the site, (samples WOD-SS-128 through WOD-SS139) in general, exhibited higher TOC levels than the samples collected from the site itself, see Table 5.1. The samples collected along the unnamed tributary to Little Mosquito Creek exhibited the highest TOC levels.

The soil pH factor helps predict the mobility of inorganic species and is defined as a measure of the hydrogen ion concentration. The soil pH is important with respect to a metal's ability to remain soluble or to precipitate as a particular salt. Several metals, including lead, are soluble at both basic and acid pH conditions. These metals are considered amphoteric. The soil at the WOD is classified as acidic in nature and Supplemental RI soil samples had a pH range from 4.3 to 7.1.

6.3.3 Groundwater Migration

Migration and transport of contaminants in groundwater are a potential release mechanisms at the site. Both organic and inorganic contaminants from the surface and subsurface soils can enter the groundwater and be transported vertically and horizontally. The WOD groundwater flow patterns are

detailed in Section 4.5. Groundwater vertical gradients are generally in a downward direction and groundwater flow is influenced by the site topography. The site is bisected by a groundwater divide and groundwater flows in a northeasterly and northwesterly direction toward Little Mosquito Creek and its tributaries and associated wetlands. Little Mosquito Creek, located to the north of the WOD, is expected to be the regional groundwater discharge zone.

The groundwater analytical data from the site revealed the presence of VOCs, primarily BTEX compounds. The presence of these contaminants is limited, in the most part, to one well, see Figure 5-3. This well also contained a free product layer before development. The product layer did not return after a two week period, see Section 4.4, and contaminant levels detected in the sample from this well are not indicative of the presence of free product (see Figure 5-3).

Advective transport and mechanical dispersion in groundwater are the principal mechanisms by which VOCs and other contaminants are transported away from the site. The first and most likely route of contaminant migration is through surface soil to subsurface soil, where contaminants enter the upper flow zone. As water infiltrates through a contaminated zone, partitioning from solid to aqueous phase will occur. The potential amount of chemical dissolving into infiltrating water is determined by a number of factors, including residence time, solubility, partitioning factor, and pH of the water. The dissolved chemicals continue downward and are able to interact with stationary (soil) particles in the saturated and unsaturated zones. After percolating through the capillary zone, dissolved contaminants are then able to enter groundwater, where transport can occur in bulk through advection. The chemical concentrations in groundwater increase significantly shortly after initial groundwater impact to a maximum level. The longer-term effects at the source are a gradual decrease in the concentrations over time as chemical removal from the source area occurs. Short-term variations in release rate and impact to groundwater can occur, but long-term trends of decreased levels are usually observed. Diffusion and dispersion throughout the groundwater flow regime occur as the groundwater flows.

During groundwater contaminant transport, a number of processes help to reduce chemical concentrations. Diffusion and attenuation effects are non-transformational mechanisms that result in a direct decrease in chemical concentrations. Chemical and biological reactions with dissolved chemicals can also result in decreased concentrations. The products, however, may have significantly different chemical, transport, and toxicological properties from the parent compounds.

Sampling results from the WOD monitoring wells indicate that groundwater contaminants are isolated to one discrete area and are not migrating at detectable levels, see Section 5.4.3.

6.4 SITE-SPECIFIC ENVIRONMENTAL FATE OF CONTAMINANTS OF POTENTIAL CONCERN

This section identifies the potential contaminant release and transport mechanisms identified through evaluation of the chemical analytical data and known characteristics of the site. This section will also address existing and potential migration routes at the site, in particular migration through surface and subsurface soil and groundwater.

Three basic factors influence the potential migration of contaminants:

- Physical and chemical properties of the specific compounds;
- Physical and chemical characteristics at the site and in the surrounding study area; and
- Volume and concentration of contaminants.

6.4.1 Surface and Subsurface Soil

As evidenced by the analytical data, various organic compounds including monocyclic aromatics, halogenated aliphatics, PAHs, and VOCs were detected at generally low levels in surface and in slightly higher levels in subsurface soil at the site. The frequency of detection was also low and confined to a small area of surface staining at the site. The highest number and level of metals were detected in a subsurface sample collected from waste materials encountered in the west-central portion of the site.

The VOCs detected at the site are highly mobile in soil environments. The VOCs would tend to move downward into the groundwater column. The other organics and metals detected in the WOD soils are generally highly sorbed onto soil particles and generally are immobile in the environment. Site data indicates that VOCs are present at the highest concentrations and frequency in the subsurface area immediately below the surface stain and that the levels are relatively low. The contaminant pattern present in these soils, primarily ethyl benzene, toluene and xylenes, is similar to the contaminant pattern seen in groundwater samples collected in the same area, indicating that the subsurface soils may be associated with the source of the groundwater contamination. However, the level of contaminants present in the subsurface soils, see Section 5, is considered relatively low in comparison to the groundwater levels. In addition, the contaminant concentrations detected in the subsurface soils and groundwater are below the EPA soil screening guidance for the soil to groundwater pathway. The contaminant levels detected in WOD soils were qualitatively reviewed to evaluate the soil to groundwater pathway. Table 6.5 presents the results of this evaluation. The EPA screening criteria is shown for those contaminants that were found in groundwater and were detected in site soils and which, for metals, were present at levels greater than background. For each substance, maximum concentrations found in soils were compared to their respective soil screening level (SSL) (EPA, 1996d). EPA's on-line SSL calculator was used to define the SSL. Assumptions used in this process are

presented in Table 6.5 and in Appendix G. No groundwater contaminant was detected in site soils (and at levels that exceed background for metals) and the screening criteria.

The site data suggests that WOD soils are not currently a significant source of contaminant release to the environment. Past removal actions and/or of years of exposure to infiltration of precipitation and groundwater flushing may have removed the majority of soluble contaminants from the soils. It is also possible that the source was introduced at the water table through excavation and disposal, see Section 5.5.

6.4.2 Groundwater

As evidenced by analytical data, the major groundwater contaminants detected at the site were volatile organics, primarily monocyclic aromatics, and metals. Based on the available data and site records, it is believed that the VOC compounds were introduced at the WOD through diposal activities and appear to have remained in the groundwater at the point of disposal. The dissolved waste components do not appear to have migrated beyond the point of disposal and contamination is limited to a small discreet portion of the site. Section 5.4.3 presents a detailed evaluation of the nature and extent of contamination in groundwater and Section 5.5 presents a detailed conceptual model for the WOD. Supplemental RI and historical data indicate that contamination within the groundwater is not migrating at detectable levels from the site and the contaminant levels appear to be at steady state or slightly decreasing in magnitude.

Metals contamination in groundwater samples collected from the WOD do not indicate a contaminant pattern that is consistent with past operations or current soil contaminant levels. Chromium was detected at elevated concentrations in samples collected from two monitoring wells (WFF16-GW1 and -GW3) but was detected at elevated levels in only one soil sample (WOD-SU-111-0507) collected from a different part of the site located on the opposite side of the groundwater divide that bisects the site, see Figure 4-4. Similarly, the only well sample that contained arsenic (WFF16-GW2D) is located upgradient of the only soil sample (WOD-SU-111-0507) that contained elevated arsenic levels, see Figure 4-4. The sample from this well also exhibited a low ORP (-51 mv) and dissolved oxygen content (0.49 mg/L) which may be indicative of a reducing environment which may enhance dissolution of metals from native materials.

7.0 HUMAN HEALTH RISK ASSESSMENT

This section provides a description of the risk assessment methods employed for the supplemental soil and groundwater risk assessment for the NASA WFF Waste Oil Dump Site (WOD), as well as a summary of the soil and groundwater risk assessment results. The general objectives of the risk assessment were to estimate the actual or potential risks to human health resulting from the presence of contamination in area groundwater, surface soil, and disturbed soil (footnoted as soil* to denote surface and subsurface soils that have been mixed), and to provide the basis for determining appropriate remedial measures (if necessary) for these media as part of the Feasibility Study.

7.1 INTRODUCTION

The specific objectives of the risk assessment were as follows:

- To estimate the actual or potential risks to human health resulting from the presence of contamination in area groundwater, surface soil, and soil* (mixture of surface and subsurface soils), at designated areas/media of concern.

- To provide a basis for establishing concentrations that are protective of potential human receptors under industrial, construction, and residential exposure scenarios.

- To determine the need for remedial measures (if applicable) for these media.

Three major aspects of chemical contamination must be considered when assessing public health risks: (1) contaminants with toxic characteristics must be found in environmental media and must be released by either natural processes or by human action; (2) potential exposure points must exist either at the source or via migration pathways if exposure occurs at a remote location other than the source; and (3) human or environmental receptors must be present at the point of exposure. Risk is a function of both toxicity and exposure; without any one of the three factors listed above, there is no risk.

This risk assessment is divided into Data Evaluation, Estimation of Exposure Point Concentrations, Exposure Assessment, Toxicity Assessment, Risk Characterization, Uncertainty Analysis, and Summary/Conclusions. Each section is briefly discussed below. Note that the tables associated with this section follow a standardized format adopted by EPA Risk Assessment Guidance for Superfund (RAGS), Volume I, Part D: Standardized Planning, Reporting, and Review of Superfund Risk Assessments.

Several aspects of Data Evaluation (Section 7.2) are primarily concerned with analytical data treatment methodology and were discussed in the preceding section, including handling of qualifiers and nondetects, averaging of duplicates, distributional analysis of the data, and background comparison tests. Once these steps are complete, chemicals of potential concern (COPCs) are selected for each medium that represent the potential contributors to significant site-associated risks. COPCs for each medium of interest are summarized on RAGS D Table 2s.

Estimation of Exposure Point Concentrations (Section 7.3) provides a statistical procedure for estimating the chemical input into each of the exposure pathways. The shape of the data distribution and magnitude of the standard deviation for each COPC define the basis for calculating the upper 95 percent confidence limit on the mean concentration, which is the input concentration of a chemical used to estimate the site-associated risks. Different methods of calculating EPCs apply for lead. EPCs are presented for each medium of interest on RAGS D Table 3s.

Exposure Assessment (Section 7.4) identifies categories of potential human health exposure based upon a characterization of the site setting, delineates potential receptors consistent with current and possible future land use patterns, outlines possible exposure routes by medium, documents the parameters and equations used in exposure estimates for each pathway, and explains the exposure evaluation used in blood-lead modeling. Exposure input parameters for each receptor and exposure pathway are presented on RAGS D Table 4s.

Toxicity Assessment (Section 7.5) presents available reference doses, cancer slope factors, EPA weight of evidence, adjustment of the dose-response parameters, chemical-specific dermal absorption factors, and toxicity equivalency factors (TEFs) for dioxins/furans. In this section, toxicity factors for noncancer toxicity and cancer risks are presented for all COPCs on RAGS D Table 5s and 6s, respectively.

Risk Characterization (Section 7.6) presents the approaches for determining carcinogenic risks, noncarcinogenic risks, and lead risks. The risk characterization quantitatively evaluates the potential for adverse health effects from exposure to COPC concentrations in environmental media by integrating information developed during the toxicity and exposure assessments. In this section, RAGS D Table 9s present noncancer risks subdivided according to target organ and a total of cancer and noncancer risks summed across all COPCs for each environmental medium, exposure pathway, and receptor. An overall cumulative summary of risks across all media and pathways of exposure is also presented for each receptor.

Uncertainty Analysis (Section 7.7) is a discussion of the general and site-specific uncertainties associated with the estimated risks, exposure models, and assumptions utilized in the HHRA.

7.2 DATA EVALUATION

7.2.1 Identification of COPCs

The selection of COPCs was based on chemical-specific concentrations, occurrence, distribution, and toxicity. Groundwater, surface soil, and subsurface soil analytical data were used to select COPCs by examining only those chemicals with positive detections. Groundwater and surface soil data were evaluated as separate media to which receptors might be exposed, whereas data from surface and subsurface soils were combined to allow evaluation as a single exposure medium (denoted as soil*) that represents potentially disturbed soil for future potential receptors. All site-related subsurface soil samples were evaluated in Sections 5 and 6 for the purpose of evaluating the overall extent of contamination and for soil-to-groundwater pathway screening. However, subsurface soil samples collected from depths below 15 feet are not considered available for potential exposure and are not relevant to the human health risk assessment. While future site activities may result in mixing and redistribution of subsurface soils, the EPA guidance generally limits the potential exposure depth to 10 feet and VADEQ guidance limits the depth of consideration to 15 feet or to groundwater, whichever is encountered first. Five WOD subsurface soil samples were collected from depths greater than 15 feet. For human health risk assessment purposes, these samples were omitted from the data.

A substance was considered a candidate COPC for an exposure medium if the maximum detected concentration was greater than the associated risk-based concentration (RBC) based on a target cancer risk of 1×10^{-6} or a noncancer hazard quotient (HQ) of 0.1. RBCs were obtained from the latest EPA Region 3 Risk Based Concentrations (RBCs) listing for soil and tap water (EPA, 2003a). All exposures to groundwater, surface soil, or soil* for all receptors were conservatively screened using the residential exposure assumptions in the RBC table. RBCs that were based on noncancer effects were adjusted from a HQ of 1.0 to a HQ of 0.1 to protect against the possibility of additive toxic effects from multiple chemicals.

For soil media, candidate COPC metals were eliminated from quantitative risk calculations if none of the statistical tests indicated that levels were greater than background. [Such metals might contribute to background risks but not to site-related risks and are discussed further in the Uncertainty Analysis (Section 7.7).] The statistical methodology for comparing site data to background was presented in section 5.3. Results of background comparisons for surface soil are discussed in Section 5.3.4 and are presented in Table 5.5. For subsurface soil, relevant background comparison test results are presented in Appendix G. (Note that the table of background comparison results shown in Appendix G is considered relevant only to the direct contact exposure evaluation for the human health risk assessment because it omits soil samples collected at depths below 15 feet, while five additional samples from depths

below 15 feet were added to the data set used for the purpose of evaluating the overall site-related extent of contamination and for soil-to-groundwater pathway screening in Section 5.)

For surface soil, metals that exceeded RBCs were appropriately considered as COPCs for quantitative risk calculations if the outcome of any quantitative statistical test was above background (Y) or if all background tests were considered as not applicable (NA) because of diminished or unreliable capacity to detect a significant difference between site and background. (This can occur, for example, if there are very few samples, too many nondetected results, or other problems with the data.) For the evaluation of candidate COPC metals in soil* (mixture of surface and subsurface soil) two separate series of background tests - one for surface soil and one for subsurface soil - were considered in conjunction. Candidate COPC metals in soil* were eliminated from the risk assessment based upon background tests if at least one of the two data sets (either surface or subsurface soil) was qualified as not above background (N) and neither data set was judged to be above background (Y) for a particular COPC.

COPCs for metals present in groundwater were selected based only upon RBC comparisons and in lieu of any statistical background comparisons. Background tests were not considered reliable for groundwater because of a statistically inadequate number of site-specific upgradient sample locations (data were collected only for two upgradient wells). However, a qualitative comparison of site and background samples for groundwater is presented within the Nature and Extent of Contamination (Section 5).

Other considerations were applied to evaluate whether chemicals that do not have published RBC criteria should be selected as COPCs. Essential nutrients were not considered as COPCs, including calcium, chloride, magnesium, potassium, and sodium. Where possible, detected chemicals that did not have published toxicity criteria were compared to surrogate RBC criteria that were adopted from available RBCs for substances having similar chemical structure. The RBC for pyrene was used as a surrogate for evaluating phenanthrene and benzo(g,h,i)perylene since the latter substances do not have published RBCs. Other detected chemicals that did not have published toxicity criteria from accepted references (EPA, IRIS, HEAST, or NCEA) were not retained as COPCs but are addressed in the Uncertainty Analysis (Section 7.7) to document cases where a current lack of knowledge regarding toxicity adds uncertainty to the risk assessment.

A lead value of 400 mg/kg [Office of Solid Waste and Emergency Response (OSWER) Directive, EPA, 1994a] was used as the residential soil screening RBC level and was applied to surface soil and soil* (mixture of surface and subsurface soils). Lead was evaluated as a potential COPC in groundwater based upon comparison to the action level of 15 ug/L.

The RBC for hexavalent chromium was used for COPC selection because speciation data (i.e., trivalent versus hexavalent) were not available for samples collected at WOD. Similarly, the RBC for methyl mercury was used for COPC selection because the form of mercury at the site is unknown and methyl mercury is considered the most toxic form of mercury.

Results of selection of COPCs for each of the media of concern at WOD are presented in the following subsections. The COPC selections and the rationale for inclusion or exclusion of chemicals are presented in Tables 7.1 through 7.3. Chemicals with a "Y" listed in the COPC selection column of each table were retained as COPCs for all quantitative risk calculations.

7.2.1.1 Surface Soil COPC Selection

The following substances were selected as COPCs in surface soil and are shown on Table 7.1:

- Benzo(a)pyrene

While the above PAH exhibited maximum concentrations above screening criteria, nine additional PAHs were detected at levels below RBCs and therefore are not expected to contribute to significant site-related risks. Seventeen VOCs were detected at concentrations less than RBCs. Maximum concentrations of the metals aluminum, arsenic, iron, manganese, and vanadium exceeded their respective RBCs but all of these metals were found to be not above background based upon statistical tests shown in Table 5.5.

While COPC selection was contingent upon maximum detected concentrations exceeding RBCs, from a risk-based perspective it is significant to note other descriptive statistics to better understand the range of detected concentrations that may affect risk for specific COPCs. For example, the benzo(a)pyrene arithmetic mean also exceeded the respective screening RBC. Benzo(a)pyrene was detected in nine out of 60 samples at concentrations ranging from 47 ug/kg to 1300 ug/kg.

7.2.1.2 Soil* COPC Selection

The following substances were selected as COPCs in soil* (mixture of surface and subsurface soil) and are shown on Table 7.2:

- Antimony
- Silver
- Benzo(a)pyrene

While the above PAH exhibited a maximum concentration above the screening criteria, 9 additional PAHs were detected at levels below RBCs and therefore are not expected to contribute to significant site-related risks. 18 VOCs were detected at concentrations less than RBCs and at low frequencies of detection (most VOCs were detected in less than 10 percent of samples, with the only exceptions being acetone, 2-butanone, and methyl acetate). Maximum concentrations of the metals aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, thallium, vanadium, and zinc exceeded their respective RBCs but all of these metals were found to be not above background in surface soil and subsurface soil based upon statistical tests shown in Tables 5.5 and 5.6.

While COPC selection was contingent upon maximum detected concentrations exceeding RBCs, from a risk-based perspective it is significant to note other descriptive statistics to better understand the range of detected concentrations that may affect risk for specific COPCs. For example, benzo(a)pyrene arithmetic mean also exceeded the respective screening RBC. Benzo(a)pyrene concentrations ranged from 47 ug/kg to 1300 ug/kg.

The maximum detected concentrations of antimony and silver exceeded their respective screening RBCs. In contrast, the arithmetic means for these COPCs were each less than their respective screening RBCs, indicating that average exposure concentrations would be below screening criteria. Antimony was detected in 3 out of 59 samples at concentrations ranging from 0.36 to 18.3 mg/kg. Silver was detected in 37 out of 72 samples at concentrations ranging from 0.11 to 389 mg/kg.

7.2.1.3 Groundwater COPC Selection

The following substances were selected as COPCs in groundwater and are shown on Table 7.3:

- Aluminum
- Arsenic
- Chromium
- Iron
- Lead
- Manganese
- 2-Methylnaphthalene
- 4-Methylphenol
- Bis(2-ethylhexyl) Phthalate
- Dibenzofuran
- Naphthalene
- 1,2,4-Trimethylbenzene

- 1,3,5-Trimethylbenzene
- Benzene
- Tetrachloroethene
- Toluene
- Xylene (Total)

The 6 VOCs listed above exhibited maximum concentrations above screening criteria. Six additional VOCs were detected at levels below RBCs and therefore are not expected to contribute to significant site-related risks. Individual xylene isomers exceeded RBCs as well as total xylenes. Note that screening criteria and toxicity factors are identical for all xylene isomers so risk characterization can be performed without loss of specificity using only the sum of isomers, xylene (total), rather than individual isomers. This approach is more representative because it accounts for the cumulative exposure at each sample location.

Six metals exceeded RBCs and nine metals were below RBCs. Background tests were considered not applicable for groundwater due to a limited number of samples so COPC selection was based only on RBC comparison. The locations of maximum detected concentrations of organics in subsurface soil (samples 2WFF16-SB2S2 and 2WFF16-SB1S2) represent the two samples nearest the monitoring well location (WFF15-GW7) where the groundwater concentrations of BTEX, naphthalene, manganese, and lead were maximum, and arsenic and iron levels in the top 3 ranked concentrations among WOD groundwater samples. This coincidence might suggest localized site-related influence on metals in groundwater at this location, but a hot spot source of these metals in soil is not indicated because these metals were not found at levels statistically greater than background in subsurface soil and arsenic and iron levels in groundwater were higher at locations removed from the vicinity of the location of BTEX groundwater detections. Note that arsenic, chromium, and lead were not detected in upgradient samples and upgradient levels of manganese and iron were several orders of magnitude less than the maximum levels found downgradient or within the WOD site.

While COPC selection was contingent upon maximum detected concentrations exceeding RBCs, from a risk-based perspective it is significant to note other descriptive statistics to better understand the range of detected concentrations that may affect risk for specific COPCs. For several chemicals, the arithmetic mean of groundwater concentrations exceeded the respective screening RBC; this was the case for arsenic, chromium, iron, manganese, 2-methylnaphthalene, dibenzofuran, naphthalene, benzene, and tetrachloroethene. Arsenic was detected in one out of eight samples at a concentration of 21.4 µg/L and chromium was found in three groundwater samples at concentrations ranging from 6.1 to 147 µg/L. Iron was detected in all 12 groundwater samples at concentrations ranging from 50.6 to 49900 µg/L. Manganese was detected in all 12 groundwater samples at concentrations ranging from 15 to 641 µg/L. Dibenzofuran,

2-methylnaphthalene, naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-trimethylbenzene, tetrachloroethene, and xylene (total) were detected in one out of 12 samples at concentrations of 4 µg/L, 130 µg/L, 130 µg/L, 170 µg/L, and 74 µg/L, 5 µg/L, and 540 µg/L, respectively. Benzene was detected in two out of 12 samples at concentrations ranging from 8 to 11 µg/L.

The maximum concentrations of aluminum, lead, 4-methylphenol, bis(2-ethylhexyl)phthalate, and toluene exceeded their respective screening RBCs. Note that the arithmetic means were less than their respective screening RBCs, indicating that average exposure concentrations would be below screening criteria. Aluminum was detected in five groundwater samples at concentrations ranging from 831 to 8220 µg/L. Lead was detected in two out of 12 samples with concentrations ranging from 5.1 to 68.6 µg/L. 4-Methylphenol was detected in one out of 11 samples at a concentration of 42 µg/L. Bis(2-ethylhexyl)phthalate was detected in three out of 12 samples at concentrations ranging from 2 to 18 µg/L. Toluene was detected in two out of 12 samples at concentrations of 2 and 120 µg/L.

7.3 EXPOSURE POINT CONCENTRATIONS

In this risk assessment, an exposure point concentration (EPC) represents an estimated chemical concentration to which a receptor is assumed to be continuously exposed while in contact with an environmental medium. Using all the analytical results for related samples, an EPC was calculated for each COPC identified in each medium of concern at the WOD Site. The EPC was calculated using the latest risk assessment guidance from EPA (1989a, 1991a, 1991b, 2000, 2002a, 2002b), Gilbert (1987), and Singh (1999). The shape of the data distribution and magnitude of the standard deviation for each COPC define the basis for calculating the upper 95 percent confidence limit on the mean concentration, which is the input concentration of a chemical used to estimate the site-associated risks.

Before EPCs are calculated, the analytical database is manipulated to remove unusable data points, average field duplicate results, and calculate statistics that determine the potential distributional shape of the data as previously discussed in Section 5.3.2, Data Pretreatment. The results of calculations of the shape of the data distribution are presented in distributional analysis tables in Appendix G. This information, together with the calculated magnitude of the standard deviation or standard deviation of log-transformed data for each COPC, defines the basis for calculating the upper 95 percent confidence limit on the mean concentration, which is the input concentration of a chemical used to estimate the site-associated risks.

7.3.1 Reasonable Maximum and Central Tendency Exposure EPCs

Two types of EPCs are possible for use in this risk assessment, reasonable maximum exposure (RME) EPCs and central tendency exposure (CTE) EPCs. RME is the exposure that is expected to represent a high end, but not worst-case, exposure in a given medium of concern. CTE is the exposure that is expected to represent an average exposure to receptors in a given medium of concern. The CTE EPC was selected to be the same as the RME EPC, in accordance with EPA Region 3 recommendations. Therefore, in this risk assessment, CTE analysis involves changes only to the input parameters for each exposure pathway and not the EPC. (Note: CTE analysis at WOD was performed only for those exposure pathways where the estimated cancer risks are above 1×10^{-4} and the non-cancer HIs based on the same target organ are above 1.0.)

7.3.2 EPC Calculations

EPCs are selected following a decision scheme that chooses from several options, depending upon how many data points exist, whether the data are normal or lognormally distributed, and the particular value for the standard deviation of logarithmically-transformed chemical concentrations. EPCs can be either the maximum value, 95 percent upper confidence limit on the mean of normally distributed data (95 percent UCL-N), the 95 percent H-statistic upper confidence limit on log transformed data (95 percent UCL-H), the Chebychev 95 percent confidence limit on logarithmically-transformed data using minimum variance unbiased estimates (95 percent UCL-Cheby-mv), the Chebychev 99 percent confidence limit on log transformed data using minimum variance unbiased estimates (99 percent UCL-Cheby-mv), the Chebychev 95 percent confidence limit assuming a nonparametric distribution (95 percent UCL-Cheby), the Chebychev 97.5 percent confidence limit assuming a nonparametric distribution (97.5 percent UCL-Cheby), or the Chebychev 99 percent confidence limit assuming a nonparametric distribution (99 percent UCL-Cheby). All the foregoing represent conservative estimates of the mean, each of which is appropriate under different circumstances.

EPCs for lead were calculated differently because the model is designed to accept the mean lead value and estimate the upper percentile of blood-lead concentrations from this quantity. Therefore, in the case of lead, the candidate RME EPC was selected as the arithmetic mean of the lead concentration (for a normal distribution) in every case.

The calculation of an EPC involves two steps. First, the distribution of the data was evaluated as described in the preceding section. Then, based on the distribution of the data, an EPC was either calculated or selected.

Several important assumptions were used to evaluate the distribution of the data (Section 5.3.2):

- The distribution of a data set was classified as lognormal, normal, or unknown (i.e., nonparametric) using the results of the Shapiro Wilk W-test. If the W test accepted the hypothesis of a normal distribution, then the W test using the logarithmic conversion was not applicable and the estimation of the upper 95th percentile confidence limit on the mean was based upon a normal distribution and standard deviation. If the normal distribution did not pass the W-test, then the W-test was evaluated for a logarithmic transformation of data. If the data were neither normal nor lognormally distributed, but the standard deviation of the logarithms was less than 0.5, a normal distribution was assumed. Otherwise, if neither distribution matched the data set of interest, a nonparametric distribution was assumed.

- If fewer than three samples were available in the area or medium of concern, estimation of the distributional shape was not possible and the 95 percent UCL was not estimated.

- If fewer than five samples were available, the determination of distributional shape and the estimation of statistical upper confidence limits were not considered reliable or accurate because of inadequate sample size, and the maximum value was selected as the EPC in this case.

If the data were determined to be normally distributed, then the standard deviation of the sample set and the student's t-value were used to calculate the one-sided 95 percent UCL, as follows:

First, the standard deviation of the sample set was determined:

$$S = \sqrt{\sum\left(\frac{(X_i - m)^2}{n-1}\right)}$$

where:

S	=	Standard deviation of the data
X_i	=	Individual sample value
μ	=	Arithmetic mean of the n samples
n	=	Number of samples

The one-sided upper 95 percent confidence limit (95 percent UCL-N) was calculated as follows:

$$95\%UCL - N = m + \frac{(t \times S)}{\sqrt{n}}$$

where:

S	=	Standard deviation of the data
t	=	One-sided t distribution factor
μ	=	Arithmetic mean of the n samples
n	=	Number of samples

If the data were considered to be lognormally distributed, then the EPC was selected following a decision scheme listed below. The EPC was based on either the maximum value, the 95 percent H-statistic upper confidence limit on log transformed data (95 percent UCL-H), the Chebychev 95 percent confidence limit on log transformed data using minimum variance unbiased estimates (95 percent UCL-Cheby-mv), the Chebychev 99 percent confidence limit on log transformed data using minimum variance unbiased estimates (99 percent UCL-Cheby-mv), the Chebychev 95 percent confidence limit (95 percent UCL-Cheby), or the Chebychev 99 percent confidence limit (99 percent UCL-Cheby). The following table presents the type of upper confidence limit chosen according to the number of data points and the observed value for the log standard deviation:

Statistical UCL Methods for Lognormally Distributed Data

No. of Data Points	Log Standard Deviation	Type of UCL
N < 5	--	Maximum value
N ≥ 5	0.5 ≤ S < 1.0	95% UCL-H
5 ≤ N < 25	1.0 ≤ S < 1.5	95% UCL-Cheby-mv
N ≥ 25	1.0 ≤ S < 1.5	95% UCL-H
5 ≤ N < 20	1.5 ≤ S < 2.0	99% UCL-Cheby-mv
20 ≤ N < 50	1.5 ≤ S < 2.0	95% UCL-Cheby-mv
N ≥ 50	1.5 ≤ S < 2.0	95% UCL-H
5 ≤ N < 25	2.0 ≤ S < 2.5	99% UCL-Cheby-mv
25 ≤ N < 70	2.0 ≤ S < 2.5	95% UCL-Cheby-mv
N ≥ 70	2.0 ≤ S < 2.5	95% UCL-H
5 ≤ N < 30	S ≥ 2.5	Maximum of quantities: 99% UCL-Cheby-mv or 99% UCL-Cheby
30 ≤ N < 70	S ≥ 2.5	Maximum of quantities: 95% UCL-Cheby-mv or 95% UCL-Cheby
N ≥ 70	S ≥ 2.5	95% UCL-H

For data considered to be lognormal, the standard deviation of the log-transformed sample set was determined as follows:

$$S = \sqrt{\sum\left(\frac{(X_i - m)^2}{n-1}\right)}$$

where:

S	=	Standard deviation of the log-transformed data
X_i	=	Individual sample value (log-transformed)
μ	=	Arithmetic mean of the log-transformed n samples
n	=	Number of samples

If the EPC was based on the 95 percent H-statistic upper confidence limit on log transformed data (95 percent UCL-H), this quantity was then calculated as follows:

$$95\%UCL - H = e^{\left[m + 0.5S^2 + \left(\frac{SH}{\sqrt{n-1}}\right)\right]}$$

where:

e	=	constant (base of the natural log, equal to 2.718)
μ	=	Arithmetic mean of the log-transformed data
H	=	H-statistic (e.g., from table published in Gilbert, 1987)
S	=	Standard deviation of the log-transformed data
n	=	Number of samples

Most of the lognormal cases listed above required use of upper confidence limits based on Chebychev equations using minimum variance unbiased estimates (95 percent UCL-Cheby-mv or 99 percent UCL-Cheby-mv). In these cases, the mean and standard deviation were calculated in a different manner. For the Chebychev confidence limits, the following equations were used to calculate the minimum variance unbiased estimates of the population's mean (mean-T) and standard deviation (sigma-mv) for lognormally distributed data, according to Gilbert (1987):

Mean-T = $\exp\{:_L\}◀\!\!|_n(s_y^2/2)$

Where: $:_L$ = arithmetic mean of log-transformed data

s_y = standard deviation of log-transformed data

$◀\!\!|_n(t)$, with $t = s_y^2/2$, is the infinite series:

$◀\!\!|_n(t)$ = $1 + (n-1)t/n + (n-1)^3t^2/(2!n^2(n+1)) + (n-1)^5t^3/(3!n^3(n+1)(n+3)) + (n-1)^7t^4/(4!n^4(n+1)(n+3)(n+5)) + \ldots$

Sigma-mv = $\exp\{2*\bar{y}_L\}*[\ \hat{\delta}_n\{2s_y^2\} - \hat{\delta}_n\{\ s_y^2(n-2)/(n-1)\}\ ]$

Where: $\bar{y}_L$ = arithmetic mean of log-transformed data

s_y = standard deviation of log-transformed data

$\hat{\delta}_n(t)$, with $t = 2s_y^2$ or $t = s_y^2(n-2)/(n-1)$, is the infinite series:

$\hat{\delta}_n(t) = 1 + (n-1)t/n + (n-1)^3t^2/(2!n^2(n+1)) + (n-1)^5t^3/(3!n^3(n+1)(n+3)) + (n-1)^7t^4/(4!n^4(n+1)(n+3)(n+5)) + \ldots$

The Chebychev upper confidence limits were then estimated using the following equations, according to Singh (1999):

$$95\%UCL - Chebymv = meanT + sigmamv \times \sqrt{\frac{1}{0.05 \times N}}$$

$$99\%UCL - Chebymv = meanT + sigmamv \times \sqrt{\frac{1}{0.01 \times N}}$$

If the data were considered to be neither normally nor lognormally distributed, then the EPC was selected following a decision scheme listed below. If the standard deviation of the log transformed data was less than 0.5, then the EPC was calculated assuming a normal distribution and the 95 % UCL using the t-distribution, as delineated earlier. Otherwise, the EPC was based on either the Chebychev 95 percent confidence limit (95 percent UCL-Cheby), the Chebychev 97.5 percent confidence limit (97.5 percent UCL-Cheby), or the Chebychev 99 percent confidence limit (99 percent UCL-Cheby). The following table presents the type of upper confidence limit chosen according to the number of data points and the observed value for the log standard deviation:

Statistical UCL Methods for Nonparametrically Distributed Data

No. of Data Points	Log Standard Deviation	Type of UCL
N < 5	--	Maximum value
N ≥ 5	S < 0.5	95% UCL-N
N ≥ 5	0.5 ≤ S < 1.0	95% UCL-Cheby
N ≥ 5	1.0 ≤ S < 2.0	97.5% UCL-Cheby
N ≥ 5	S ≥ 2.0	99% UCL-Cheby

For data considered to be nonparametric, the standard deviation of the log-transformed sample set was determined as follows:

$$S = \sqrt{\sum\left(\frac{(X_i - m)^2}{n-1}\right)}$$

where:

S	=	Standard deviation of the log-transformed data
X_i	=	Individual sample value (log-transformed)
μ	=	Arithmetic mean of the log-transformed n samples
n	=	Number of samples

Wherever the nonparametric case required use of upper confidence limits based on Chebychev equations, the EPC was based on either the Chebychev 95 percent, 97.5 percent, or 99 percent confidence limits. In these cases, the mean and standard deviation were calculated in the conventional manner used for a normal distribution.

The Chebychev upper confidence limits were then estimated using the following equations, according to Singh (1999):

$$95\%UCL - Cheby = \mu + S \times \sqrt{\frac{1}{0.05 \times N}}$$

$$97.5\%UCL - Cheby = \mu + S \times \sqrt{\frac{1}{0.025 \times N}}$$

$$99\%UCL - Cheby = \mu + S \times \sqrt{\frac{1}{0.01 \times N}}$$

where:

S	=	Standard deviation of the original (not transformed) data
μ	=	Arithmetic mean of the original (not transformed) sample data
N	=	Number of samples

7.3.3 Optional Use of Maximum Observed Concentration

The preceding decision scheme was used to generate statistical estimates of the UCL for each COPC in accordance with recent guidance (EPA, 2002a, 2002b). In most, but not all cases, this approach produces statistical UCL estimates that are not unrealistically high, which is one of the main goals of the recent guidance. In contrast, earlier guidance (EPA, 1992e) specified that the H-distribution be applied to

UCLs for all lognormal and nonparametric cases and had a drawback of frequently generating extremely high UCLs greater than the maximum detected concentration.

To prevent unrealistically high EPCs at the WOD site, if the statistical UCL was greater the maximum observed concentration, then the maximum was selected as the default EPC. This optional step is allowed in current guidance (EPA, 2002a), but there is a caveat that this may yield a reasonable EPC estimate only if the sample size is sufficiently large and samples have been collected at random from the exposure unit.

7.3.4 EPCs Selected for WOD Groundwater, Surface Soil, and Soil*

Tables 7.4, 7.5, and 7.6 present the RME and CTE EPCs selected for WOD surface soil, soil* (mixture of surface and subsurface soil), and groundwater, respectively. The columns labeled rationale for selecting the EPC indicate the applicable factors that determine the EPC decision for each COPC, including number of data points, log standard deviation, and comparison of distributional test scores for normal data (Wno), lognormal data (Wlg), and lookup table values (Wt). Appendix G contains comparisons of various UCL estimates for each detected chemical and associated values of the aforementioned parameters involved in the UCL decision scheme.

7.4 EXPOSURE ASSESSMENT

The exposure assessment evaluates the potential for human exposure to the chemicals detected in the environmental media of concern at the WOD Site investigated during the RI. This section presents a characterization of the exposure setting, characterizes the exposed populations, identifies actual or potential exposure routes, and summarizes the methods used to generate exposure estimates. To determine whether there is an actual or potential exposure, the most likely pathways of contaminant release and transport, as well as the human and environmental activity patterns, are considered. A complete exposure pathway has three components: a source, a route of transport, and an exposure point for receptors. These components are addressed in this section.

7.4.1 Characterization of the Exposure Setting

A general description of the facility, its setting, and its surroundings is provided in Section 2.0 of the work plan (TtNUS, 2003a). Section 3.0 of the work plan includes a characterization of WOD site conditions, including physiography and topography, climate, soil, surface-water hydrology, and public water supply and use.

7.4.2 Potential Receptors

The receptors chosen for the WOD site are presented in this section. All of the receptors listed below are applicable to the WOD site because all selected media were sampled at the site. The potential exposure scenarios are as follows:

- Current and future Industrial Worker - The full-time onsite worker is an adult who works at WFF year round. This receptor is potentially exposed via incidental ingestion of, dermal contact with, and particulate dust inhalation of COPCs in surface soil. Examples of potential activities include groundskeeping and lawn maintenance near the airfield, installation or maintenance of airfield equipment, and utility or padwork. Inhalation of VOCs from vapor emissions from soil was not considered a significant pathway of exposure because VOCs were detected infrequently and at low concentrations in soil at the WOD. Exposure frequency for the current industrial worker is anticipated to be less than 39 days per year because only intermittent occupational activities are related to maintenance of the nearby active runway, while a hypothetical future industrial worker might be involved in a broad range of worker activities up to 250 days per year under less restricted land use scenarios. However, this future exposure scenario is only hypothetical because the area is expected to remain an active runway in the foreseeable future.

  Groundwater ingestion was not evaluated under the industrial worker scenarios because the WOD is located at the end of an active runway where no buildings are present or expected to be constructed. In addition, it is unlikely or not reasonable to assume that potable water wells for commercial/industrial purposes would be installed at the WOD because the shallow aquifer is a low-yielding aquifer and use of the aquifer is controlled and restricted by Virginia through issuances of permits under the Groundwater Management Act. In addition, public water is available at the site. The unlikely use of groundwater is evaluated under the residential scenario.

- Future Construction Worker - A future construction worker is an adult who is assumed to work at WFF involved with any type of excavation activity. This receptor is potentially exposed to disturbed soil represented by a mixture of surface soil and subsurface soil. The future construction worker may be exposed via incidental ingestion of, dermal contact with, and particulate dust inhalation of COPCs in disturbed soil. Additionally, this receptor is potentially exposed via dermal contact with contaminants in groundwater and inhalation of VOCs in shallow groundwater during excavation activities. Inhalation of VOCs from vapor emissions from soil was not considered a significant pathway of exposure because VOCs were detected infrequently and at low concentrations in soil at the WOD.

- Future Resident - A future resident is a person who will live in a residence located at or near WFF in a hypothetical future scenario. This receptor occupies a residence as a child (from age 0 - 6 years) and as an adult (for 24 years exposure duration). This receptor is potentially exposed to COPCs in groundwater via tap water ingestion, dermal contact while bathing, and inhalation of VOCs present in vapors generated during showering (adult resident only). In addition, the future resident is potentially exposed via incidental ingestion of, dermal contact with, and particulate dust inhalation of COPCs in surface soil. Inhalation of VOCs from vapor emissions from soil is not considered a significant pathway of exposure because VOCs were detected infrequently and at low concentrations in soil at the WOD. Non-cancer risks were estimated separately for child versus adult, whereas, cancer risks were considered cumulative (risks were summed over child and adult periods of exposure). Additionally, potential exposure to disturbed soil that is a mixture of surface and subsurface soils as a result of construction or landscaping activities was addressed.

- In accordance with the WOD Supplemental RI work plan, potential exposures to the surface water pathway near the WOD were not considered in this risk assessment. The only exposures to this pathway near the WOD would involve contact with surface water or sediment within an unnamed tributary or Little Mosquito Creek. Risk assessments of both areas were previously presented within the WFF Site 14 and 15 RI report that has been submitted to the EPA and VADEQ and is undergoing review, comment, and finalization. WFF Sites 14 and 15 have a greater potential for direct impact to these area surface waters than the WOD and for this reason no further sampling or assessment was proposed as part of the WOD RI.

7.4.3 Exposure Estimates

The estimation routes, methods, and models presented in this section are consistent with current EPA risk assessment guidance (EPA, 1989a, 1991b, 1992c, 1993a, 1994b, 1995, 1996b, 1996c, 1997b, and 2001a). Exposure estimates associated with each exposure route are presented below. All exposure scenarios incorporate RME and CTE EPCs in the estimation of intakes. There are three environmental media for WFF through which potential receptors (see previous section) can be either directly or indirectly exposed to site-related COPCs: groundwater, surface soil, and soil* (disturbed soil with a composition represented by a mixture of surface soil and subsurface soil). Note that disturbed soil was considered to represent only samples collected at depths less than 15 feet, consistent with VADEQ exposure assessment guidelines that are based upon a 15 foot depth of soil excavation for building foundations.

Noncarcinogenic risks are estimated using the concept of an average annual exposure. The intake incorporates terms describing the exposure time and/or frequency that represent the number of hours per day and the number of days per year that exposure occurs. This is used along with the "averaging time",

which converts the total annual exposure to an average daily dose by dividing by 365 days per year of exposure. Noncarcinogenic risks for some exposure routes (e.g., soil) are generally greater for children than for adults because of differences in body weight and intake. Carcinogenic risks, on the other hand, are estimated as an incremental lifetime risk and, therefore, incorporate terms to average the exposure duration (years) over the course of a lifetime (70 years).

7.4.4 Groundwater Exposure Estimates

Four potential exposure routes are associated with groundwater at the WOD:

- Ingestion
- Dermal absorption
- Inhalation of airborne vapors during showering
- Inhalation of VOCs in shallow groundwater during excavation

For groundwater, future construction workers were evaluated only for dermal absorption and inhalation of VOCs in shallow groundwater during excavation because incidental ingestion of groundwater during construction is not expected to result in significant intake of groundwater. Several exposure pathways were evaluated for the future resident: Tap water ingestion and dermal absorption while bathing or showering were evaluated for a future residential child, future residential adult, and future lifetime resident (cancer risk only). Additionally, for groundwater, inhalation of airborne vapors during showering was evaluated for a future residential adult. While future residential land use is not anticipated at the WOD, the degree of exposure to contaminants by residential receptors would be greater than with other exposure scenarios, so that a residential exposure evaluation conservatively assesses whether there is any need for institutional controls or other remedial measures under all possible future exposure scenarios that might occur at the WOD.

Tables 7.7 and 7.8 present the RME and CTE input parameters selected for groundwater ingestion and dermal exposure pathways, respectively, for a residential child. Tables 7.9 and 7.10 present the RME and CTE input parameters selected for groundwater ingestion and dermal exposure pathways, respectively, for a residential adult. Table 7.11 presents the RME and CTE input parameters selected for the groundwater inhalation exposure pathway for a residential adult. Table 7.12 presents the RME and CTE input parameters selected for dermal exposure to shallow groundwater during excavation by a construction worker. Table 7.13 presents the RME and CTE input parameters selected for the inhalation of VOCs in shallow groundwater during excavation.

For the groundwater exposure pathways, the following items are noteworthy:

- Chemical-specific permeability constants associated with modeling of dermal absorption are not shown on the exposure input tables. The dermal permeability constants were obtained from EPA RAGS Part E, Draft Dermal Exposure Guidance (EPA, 2001a) and are presented in Appendix G for each COPC.

- Derivations of the surface areas used in all dermal exposure equations in this risk evaluation for each potential receptor are based on surface areas for available body parts. Surface areas were extracted from dermal guidance (EPA, 2001a) for each potential receptor:

- Chemical-specific parameters associated with modeling of inhalation of airborne vapors during showering are not shown on the exposure input tables. Henry's Law constants and other parameters used in this model are obtained from several sources, including EPA (1996c) and Foster and Chrostowski (1987) and are presented in Appendix G for each COPC. Henry's Law constants published for 25 degrees C were are corrected to account for an elevated showering temperature of 45 degrees C (EPA, 2001b and Sander, 1999).

- The ASTM Guidance (Designation E 1739-95) presents the model parameters for determination of a volatilization rate of VOCs from groundwater into air. The following equations were utilized:

$$VF = \frac{H'}{1+\left[\frac{U_{air} * S_{air} * L_{GW}}{W * D_{EFF-WS}}\right]} * 10^3 \, L/m^3$$

Where:

VF = Volatilization Factor for VOC in groundwater

H' = dimensionless Henry's Law constant for VOC at 25 degrees C

U_{air} = 470 cm/sec = wind speed above ground surface in the mixing zone

S_{air} = 200 cm = ambient mixing zone

L_{GW} = 0.1 cm = depth to groundwater, $h_v + h_{cap}$

h_v = 0 cm = thickness of the vadose zone

h_{cap} = 0.1 cm = thickness of the capillary fringe

D_{EFF-WS} = effective diffusion between GW and Soil for VOC

W = 1500 cm = width of the source parallel to groundwater flow direction

$$D_{EFF-WS} = \left(h_{cap} + h_v\right) * \left[\frac{h_{cap}}{D_{EFF-cap}} + \frac{h_v}{D_{EFF-s}}\right]^{-1}$$

Where:

D_{EFF-WS} = effective diffusion between GW and Soil for VOC

h_v = 0 cm = thickness of the vadose zone

h_{cap} = 0.1 cm = thickness of the capillary fringe

$D_{EFF-cap}$ = effective diffusion through capillary fringe for VOC

D_{EFF-s} = cm2/sec = effective diffusion in soil based on vapor-phase concentration, chemical specific

Because h_v is equal to zero, this equation reduces to show that the effective diffusion between groundwater and surface soil (D_{EFF-WS}) is equal to the effective diffusion through the capillary fringe ($D_{EFF-cap}$).

$$D_{EFF-cap} = \left[D^{air} * \frac{Oa_{cap}^{3.33}}{Ot^2}\right] + \left[D^{wat} * \frac{1}{H'} * \left(\frac{Ow_{cap}^{3.33}}{Ot^2}\right)\right]$$

Where:

$D_{EFF-cap}$ = effective diffusion through capillary fringe for VOC

D^{air} = cm^2/sec = diffusion coefficient in air for VOC

D^{wat} = cm^2/sec = diffusion coefficient in water for VOC

H' = dimensionless Henry's Law constant for VOC

Oa_{cap} = 0.038 cm^3-air/cm^3-soil = volumetric air content in capillary fringe soils (equals Ot minus Oa_{cap})

Ow_{cap} = 0.342 cm^3-H2O/cm^3-soil = volumetric water content in capillary fringe soils

Ot = 0.38 cm^3/cm^3-soil = total soil porosity

7.4.5 Surface Soil and Disturbed Soil Exposure Estimates

Three potential exposure routes are associated with direct exposure to surface soil and disturbed soil at the WOD, including:

- Ingestion
- Dermal absorption
- Inhalation of fugitive dust

For disturbed soil (with a composition represented by a mixture of surface soil and subsurface soil), incidental ingestion, dermal absorption, and inhalation of fugitive dust were evaluated for a future

residential child, future residential adult, future lifetime resident (cancer risk only), and a future adult construction worker. For surface soil, ingestion, dermal absorption, and inhalation of fugitive dust were evaluated for a future residential child, future residential adult, future lifetime resident (cancer risk only), and a current/future adult industrial worker. For soil, VOCs were detected infrequently at trace levels. Therefore, inhalation exposure to VOC emissions from soil is expected to be negligible at the WOD, with ingestion and dermal absorption contributing to the majority of potential risks.

Tables 7.14, 7.15, and 7.16 present the RME and CTE input parameters for a residential child exposed to COPCs in soil (either surface soil or disturbed soil) via incidental ingestion, dermal contact, and inhalation of particulate dusts, respectively. Tables 7.17, 7.18, and 7.19 present the RME and CTE input parameters for a residential adult exposed to COPCs in soil (either surface soil or disturbed soil) via incidental ingestion, dermal contact, and inhalation of particulate dusts, respectively. Tables 7.20, 7.21, and 7.22 present the RME and CTE input parameters for a current industrial worker (groundskeeper or maintenance worker) exposed to COPCs in surface soil via incidental ingestion, dermal contact, and inhalation of particulate dusts, respectively. Tables 7.23, 7.24, and 7.25 present the RME and CTE input parameters for a future industrial worker (groundskeeper or maintenance worker) exposed to COPCs in surface soil via incidental ingestion, dermal contact, and inhalation of particulate dusts, respectively. Tables 7.26, 7.27, and 7.28 present the RME and CTE input parameters for a construction worker exposed to COPCs in disturbed soil via incidental ingestion, dermal contact, and inhalation of particulate dusts, respectively. For surface soil and disturbed soil exposure pathways, the following items are noteworthy:

- Chemical-specific absorption factors associated with dermal absorption were not shown on the exposure input tables. These values are provided in EPA dermal exposure guidance (EPA, 2001a) and specific EPA Region 3 guidance (EPA, 1995) and are presented in Section 7.5.

- The site-specific particulate emission factor (PEF) associated with modeling inhalation of fugitive dust was derived based on information presented in EPA's Soil Screening Guidance (EPA, 1996b) and site-specific information. The PEF was calculated as follows:

$$PEF(m^3/kg) = \frac{Q/C \times 3600 s/h}{\mathrm{E}_{10}}$$

where:

PEF	=	1.70 x 10^8 m^3/kg	= Site-specific particulate emission factor for WOD Site
Q/C	=	90.24 (g/m^2-s)/(kg/m^3)	= Inverse of the mean conc. at the center of a 0.5 acre source (Q/C climate zones table in EPA, 1996b)

E_{10}	=	0.036 x (1-V) x $(U_m /Ut)^3$ x F(x)	= Particulates less than 10 microns (PM_{10}) average annual emission flux (g/m^2-hr)
V	=	0.8	= Fraction of Vegetative cover
U_m	=	4.7 m/sec	= Mean Annual Windspeed at 7 m (Table 4-1, Cowherd)
U_t	=	7.44 m/s	= Threshold value of windspeed at 7 m for WOD (from equation, below)
F(x)	=	1.05	= Function of x, where x = 0.886 x Ut/U_m = 1.40 (From Figure 4-3, Cowherd)
Ut	=	U* x (1/0.4) x ln (z/z_0)	

where:

Ut	=	7.44 m/s	= Wind speed at height z for WOD
z	=	700 cm	= Height above surface (Cowherd)
z_0	=	6 cm	= Roughness height for site conditions: WOD assume 6 cm due to tall vegetation and surrounding woods and hills (Figure 3-6, Cowherd)
U*	=	0.625 m/s	= Friction velocity for assumed particle size 0.5mm (Figure 3-4, Cowherd), corrected x 1.25 (EPA, 1996b)

- Derivations of the surface areas used in all dermal exposure equations for each potential receptor were based on surface areas for available body parts. Surface areas were compiled from EPA sources (EPA, 2001a and 1997b) and are presented on the aforementioned tables for each receptor.

7.4.6 Blood-Lead Modeling

As outlined in OSWER Directive 9355.4-12, EPA (1994a) has developed an approach to evaluating lead risks that recognizes the multimedia nature of lead exposures, incorporating absorption and pharmacokinetic information. Research has been conducted concerning lead intake and resultant blood-lead levels. Determinations of lead uptake from soil and drinking water were considered. Potential blood-lead level increases are presented in Section 7.6, along with the potential implications of blood-lead results for residential children and industrial adults (pregnant females). The following discussion presents information that is useful in estimating lead exposure.

No threshold has been defined for effects related to blood-lead increases. Effects below blood-lead levels of 10 ug/dL are difficult to define. Inhibition of certain enzymes involved in red blood cell

metabolism has been reported to occur at 10 to 15 ug/dL and possibly lower. Small increases in blood pressure have been observed in adults with blood-lead levels down to 7 ug/dL (EPA, 1994b). The most sensitive subpopulation to effects below 7 ug/dL would be infants, whose early neurological development can be affected by blood-lead concentrations reportedly down to 5 ug/dL (EPA, 1994b). Lead is also a fairly common environmental contaminant and, for this reason, typical blood-lead levels in the population at large may already exceed the concentrations discussed here.

For drinking water exposure, children 0 through 6 months old are expected to experience blood-lead increases at the rate of 0.26 ug/dL per ug/L lead in water up to 15 ug/L and at the rate of 0.04 ug/dL for every ug/L lead in water above 15 ug/L (EPA, 1994b). For older children, the ratio is 0.12 ug/dL blood lead per ug/L lead in water up to 15 ug/L and 0.06 ug/dL for every ug/L lead in water above 15 ug/L (EPA, 1994b). For adults, the ratio is approximately 0.06 ug/dL blood lead per ug/L in water (EPA, 1994b). Dietary intake of lead is assumed to produce increases of 0.02 to 0.04 ug/dL blood lead per ug/day ingested by adults and 0.16 ug/dL blood lead per ug/day ingested by infants (EPA, 1986a). Blood-lead levels are estimated to increase by 0.6 to 6.8 ug/dL per 1,000 mg/kg lead in soil (EPA, 1986a).

Blood-lead levels in residential children (age 0 to 6) were estimated using the Integrated Exposure and Uptake Biokinetic (IEUBK) Model (version 1.0) developed by EPA (EPA, 1994b). The model was applied using the average groundwater and either surface soil or disturbed soil concentrations in each applicable medium of concern where lead was selected as a COPC at the WOD Site.

For the assessment of ingestion of lead in groundwater and either disturbed soil or surface soil by residential children, default values in the model were used to represent background lead concentrations in air, house dust, and the level of maternal contribution. Additionally, the model's default values were used to represent respiratory rate, soil and water ingestion rates, and the percent of lead absorption by the various exposure routes. The only site-specific factors put into the IEUBK Model were the average lead concentration in groundwater and soil.

The output of the IEUBK Model is a histogram that presents the estimated percentage of residential children (age 0 through 6 years) with a blood-lead level above 10 ug/dL (considered to be the threshold significance level above which adverse effects cannot be ruled out). When the percentage of the population estimated to have blood-levels above 10 ug/dL is greater than five percent, then EPA considers the potential for adverse effects to be significant (EPA, 1994a). These histograms, along with input information particular to each run of the IEUBK model, are presented in Appendix G, along with the estimated percentages of residential children (age 0 through 6 years) with blood-lead levels above 10 ug/dL. Uncertainties associated with the IEUBK model are discussed in Section 7.7.

Noncarcinogenic risks for industrial worker exposures to lead in surface soil or disturbed soil can be estimated using the Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil (EPA, 1996b). The model is based on a biokinetic slope factor that estimates fetal blood lead concentration in women exposed to lead in contaminated media. A simplified (linear) representation of lead biokinetics is used to predict quasi-steady state blood lead concentrations among adults who have relatively steady patterns of lead exposure (exposure duration of at least 90 days and exposure frequencies greater than once per week). The intake assumptions used in the model are average lead concentrations in each in soil, the ingestion rate, and an exposure frequency. Note that lead was not selected as a COPC in surface soil or disturbed soil so no estimates were generated.

The biokinetic model input parameters are a biokinetic slope factor (ug/dl adult blood lead per ug/day uptake) of 0.4, a constant of proportionality between fetal blood lead concentration at birth and maternal blood lead concentration of 0.9, a soil absorption factor of 0.12 (equal to the product of the relative bioavailability of 0.6 and a soluble lead absorption factor of 0.2), a background blood lead (typical concentration for women of child bearing age not exposed to the site) of 1.7 ug/dl, and a geometric standard deviation ranging from 1.8 (representative of homogeneous population demographics). Blood lead predictions can provide an estimate of the 95th percentile of blood lead concentrations among fetuses born to women having site exposures.

7.5 TOXICITY ASSESSMENT

Toxicity Assessment identifies the potential health hazards associated with exposure to each of the COPCs. A toxicological evaluation characterizes the inherent toxicity of a compound. The literature indicates that the COPCs have the potential to cause carcinogenic and/or noncarcinogenic health effects in humans. Although the COPCs may cause adverse health effects, dose-response relationships and the potential for exposure must be evaluated before the risks to receptors can be determined. Dose-response relationships correlate the magnitude of the intake with the probability of toxic effects, as discussed below. Toxicity information for the COPCs in groundwater, surface soil, and disturbed soil at the WOD Site are presented in Tables 7.29, 7.30, 7.31, and 7.32 (RAGs D Tables 5.1, 5.2, 6.1, and 6.2, respectively).

An important component of the risk assessment process is the relationship between the intake of a compound (the amount of a chemical that is absorbed by a receptor) and the potential for adverse health effects resulting from exposure to that dose. Dose-response relationships provide a means by which potential public health impacts can be quantified. The published information of doses and responses is used in conjunction with information on the nature and magnitude of human exposure to develop an estimate of potential health risks.

Dose-response values [reference doses (RfDs) and slope factors (SFs)] have been developed by EPA and other sources for many organics and inorganics. This section provides a brief description of these parameters.

7.5.1 Reference Doses

The RfD is developed by EPA for chronic and/or subchronic human exposure to hazardous chemicals and is based solely on the noncarcinogenic effects of chemical substances. Subchronic RfDs are specifically developed to be protective for a portion of a lifetime exposure to a compound (as a Superfund program guideline, short term). Chronic RfDs are specifically developed to be protective for long-term exposure to a compound (as a Superfund program guideline, long term). The RfD is usually expressed as a dose (mg) per unit body weight (kg) per unit time (day). It is generally derived by dividing a No-Observed-(Adverse)-Effect-Level (NOAEL or NOEL) or a Lowest-Observed-Adverse-Effect-Level (LOAEL) by an appropriate uncertainty factor. NOAELs, etc. are determined from laboratory or epidemiological toxicity studies. The uncertainty factor is based on the availability of toxicity data.

Uncertainty factors are generally applied as multiples of 10 to represent specific areas of uncertainty in the available data. A factor of 10 is used to account for variations in the general population (to protect sensitive subpopulations), when test results from animals are extrapolated to humans (to account for interspecies variability), when a NOAEL derived from a subchronic study (instead of a chronic study) is used to develop the RfD, and when a LOAEL is used instead of a NOAEL. In addition, EPA reserves the use of a modifying factor of up to 10 for professional judgment of uncertainties in the database not already accounted for. The default value of the modifying factor is 1.

The RfD incorporates the surety of the evidence for chronic human health effects. Even if applicable human data exist, the RfD (as diminished by the uncertainty factor) still maintains a margin of safety so that chronic human health effects are not underestimated. Thus, the RfD is an acceptable guideline for evaluation of noncarcinogenic risk, although the associated uncertainties preclude its use for precise risk quantitation. Oral and dermal RfDs, primary target organs, uncertainty/modifying factors, and sources of noncancer toxicity information for COPCs are provided in Table 7.29 (RAGs D Table 5.1). Inhalation RfDs, primary target organs, uncertainty/modifying factors, and sources of toxicity information for selected COPCs in soil are provided in Table 7.30 (RAGs D Table 5.2). Inhalation RfDs (mg/kg/day) were derived from inhalation reference concentrations (RfCs) (mg/m^3) by dividing by 70 kg (an assumed human body weight), multiplying by 20 m^3/day (an assumed human inhalation rate), and adjusting by an appropriate absorption factor (EPA, 1997a).

Target organ data have been extracted from the Integrated Risk Information System (IRIS; EPA, 2003), Health Effect Assessment Summary Tables (HEAST; EPA, 1997a), or other applicable sources. Only the target organs that are affected in the applicable study in which the RfD was derived have been included in Tables 7.29 and 7.30 (RAGs D Tables 5.1 and 5.2, respectively).

Noncarcinogenic risks for lead were not quantified and compared to RfDs, because EPA has implemented an approach to evaluating lead risks that does not provide a single-point estimate output. Instead, potential lead exposures are evaluated using a biokinetic model to estimate expected blood-lead increases. The blood-lead model is discussed in Section 7.4.6. A discussion of the results of the blood-lead model estimates is presented in Section 7.6.

7.5.2 Cancer Slope Factors (SFs)

SFs are applicable for estimating the lifetime probability (assumed 70-year lifespan) of human receptors developing cancer as a result of exposure to known or potential carcinogens. This factor is generally reported in units of 1/(mg/kg/day) and is derived through an assumed low-dosage linear relationship of extrapolation from high to low dose responses determined from animal studies. The value used in reporting the slope factor is the upper 95 percent confidence limit.

Oral and dermal SFs, weight of evidence, and sources of toxicity information for selected COPCs in groundwater, surface soil, and disturbed soil are provided in Table 7.31 (RAGs D Table 6.1). Inhalation SFs, weight of evidence, and sources of toxicity information for selected COPCs in groundwater, surface soil, and disturbed soil are provided in Table 7.32 (RAGs D Table 6.2). Inhalation SFs $(mg/kg/day)^{-1}$ were derived from inhalation unit risks $(ug/m^3)^{-1}$ by multiplying by 70 kg (an assumed human body weight), dividing by 20 m^3/day (an assumed human inhalation rate), and multiplying by the appropriate conversion factor (1000 ug/mg) (EPA, 1997a).

Carcinogenic risks for lead were not quantified, because EPA has not published a SF for inorganic lead. Instead, potential lead exposures were evaluated using a biokinetic model to estimate expected blood-lead increases. A discussion of these results is presented in Section 7.6.

7.5.3 EPA Weight of Evidence

The weight-of-evidence designations indicate the preponderance of evidence regarding carcinogenic effects in humans and animals. The categories are defined as follows (EPA, 1992a):

WEIGHT OF EVIDENCE CATEGORY	DEFINITION
A	Known human carcinogen
B1	Probably human carcinogen, limited human data are available
B2	Probable human carcinogen, sufficient animal data are available but inadequate human data are available
C	Possible human carcinogen
D	Not classifiable as to human carcinogenicity
E	Evidence of noncarcinogenicity in humans

7.5.4 Adjustment of Dose-Response Parameters for Dermal Exposure

Risks associated with dermal exposures were evaluated using toxicity values that are specific to absorbed dermal doses. Most oral toxicity values are based on administered doses rather than absorbed doses. Therefore, in accordance with EPA Region 3 (1995) and EPA (1989a and 2001) guidance, the toxicity values based on administered doses were adjusted before they were used for evaluating absorbed doses.

Dermal RfDs and SFs were obtained from oral RfDs and SFs via the following relationships:

$$RfD_{Adjusted} = RfD_{Oral} * GI_{Oral}$$

$$SF_{Adjusted} = SF_{Oral} / GI_{Oral}$$

where:

GI_{Oral} = Gastrointestinal (GI) Absorption Efficiency (EPA, 1995)

RfD_{Oral} = Oral Reference Dose (EPA, 2003a; EPA, 2003b; EPA, 1997a; or EPA-NCEA)

SF_{Oral} = Oral Slope Factor (EPA, 2003a; EPA, 2003b; EPA, 1997a; or EPA-NCEA)

Dermally adjusted RfDs and SFs for COPCs are presented in Tables 7.29 (RAGs D Table 5.1) and 7.31 (RAGs D Table 6.1), respectively.

7.5.5 Toxicity Criteria for Chromium

The toxicity criteria for hexavalent chromium (Cr^{+6}) were used in this risk assessment because speciation data (i.e., trivalent versus hexavalent) were not available for samples collected in areas/media of concern at the WOD Site. Hexavalent chromium was considered to be more toxic than trivalent chromium, therefore, this assumption is conservative in nature.

7.5.6 Toxicity Criteria for Mercury

The toxicity criteria for methyl mercury were used in this risk assessment because data indicating the form of mercury in environmental media was not available at the WOD Site. Methyl mercury was considered to be more toxic than inorganic mercury, therefore, this assumption is conservative in nature.

7.5.7 Carcinogenicity of PAHs

Carcinogenic PAHs are related by chemical structure. Only benzo(a)pyrene has an EPA-published SF (EPA, 2003a). All other carcinogenic PAHs, except carbazole, have SFs based on their potency relative to benzo(a)pyrene. The relative potency factors (RPF) for carcinogenic PAH COPCs at the WOD Site were as follows (EPA, 2003):

- Benzo(a)pyrene (RPF = 1.0)
- Benz(a)anthracene (RPF = 0.1)
- Benzo(b)fluoranthene (RPF = 0.1)
- Benzo(k)fluoranthene (RPF = 0.01)
- Chrysene (RPF = 0.001)
- Dibenz(a,h)anthracene (RPF = 1.0)
- Indeno(1,2,3-cd)pyrene (RPF = 0.1)

7.5.8 Constituents for Which EPA Has Not Developed Toxicity Criteria

EPA has not developed toxicity values for all chemicals for use in quantitative risk characterization. These COPCs include benzo(g,h,i)perylene and phenanthrene. Therefore, risks for these chemicals were evaluated using a surrogate (similar PAH), fluoranthene, which is consistent with previous EPA Region 3 risk assessment projects. RBC screening criteria were applied and resulted in neither substance present at a level greater than the screening criterion.

7.6 RISK CHARACTERIZATION

Potential human health risks resulting from the exposures outlined in the preceding sections are characterized on a quantitative and qualitative basis in this section. Quantitative risk estimates were generated based on risk assessment methods outlined in current EPA guidance (EPA, 1989).

Noncarcinogenic risk estimates were presented in the form of HQs and HIs that are determined through comparison of estimated intakes with published RfDs. Incremental cancer risk estimates were provided in the form of dimensionless probabilities based on SFs.

Estimated human intakes were developed for each of the specific exposure routes discussed in the preceding sections. Both noncarcinogenic and carcinogenic risks were summarized for each exposure route on a series of tables in this section.

7.6.1 Noncarcinogenic Risks

Noncarcinogenic risk was assessed using the concept of HQs and HIs. The HQ is defined as the ratio of the estimated intake and the RfD for a selected chemical of concern, as follows:

$$HQ = \frac{Intake}{RfD}$$

HIs were generated by summing the individual HQs for the COPCs. If the value of the HI exceeds unity (1.0), the potential for noncarcinogenic health risks associated with exposure to that particular chemical mixture cannot be ruled out (EPA, 1986b). In that case, particular attention should be paid to the target organ(s) affected by each chemical because these are generally the organ(s) associated with RfD-derived effects, and results (HIs) for different organs are not truly additive. The HI is not defined as a mathematical prediction of the severity of toxic effects; it is simply a numerical indicator of exceedance of the acceptable threshold for noncarcinogenic effects. Above an HI of 1, toxic effects would not necessarily occur, but can no longer be ruled out.

7.6.2 Carcinogenic Risks

Incremental cancer risk (ICR) estimates were generated for each of the exposure pathways using the estimated intakes and published SFs, as follows:

$$Risk = Intake * SF$$

If the above equation results in a risk greater than 0.01, the following equation was used:

$$Risk = 1 - e^{-(Intake * SF)}$$

The risk determined using these equations is defined as a unitless expression of an individual's increased likelihood of developing cancer as a result of exposure to carcinogenic chemicals. An ICR of 1×10^{-6} indicates that the exposed receptor has a one in a million chance of developing cancer under the defined exposure scenario. Alternatively, such a risk may be interpreted as representing one additional case of cancer in an exposed population of one million persons. The calculated cancer risks should be recognized as upper-limit estimates. SFs are defined as the upper 95 percent confidence limit of a dose-response curve generally derived from animal studies. Actual human risk, while not identifiable, is not expected to exceed the upper limit based on the SFs and may, in fact, be lower.

7.6.3 Comparison of Quantitative Risk Estimates to Benchmark Criteria

In order to interpret the quantitative risks and to aid risk managers in determining the need for remediation at a site, quantitative risk estimates are compared to typical benchmarks.

A HI exceeding unity (1) indicates that there may be potential noncarcinogenic health risks associated with exposure. If a HI exceeds unity, target organ effects from individual COPCs contributing to the risk are considered. Only those chemicals that impact the same target organ(s) or exhibit similar critical effect(s) will be regarded as truly additive. Thus, COPCs contributing to a HI greater than 1 on the basis of a single target organ/effect are considered to be chemicals of concern (COCs) to be addressed in the feasibility study (FS). Individual COCs that exhibit a HI greater than 1 typically require consideration of remediation options such as treatment/disposal, land use restrictions, monitoring of natural attenuation, or other risk management strategies. However, remediation decisions are not made strictly based on HIs but are often modified by such regulatory requirements as MCLs or chemical-specific clean-up goals.

EPA has defined the range of 1×10^{-4} to 1×10^{-6} as the incremental cancer risk (ICR) "target range" such that, when the sum of cancer risks for all COPCs in a given medium is greater than 1×10^{-4}, this generally indicates that EPA will require consideration of remediation options such as treatment/disposal, land use restrictions, monitoring of natural attenuation, or other risk management strategies. ICRs below 1×10^{-4} normally will not require initiation of remedial efforts for a given medium. Whenever the overall ICR for a medium is greater than 1×10^{-4}, individual chemicals are selected which contribute significantly to overall risk, typically those chemicals with an individual ICR greater than 1×10^{-6}, and are included in the list of COCs to be addressed in the feasibility study (FS). However, remediation decisions are not made strictly based on ICRs but are often modified by such regulatory requirements as MCLs or chemical-specific clean-up goals.

Potential RME hazard indices and RME cancer risks were estimated for current and future potential receptors. The following sections present a summary of the results of the estimation of risk at areas/media of concern at the WOD Site.

Receptor risks are presented for each media of concern in the form of tables and summary text. Each of these sections includes summaries of risks estimated by the exposure scenarios. It should be noted that, in each risk summary table where HQs are reported as "N/A", the HQs were not calculable because no RfD has been established. Usually in such cases, carcinogenicity is considered to be more important, since carcinogenicity will generally be seen at lower doses than noncarcinogenic effects. Cancer risks that are reported as "N/A" generally indicate that the chemical is not carcinogenic or that an SF has not yet been developed.

7.6.4 Site-Specific Noncarcinogenic Risks

Site-specific noncarcinogenic risks were estimated for potential receptors at the WOD Site and are discussed below. If the RME HI did not exceed 1.0 for any target organ group, then the CTE risk was not calculated for that medium and that receptor. Chemical-specific HQs, associated target organs, and the cumulative HI for each target organ are presented on tables in this section according to RAGS D Table 9 format. Supporting data including non-cancer risks, receptor dose, and EPCs for each COPC are presented on tables in Appendix G for each receptor and exposure medium according to RAGS D Table 7 format.

7.6.4.1 Surface Soil

Noncarcinogenic risks did not exceed a HI of 1.0 for any target organ group for the receptors potentially exposed to surface soils at WOD Site, including the current industrial worker, future industrial worker, residential child, and residential adult (Tables 7.33, 7.34, 7.35, and 7.36, respectively).

7.6.4.2 Soil*

Noncarcinogenic risks did not exceed a HI of 1.0 for any target organ group for the receptors potentially exposed to soil* (mixture of surface and subsurface soil) at WOD Site, including the current industrial worker, future industrial worker, construction worker, residential child, and residential adult (Tables 7.38, 7.39, 7.40, 7.41, and 7.42, respectively).

7.6.4.3 Groundwater

Noncarcinogenic risks did not exceed a HI of 1.0 for any target organ group for the construction worker potentially exposed to groundwater at WOD Site (Table 7.44).

The estimated RME HI for a future residential child exposed to groundwater at WOD was 30.1 (Table 7.45), exposure contributions primarily from ingestion (and to a lesser extent, dermal absorption), which exceeded the acceptable level of 1.0. The target organs with HIs exceeding 1.0 from ingestion exposure were blood (HI of 14.6 - primary contributor iron); liver (HI of 14.5 - primary contributor iron); GI Tract (HI of 14.4 - primary contributor iron); skin and vascular system (HI of 4.4 - primary contributor arsenic); and CNS (HI of 3.0 - primary contributors manganese, aluminum, and 4-methylphenol). In addition, chromium exhibited a HQ of 5.9 (contributions from ingestion and dermal contact), but no target organ was associated because the RfD was based upon studies that only support determination of a no-observed-adverse-effects-level (NOAEL) and not a threshold target organ effect.

The estimated CTE HI for a future residential child exposed to groundwater at WOD was 16.8 (Table 7.46), exposure contributions primarily from ingestion (and to a lesser extent, dermal absorption), which exceeded the acceptable level of 1.0. The target organs with HIs exceeding 1.0 from ingestion exposure were blood (HI of 8.3 - primary contributor iron); liver (HI of 8.3 - primary contributor iron); GI Tract (HI of 8.2 - primary contributor iron); skin and vascular system (HI of 2.5 - primary contributor arsenic); and CNS (HI of 1.7 - primary contributors manganese, aluminum, and 4-methylphenol). In addition, chromium exhibited a HQ of 3.0 (contributions from ingestion and dermal contact), but no target organ was associated because the RfD was based upon studies that only support determination of a no-observed-adverse-effects-level (NOAEL) and not a threshold target organ effect.

The estimated RME HI for a future residential adult exposed to groundwater at WOD was 14.7 (Table 7.47), with exposure contributions primarily from ingestion, inhalation during showering, and to a lesser extent, dermal absorption. The target organs with HIs exceeding 1.0 primarily from ingestion exposure were blood (HI of 4.7 - primary contributor iron); liver (HI of 4.6 - primary contributor iron); GI Tract (HI of 4.6 - primary contributor iron); and skin and vascular system (HI of 1.4 - primary contributor arsenic). In addition, the target organ CNS exhibited a HI of 1.5 - primary contributor's manganese, aluminum, and 4-methylphenol via ingestion, and xylene (total) via inhalation. The HI also exceeded the acceptable level of 1.0 for the target organ respiratory system (HI of 2.7 - primary contributor naphthalene via inhalation). In addition, chromium exhibited a HQ of 1.6 (contributions from ingestion and dermal contact), but no target organ was associated because the RfD was based upon studies that only support determination of a no-observed-adverse-effects-level (NOAEL) and not a threshold target organ effect. The HI also

exceeded the acceptable level for 1,2,4-trimethylbenzene (HQ of 1.8), but target organ data were not supplied in the reference citation (EPA Region 3 risk-based concentration tables).

The estimated CTE HI for a future residential adult exposed to groundwater at WOD was 9.3 (Table 7.48), with exposure contributions primarily from ingestion, inhalation during showering, and to a lesser extent, dermal absorption. The target organs with HIs exceeding 1.0 primarily from ingestion exposure were blood (HI of 3.3 - primary contributor iron); liver (HI of 3.2 - primary contributor iron); and GI Tract (HI of 3.2 - primary contributor iron). The HI also exceeded the acceptable level of 1.0 for the target organ respiratory system (HI of 1.4 - primary contributor naphthalene via inhalation). In addition, chromium exhibited a HQ of 1.1 (contributions from ingestion and dermal contact), but no target organ was associated because the RfD was based upon studies that only support determination of a no-observed-adverse-effects-level (NOAEL) and not a threshold target organ effect.

7.6.5 Site-Specific Cancer Risks

Site-specific cancer risks were estimated for potential receptors at the WOD Site and are discussed below. If the overall RME ICR did not exceed 1.0×10^{-4} for a given medium and receptor, then the CTE risk was not calculated for that medium/receptor. Chemical-specific ICRs are presented on tables in this section according to RAGS D Table 9 format. Supporting data including cancer risks, receptor dose, and EPCs for each COPC are presented on tables in Appendix G for each receptor and exposure medium according to RAGS D Table 8 format.

7.6.5.1 Surface Soil

The estimated RME ICR for a current adult industrial worker exposed to surface soil at WOD Site was less than EPA's target risk range of 1×10^{-4} to 1×10^{-6} (Table 7.33).

The estimated RME ICR for a future adult industrial worker exposed to surface soil at WOD Site was 1.7×10^{-6} (see Table 7.34 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is near the lower end of EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

The estimated RME ICR for a future child resident exposed to surface soil at WOD Site was 6.3×10^{-6} (see Table 7.35 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

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The estimated RME ICR for a future adult resident exposed to surface soil at WOD Site was 2.9×10^{-6} (see Table 7.36 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is near the lower end of EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

The estimated RME ICR for a future lifetime resident exposed to surface soil at WOD Site was 9.2×10^{-6} (see Table 7.37 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

7.6.5.2 Soil*

The estimated RME ICR for a current adult industrial worker exposed to soil* (mixture of surface and subsurface soil) at WOD Site was less than EPA's target risk range of 1×10^{-4} to 1×10^{-6} (Table 7.38).

The estimated RME ICR for a future adult industrial worker exposed to soil* at WOD Site was 1.4×10^{-6} (see Table 7.39 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is near the lower end of EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

The estimated RME ICR for a construction worker exposed to soil* at WOD Site was less than EPA's target risk range of 1×10^{-4} to 1×10^{-6} (Table 7.40).

The estimated RME ICR for a future child resident exposed to soil* at WOD Site was 5.0×10^{-6} (see Table 7.41 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

The estimated RME ICR for a future adult resident exposed to soil* at WOD Site was 2.3×10^{-6} (see Table 7.42 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is near the lower end of EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

The estimated RME ICR for a future lifetime resident exposed to soil* at WOD Site was 7.3×10^{-6} (see Table 7.43 for contributions from ingestion, dermal contact, and inhalation of particulates). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The primary contributor to the cancer risk was benzo(a)pyrene via ingestion and dermal contact.

7.6.5.3 Groundwater

The estimated RME ICR for a future adult construction worker exposed to groundwater at WOD Site was below EPA's target risk range of 1×10^{-4} to 1×10^{-6} (see Table 7.44 for contributions from dermal contact and inhalation of VOCs in shallow groundwater during excavation activities).

The estimated RME ICR for a future child resident exposed to groundwater at WOD Site was 1.9×10^{-4} (see Table 7.45 for contributions from ingestion and dermal contact). The ICR slightly exceeds EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic via ingestion (ICR = 1.7×10^{-4}), tetrachloroethene via ingestion and dermal contact (ICR = 1.5×10^{-5}), and benzene via ingestion (ICR = 3.8×10^{-6}).

The estimated CTE ICR for a future child resident exposed to groundwater at WOD Site was 3.6×10^{-5} (see Table 7.46 for contributions from ingestion and dermal contact). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic and tetrachloroethene via ingestion.

The estimated RME ICR for a future adult resident exposed to groundwater at WOD Site was 2.4×10^{-4} (see Table 7.47 for contributions from ingestion, dermal contact, and inhalation of vapors during showering). The ICR slightly exceeds EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic via ingestion (ICR = 2.1×10^{-4}), tetrachloroethene via ingestion and dermal contact (ICR = 1.6×10^{-5}), bis(2-ethylhexyl) phthalate via ingestion and dermal contact (ICR = 1.2×10^{-6}), and benzene via ingestion and inhalation (ICR = 7.25×10^{-6}).

The estimated CTE ICR for a future adult resident exposed to groundwater at WOD Site was 6.2×10^{-5} (see Table 7.48 for contributions from ingestion, dermal contact, and inhalation of vapors during showering). The ICR is within EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic via ingestion, tetrachloroethene via ingestion and dermal contact, and benzene via ingestion.

The estimated RME ICR for a future lifetime resident exposed to groundwater at WOD Site was 4.3×10^{-4} (see Table 7.49 for contributions from ingestion, dermal contact, and inhalation of vapors during showering). The ICR exceeds EPA's target risk range of 1×10^{-4} to 1×10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic via ingestion (ICR = 3.8×10^{-4}), tetrachloroethene via ingestion and dermal contact (ICR = 3.1×10^{-5}), bis(2-ethylhexyl)

phthalate via ingestion and dermal contact (ICR = 2.1 x 10^{-6}), and benzene via ingestion and inhalation (ICR = 1.1 x 10^{-5}).

The estimated CTE ICR for a future lifetime resident exposed to groundwater at WOD Site was 9.8 x 10^{-5} (see Table 7.50 for contributions from ingestion, dermal contact, and inhalation of vapors during showering). The ICR is near the upper end of EPA's target risk range of 1 x 10^{-4} to 1 x 10^{-6}. The principal COPCs and exposure pathways contributing to the significant portion of cancer risks were arsenic via ingestion, tetrachloroethene via ingestion and dermal contact, and benzene via ingestion.

7.6.6 Blood-Lead Risk Characterization

Blood-lead levels in residential children (age 0 through 6) were estimated using the Integrated Exposure and Uptake Biokinetic (IEUBK) Model (version 1.0) developed by EPA (EPA, 1994b). The model was applied in each applicable medium of concern where lead was selected as a COPC at the WOD Site.

Lead was selected as a COPC in groundwater but not in surface soil or disturbed soil. Therefore, for the assessment of exposures to lead in groundwater by residential children, the arithmetic mean of the WOD Site groundwater lead concentration was used (7.81 ug/L), while default values in the IEUBK model were used to represent background lead concentrations in air, house dust, and the level of maternal contribution.

The output of the IEUBK Model is a histogram that presents the estimated percentage of residential children (age 0 through 6 years) with a blood-lead level above 10 ug/dL (considered to be the threshold significance level above which adverse effects cannot be ruled out). When the percentage of the population estimated to have blood-levels above 10 ug/dL is greater than five percent, then EPA considers the potential for adverse effects to be significant (EPA, 1994a).

The estimated percentage of children exposed to groundwater that were predicted to exhibit a blood lead level above 10 ug/dL is 1.6 percent, which is less than EPA's protective level cutoff of 5%. Therefore, no adverse effects would be anticipated for a hypothetical residential child exposed to lead in groundwater via tap water consumption. Appendix G contains histograms of anticipated blood lead concentrations and tabulated estimates of lead uptake contributions for air, diet, water, soil, and dust for age intervals from 0 through 6 years old.

7.6.7 Summary of Receptor Risks and Hazards for COPCs - Risks Due to Multiple Media

Although carcinogenic and noncarcinogenic risks were summarized separately for each exposure medium in the previous sections, a more realistic scenario is that potential receptors might be exposed to more than one medium, depending upon receptor activity patterns. In this section, additive risks were estimated to show the overall risks that each individual receptor might incur as a result of exposure to multiple media at WOD Site.

7.6.7.1 Current Industrial Worker

Based on the receptor exposure pathway assumptions listed in Section 7.4, the current industrial worker may be separately exposed to COPCs found in surface soil or soil* (mixture of surface and subsurface soil) but this receptor is not anticipated to be exposed to groundwater. Therefore, it was not necessary to estimate cumulative risks associated with multiple media exposures for this receptor.

7.6.7.2 Future Industrial Worker

Based on the receptor exposure pathway assumptions listed in Section 7.4, the future industrial worker may be separately exposed to COPCs found in surface soil or soil* (mixture of surface and subsurface soil) but this receptor is not anticipated to be exposed to groundwater. Therefore, it was not necessary to estimate cumulative risks associated with multiple media exposures for this receptor.

7.6.7.3 Construction Worker

Based on the receptor exposure assumptions listed in Section 7.4, the future construction worker may be exposed to COPCs in groundwater and soil* (mixture of surface and subsurface soil). Table 7.51 presents a summation of the RME cancer risks and non-cancer HIs estimated for combined exposure to COPCs in found in these two media. For the construction worker, multiple media exposures are not expected to result in non-cancer HIs exceeding 1.0 for any target organ. In addition, the cumulative cancer risk from multiple media exposure was less than EPA's target risk range of 1×10^{-4} to 1×10^{-6}.

7.6.7.4 Residential Child

Based on the receptor exposure assumptions listed in Section 7.4, the future residential child may be exposed to either groundwater and surface soil or groundwater and soil* (mixture of surface and subsurface soil), depending upon whether soil in a hypothetical future residential neighborhood would remain largely undisturbed or mixed as a result of construction and landscaping. Cancer risks and non-

cancer HIs associated with either type of scenario -- combined exposure to COPCs in groundwater and surface soil or combined exposure to groundwater and soil* - are presented in Tables 7.52 and 7.54, respectively. For either scenario, multiple media exposures could result in non-cancer HIs exceeding 1.0 for several target organs as a result of contributions from COPCs present in groundwater, whereas contributions to HIs from COPCs in surface soil or soil* were negligible.

For a residential child exposed to groundwater and soil*, the cumulative cancer risk exceeded EPA's target risk range of 1×10^{-4} to 1×10^{-6}, but contributions to the overall cancer risk were much greater in groundwater (greater than 1×10^{-4}), whereas the soil* cancer risk was within the target risk range.

For a residential child exposed to groundwater and surface soil, the cumulative cancer risk also exceeded EPA's target risk range of 1×10^{-4} to 1×10^{-6}, but contributions to the overall cancer risk were much greater in groundwater (greater than 1×10^{-4}), whereas the surface soil cancer risk was within the target risk range.

CTE cancer risks and non-cancer HIs for the future residential child exposed to COPCs in multiple media -- groundwater/surface soil and groundwater/soil* -- are presented in Tables 7.53 and 7.55, respectively.

7.6.7.5 Residential Adult

Based on the receptor exposure assumptions listed in Section 7.4, the future residential adult may be exposed to either groundwater and surface soil or groundwater and soil* (mixture of surface and subsurface soil), depending upon whether soil in a hypothetical future residential neighborhood would remain largely undisturbed or mixed as a result of construction and landscaping. Cancer risks and non-cancer HIs associated with either type of scenario -- combined exposure to COPCs in groundwater and surface soil or combined exposure to groundwater and soil* - are presented in Tables 7.56 and 7.58, respectively. For either scenario, multiple media exposures could result in non-cancer HIs exceeding 1.0 for several target organs as a result of contributions from COPCs present in groundwater, whereas contributions to HIs from COPCs in surface soil or soil* were negligible.

For a residential adult exposed to groundwater and soil*, the cumulative cancer risk exceeded EPA's target risk range of 1×10^{-4} to 1×10^{-6}, but contributions to the overall cancer risk were much greater in groundwater (greater than 1×10^{-4}), whereas the soil* cancer risk was within the target risk range.

For a residential adult exposed to groundwater and surface soil, the cumulative cancer risk also exceeded EPA's target risk range of 1×10^{-4} to 1×10^{-6}, but contributions to the overall cancer risk were much

greater in groundwater (greater than 1 x 10^{-4}), whereas the surface soil cancer risk was within the target risk range.

CTE cancer risks and non-cancer HIs for the future residential adult exposed to COPCs in multiple media - groundwater/surface soil and groundwater/soil* -- are presented in Tables 7.57 and 7.59, respectively.

7.6.7.6 Lifetime Resident

Based on the receptor exposure assumptions listed in Section 7.4, the future lifetime resident may be exposed to either groundwater and surface soil or groundwater and soil* (mixture of surface and subsurface soil), depending upon whether soil in a hypothetical future residential neighborhood would remain largely undisturbed or mixed as a result of construction and landscaping. Cancer risks associated with either type of scenario -- combined exposure to COPCs in groundwater and surface soil or combined exposure to groundwater and soil* -- are presented in Tables 7.60 and 7.62, respectively.

For a future lifetime resident exposed to groundwater and soil*, the cumulative cancer risk exceeded EPA's target risk range of 1 x 10^{-4} to 1 x 10^{-6}, but contributions to the overall cancer risk were much greater in groundwater (greater than 1 x 10^{-4}), whereas the soil* cancer risk was within the target risk range.

For a future lifetime resident exposed to groundwater and surface soil, the cumulative cancer risk also exceeded EPA's target risk range of 1 x 10^{-4} to 1 x 10^{-6}, but contributions to the overall cancer risk were much greater in groundwater (greater than 1 x 10^{-4}), whereas the surface soil cancer risk was within the target risk range.

CTE cancer risks for the future lifetime resident exposed to COPCs in multiple media - groundwater/surface soil and groundwater/soil* -- are presented in Tables 7.61 and 7.63, respectively.

7.7 UNCERTAINTY ANALYSIS

The goal of the uncertainty analysis is to identify important uncertainties and limitations associated with the groundwater risk assessment. As discussed in EPA (1989a), the risk measures used in Superfund site risk assessments are not fully probabilistic estimates of risk but rather are conditional estimates based on a considerable number of assumptions about exposure and toxicity. There are uncertainties associated with each aspect of risk assessment, from environmental data collection through risk characterization.

7.7.1 Uncertainties Associated with Data Collection and Evaluation

Major uncertainties associated with data collection and evaluation are highlighted below.

7.7.1.1 Selection of Locations and Numbers of Samples

The areal extent of the samples (including the number collected and location of the sampling points) in a particular area or medium of interest impacts the selection of COPCs, the calculation of EPCs, and consequently the risks estimated for a site. Generally, sample collection at each area of interest or site should reflect actual site conditions and should include areas that contain the most significant contamination or exposure problems. At WOD Site, 12 monitoring wells encompass the disposal area on all sides and establish several sampling depth intervals. Older groundwater data were used to identify where data gaps existed and resulted in the installation of additional wells where needed. All groundwater wells were sampled in 2003 within a two month timeframe, which provides a representative snapshot of current groundwater conditions. While earlier investigations provided sufficient soil samples to support focused removal efforts, the supplemental soil samples collected in this investigation provided better coverage throughout the source area, in addition to indicating areas near the boundaries of site contamination. Therefore, the objectives of the Supplemental RI were met in terms of obtaining adequate numbers and locations of samples to fill in data gaps.

Surface water samples where not necessary to collect for the reasons noted in Section 7.4.

7.7.1.2 Data Collection Impacts on Selection of COPCs and Risks

While the extensive additional sampling coverage in the Supplemental RI made it unlikely that the areas of highest contamination were missed, a different potential problem could occur if too few samples were collected as background samples. There were adequate numbers of background soil samples taken to achieve statistical power in comparing site to background, but this was not the case for groundwater because of the requirement that background groundwater samples must be obtained from wells located immediately upgradient of the site rather than just anywhere in the regional area where contamination due to site-related activities was not plausible. There were only two upgradient groundwater samples collected in 2003, which was inadequate to allow background tests to confidently demonstrate evidence of metals that should be eliminated as COPCs because of similarity to background levels. Therefore, only a qualitative comparison of site versus background could be performed for metals in groundwater.

Metals found in groundwater that are not actually site-related could be selected as COPCs and site-related human health risks could be overestimated if any of the metals which are risk drivers (namely

arsenic, chromium, iron, or manganese) are attributable to background conditions. However, arsenic, chromium, and lead were not detected in upgradient samples and upgradient levels of manganese and iron were several orders of magnitude less than the maximum levels found downgradient or within the WOD site. In addition, the location of highest concentrations of BTEX and naphthalene in groundwater (WFF15-GW7) is the same as that where the highest levels were found for manganese and lead, and arsenic and iron levels were also in the top 3 ranked concentrations among WOD groundwater samples at this location. These findings are consistent with the hypothesis that reducing conditions associated with contaminant degradation might have enhanced the dissolution of naturally occurring metals from the geologic formation at one particular location, given that none of these metals were found at levels statistically greater than background in subsurface soil. Across the entire site, groundwater risks may be generally overestimated for metals because very few samples revealed elevated levels of specific metals in groundwater. In addition, maximum levels of arsenic and iron in groundwater occurred at locations removed from the vicinity of the location of BTEX groundwater detections, which is not inconsistent with the possibility that some detections of these metals might be naturally occurring as opposed to site-related.

7.7.1.3 Uncertainties Regarding the Selection of the EPC

Other uncertainties exist regarding selection of a concentration for input into the quantitative risk assessment. The use of the exposure point concentration to estimate risk is generally regarded as a conservative estimate since this entails using either the upper 95 percent confidence limit on the arithmetic mean (based on normal or log-transformed data distribution) or the maximum concentration. The choice of the exposure point concentration as the value for input into the risk assessment generally lowers the chances of underestimation of the actual risk present in a pathway at a particular area of interest to a potential receptor.

While the use of upper 95 percent statistical confidence limit on the mean may overestimate the average exposure point concentration, a decision scheme recommended in recent guidance (EPA, 2002b) was followed that reduced the degree of overestimation. Chebychev UCL estimates were generated as appropriate to each situation where the number of samples was small, the log-standard deviation was large, or when the data were non-parametrically distributed. In such cases, the traditional approach would have employed the H-distribution and would have generated unrealistically high UCLs greater than the maximum detected concentration. The newer approach successfully produced more reasonable estimates that were less than the maximum detected value in most cases.

The ability (power) of the W test to be able to correctly identify genuine differences between the shapes of a sample population versus a reference normal or lognormal population is reduced when too few samples

are collected. If an incorrect distributional assumption is made based on this test, this could lead to an over- or underestimate of the upper 95 percent concentration, which in turn would create some additional uncertainty as to whether the calculated risk is a reasonable approximation of high end exposure. If fewer than 5 samples were available, the distributional tests were not considered significant and the exposure point concentration was selected as the maximum value. The Supplemental RI included many samples of each medium, so this situation only occurred for one analyte. Groundwater data for chromium consisted of less than 5 samples, which impacts risk uncertainty because chromium was a noncarcinogenic risk driver.

Specific uncertainties are associated with low frequencies of detection for several substances that were contributors to groundwater cancer risks or noncancer HIs, in particular, detection frequencies of 1/12 (8 percent) for tetrachloroethene, 2/12 (17 percent) for benzene, and 1/8 (12 percent) for arsenic. Because UCL calculations assumed all non-detected values were positives of magnitude equal to one-half the sample quantitation limit, the resulting 95 percent UCL estimates that were adopted as the EPCs for these substances could be overestimated and the true mean of the groundwater concentrations might be somewhat lower than these EPCs would suggest. However, the degree of overestimation is not large because the maximum positive results were generally greater than 10 times the assumed one-half detection limit values. On the other hand, the EPC for chromium was based on the maximum value as opposed to a statistical UCL, but use of the maximum represents another large source of uncertainty because only one data point is being relied upon to generate an estimate of the overall potential exposure concentration.

7.7.1.4 Uncertainties in Laboratory Data Quality

Validated laboratory data were used to calculate EPCs for groundwater, surface soil, and soil* (mixture of surface and subsurface soil). Established data validation procedures were applied to define analytical uncertainties in terms of qualifying data as inaccurate or imprecise and to eliminate data points that are unusable for risk assessment. This treatment does not eliminate all uncertainty but focuses attention on potential areas of concern regarding accuracy, precision, and data gaps.

7.7.1.5 Uncertainties in Risk-Based Screening Levels

The use of single-route (ingestion) risk-based screening concentrations (RBCs) may lead to the underestimation of risks since these values do not account for the additive effects across various exposure pathways. In particular, the dermal contact and inhalation pathways are not quantitatively accounted for in the benchmark RBCs used to select or eliminate COPCs in the risk assessment. However, inhalation of outdoor air containing concentrations of organics volatilizing from groundwater or

particulate dusts generated from windblown soils are each considered very minor contributions to risk compared to the ingestion pathway.

However, the potential inaccuracy from using ingestion-based RBCs to extrapolate exposures from inhalation of VOCs during showering or dermal contact exposures is somewhat greater. Showering exposures are accounted for via a factor of two adjustments in the Region 3 RBCs, which is generally protective for most, but not all cases. In addition, it is not necessarily true that RBCs based on threshold risks due to ingestion are protective for all dermal contact exposures because of the broad range of variation in GI absorption factors, which alters the effective dermal toxicity factor, and permeability constants, which alter the effective dermal dose. However, the likelihood of underestimating the number of potentially significant COPCs based on using ingestion-based RBCs is mitigated in most cases because Region 3 adjusts the RBC screening benchmarks to a conservative endpoint derived from a target HI of 0.1 for noncarcinogens and a target risk of 1×10^{-6} for carcinogens, which incorporates one or two orders of magnitude, respectively, as a safety factor into the threshold risks associated with the adjusted RBCs.

There is uncertainty due to the lack of risk-based screening and risk estimation for indoor air exposure to VOCs from vapor intrusion. This type of exposure could occur only if land use changes and future buildings or dwellings were constructed within the WOD area, which is adjacent to an active runway. To evaluate this uncertainty, groundwater maximum contaminant levels were compared to DEQ Voluntary Remediation Program (VRP) screening levels for volatilization from groundwater to indoor air. Appendix I, Part 1 presents the results of risk-based screening for groundwater vapor intrusion based on DEQ VRP Risk Assessment Guidance, Table 2.10 for unrestricted indoor air exposure. Based on this screening, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene exceeded DEQ's Tier II screening criteria and could be considered COPCs for the vapor intrusion pathway. Therefore, vapor intrusion risks were estimated for 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene assuming groundwater EPCs of 170 ug/L and 74 ug/L, respectively, using EPA's Johnson and Ettinger spreadsheet model, GW-SCREEN (version 3.0). Because of varied topography, the model was run twice to account for varying depth to groundwater – 12 feet as a worst case for shallowest depth, and 21 feet as recently measured in the vicinity of the most contaminated well. Appendix I, Part 1 presents the results of spreadsheet modeling for receptor risks from groundwater vapor intrusion. The spreadsheet model estimated HIs for both COPCs to be less than the target risk level (HI of 1), so in conclusion no significant adverse effects from vapor intrusion would be expect in the event that future land use changes at the WOD site.

Benzo(g,h,i)perylene and phenanthrene were detected in soil. Although published RfDs and RBCs were not available for these substances, surrogate screening RBCs were adopted using fluoranthene, a similar PAH compound associated with published RfD and RBC values. Phenanthrene and benzo(g,h,i)perylene

were both found to be present below the derived screening RBCs and so were not selected as a COPCs. Accounting for potential noncancer risks in this manner reduces the chance of underestimating risks from compounds without published toxicity factors.

7.7.2 Uncertainties Associated with Exposure Assessment

Major uncertainties associated with Exposure Assessment are listed below.

7.7.2.1 Exposure Scenarios

The likelihood of the occurrence of the defined exposure scenarios is a source of uncertainty. The future anticipated land use at WOD Site is expected to remain as NASA airfield and related light industrial activities. Likely potential receptors under this land use scenario include industrial workers or construction workers. Additionally, exposures to groundwater, soil*, and surface soil were evaluated for a hypothetical child and adult resident. This was done in order to generate an upper bound to risks from all potential uses of groundwater that is consistent with EPA and Commonwealth of Virginia standard guidelines. The degree of exposure to contaminants from the residential scenario would be greater than with other exposure scenarios; however, the continued use of the land as an airfield is anticipated and the development of the area for residential purposes is extremely unlikely.

By assessing the potential risks under a hypothetical residential exposure scenario, the risk assessment can be used to generate standards for protectiveness that are assured to encompass the full range of possible exposures that might occur at the site. However, standards for protectiveness which are based upon residential scenarios would be overly conservative if applied only to prevent adverse health risks in the situation of industrial and construction exposure scenarios. In addition, the assumption that shallow WOD groundwater (Columbia Aquifer) would be developed as a tap water source for future residences is unlikely because the lower Yorktown aquifer is more productive and use of the shallow Columbia Aquifer is discouraged and restricted by the Commonwealth of Virginia under a groundwater management program administered by the VADEQ.

The future exposure scenario contains an assumption that soils at depths less than 15 feet could eventually become a source of routine human exposure. While future construction of roads, landscaping of development areas, or excavation of typical basements for buildings and residences might result in mixing and redistribution of shallow subsurface soils, disturbance of soil below the 10 or 15-foot depth of a typical basement excavation would be improbable and hence VADEQ guidelines recommend evaluating risks associated with direct contact soil exposure only for samples from depths less than 15 feet. Therefore, it was appropriate and realistic to exclude five subsurface soil samples that were

collected at depths below 15 feet from the risk assessment. This is a very minor source of uncertainty because, if the five omitted samples were to be included in the total soils data set, then changes to cancer risks would only occur in the second significant digit.

7.7.2.2 Exposure Equations

There are limitations to using various models and equations to estimate exposure doses or contaminant concentrations. For example, the use of modeled concentrations (i.e., generated fugitive dust concentrations and generated volatile emissions) in place of monitored values may not be indicative of actual site conditions during exposure. Exposure to fugitive dust conservatively assumes that potential receptors will be exposed to the same concentration indoors as outdoors (a very conservative assumption), that soils within an area have unlimited erosion potential, that emissions can be estimated from mean annual wind speed and vegetative cover, and that dispersion concentrations can be estimated from source area, downwind distance to receptors, and region-wide meteorological factors. These uncertainties were partially offset by the calculation of a site-specific particulate emission factor (PEF) using defined site characteristics and assumptions provided in EPA's Soil Screening Guidance (EPA, 1996c). The effect of the uncertainties using the fugitive dust model is not expected to be significant, because carcinogenic and noncarcinogenic risks estimated using the fugitive dust model were several orders of magnitude below levels of concern in the media of interest.

There is uncertainty in whether the risk assessment modeling of exposure for a construction worker to volatile airborne emissions from pooled groundwater within an excavation is sufficiently representative and protective for all types of future construction activities. This RI report estimated risks to the construction worker (non-cancer risks in Section 7.6.4.3 and cancer risks in Section 7.6.5.3) and indicated no adverse impacts were expected, while the model calculations were performed in accordance with the approved work plan, which referenced ASTM Guidance (Designation E 1739–95).

The ASTM model assumes a volatilization process consistent with conditions representative of a fairly wide and deep type of excavation (such as a basement) where pooled groundwater would occur at the bottom and wind speeds would not be greatly attenuated compared to more stagnant wind conditions that would occur within a more narrow trench-style excavation, similar to those where utility work is conducted. An alternative model was developed by DEQ, which is more conservative than the ASTM model for VOC vapor exposures to utility workers within a narrow trench.

To investigate the uncertainty in whether the ASTM modeling results were adequately protective for a future utility worker in a trench, the DEQ spreadsheet trench exposure model was run and results are provided in Appendix I, part 2. The groundwater EPCs for contaminants were input into DEQ's VRP Table

3.7, and the output modeled air concentrations were converted to units of pg/m3 to facilitate later calculation of risks. The exposure assumptions for the DEQ model were a trench width of 3 feet, length of 8 feet, and depth of 15 feet, with a depth from ground surface to groundwater of 21 feet. Exposure assumptions specific to the utility worker are presented in Appendix I, Part 2, including an exposure time of 8 hours per day, frequency of 20 days per year, and duration of 1 year, with a breathing rate of 3.3 m^3/hr. The associated cancer and non-cancer risks are presented in tables in Appendix I, Part 2, and the estimated risks to workers in a trench were below target risk levels, with cancer risks in the 10^{-9} range and the total HI in the 10^{-2} range. Therefore, no adverse effects are expected for future construction workers exposed to vapor emissions during either basement excavation activities or utility trench work at the WOD site.

The model for dermal exposure to soil assumes that only a very thin, constant thickness layer of soil is available for contaminant transfer to the stratum corneum and that a constant amount of contaminant, proportional to the soil concentration, will be absorbed per unit area of skin and per exposure event. However, adherence to skin varies with such factors as particle size, soil type, and organic carbon content. As estimated by EPA (1992f), the absorbed dermal dose could vary by as much as a factor of 50 from the model estimates, even assuming that activity patterns lead to the exposure duration applied in the experimental trials used to develop absorption factors. Because of the lack of reliable data regarding dermal absorption factors, the risk assessment provides default soil absorption factors for all substances except chemicals for which well-documented absorption factors are available (arsenic, PCBs, and PAHs). Even so, considerable uncertainty exists with the accuracy of estimates applied for these substances.

The chemical-specific parameters such as Koc were literature-derived values that are measured under conditions that may or may not be representative of on-site conditions. Parameters such as vapor pressure and solubility were not always obtainable at the desired temperature. Parameters such as the Kd for metals are strongly influenced by other factors such as the chemical form of the metal, the soil type, and pH.

Prediction of absorption rates for lipophilic compounds is difficult due to, among other reasons, the possibility of a second absorption pathway that depends on the lipid content of the stratum corneum at the application site. Experimental determination of absorption rates indicates that interspecies differences are considerable, which, along with other variability's related to condition and age of skin, differences in lag time, and site of application effects, yields appreciable uncertainty in estimated dermal exposures by using published chemical-specific permeation functions. In addition, literature data indicate a variation by as much as a factor of 300 in chemical absorption rates for skin in different anatomical areas of the body. It should also be noted that children generally have greater absorption rates than adults and their activity patterns often result in greater soil-to-skin adherence factors.

Uncertainties exist in the exposure model for the inhalation of volatiles during showering such as chemical-specific rates of volatilization, droplet size, and droplet residence time in the shower. Most of the inputs into the models were considered conservative; therefore, the output may overestimate the exposure for this route. While the Foster and Chrostowski shower model estimates were not constrained by Henry's Law principles, estimated vapor concentrations in the shower relative to concentrations in the water were relatively low using the input concentrations obtained from WOD Site groundwater and do not approach or surpass the Henry's Law equilibrium partition coefficient for any COPC modeled.

Uncertainties associated with the lack of groundwater modeling at the site include the assumption that current conditions are indicative of future concentrations of contaminants. Contaminants may increase (due to migration, sediment loading, or chemical transformation) or decrease (due to migration or transformation) over time and vary from area to area. Soil-to-groundwater pathway screening was conducted (see Section 6.4.1) to determine if any substances might be present at levels sufficient to leach into groundwater. This analysis indicated that no substances are anticipated to leach from soil to produce noteworthy groundwater concentrations in the future.

Exposure assumptions can add uncertainty into the risk assessment process based on input values selected for each exposure route. For example, not all people weigh 70 kilograms, drink 2 liters of water per day, and live at the same residence for 30 years. The rationale for each assumption was provided in each table of input parameters. Receptor characteristics, such as age and body weight, were based on published values. Conservative values (based on reasonable maximum exposure data or professional judgment) were used in combination with average values. The rate of incidental ingestion of soil is difficult to predict and depends upon activity patterns and personal habits. A default rate of ingestion of 50 mg soil per day was assumed for the industrial worked at the WOD. Recent changes in the EPA Region 3's risk assessment screening background information memorandum have adopted a new 100 mg/day worker ingestion rate as an outdoor worker exposure assumption for screening of potential COPCs. Although the EPA Region 3 website does not expand this recommendation into explicit guidance for use in quantitative risk assessments, it is relevant that the WOD risk assessment assumed activity patterns for industrial workers including outdoor groundskeepers. At the WOD, increasing the soil ingestion rate by a factor of two would be considered within a plausible range of exposure assumptions for the industrial receptors. Applying this change to the risk assessment would double the industrial worker's soil ingestion risks, but the net result would be that risks would still fall within the acceptable risk range.

7.7.3 Uncertainties Associated With Toxicity Assessment

7.7.3.1 RfDs and SFs

There is uncertainty associated with the RfDs and SFs. The uncertainty results from the extrapolation of animal data to humans, the extrapolation of carcinogenic effects from the laboratory high-dose to the environmental low-dose scenarios, and interspecies and intraspecies variations in toxicological endpoints caused by chemical exposure. The use of EPA RfD values is generally considered to be conservative because the doses are based on no-effect or lowest-observed-effect levels and then further reduced with uncertainty factors to increase the margin of safety by a factor in the neighborhood of 10 to 1,000 fold.

There are uncertainties regarding nonthreshold (carcinogenic) effects extrapolation, from the high doses administered to laboratory animals to the low doses received under more common human exposure scenarios. Uncertainties due to short-time toxicological study predictions of long-term effects are also present. Additionally, there is considerable interspecies variation in toxicological endpoints used in characterizing potential health effects resulting from exposure to a chemical, and there is considerable variability in sensitivity among individuals of any particular species.

The RfDs and SFs of some chemicals have not been established, and therefore toxicity could not be quantitatively assessed. In most cases, where RfDs were unavailable for carcinogens, the carcinogenic risk is considered to be much more significant since carcinogenic effects usually occur at much lower doses.

The uncertainty associated with the dermal exposure is high because of the derivation of the dermal slope factor and reference dose. The dermal toxicity factors are based on default oral absorption factors. This can result in an overestimation of the toxicity factors. In general, dermal exposures at WOD Site did not drive the carcinogenic or noncarcinogenic risks; therefore, the effects of this uncertainty are expected to be minimal.

As discussed in Section 7.5, established RfDs have an inherent amount of uncertainty. Uncertainty factors for RfDs used in this risk assessment are presented in Tables 7.29 through 7.32. Some chemical specific uncertainties should be noted as follows:

Although the accepted basis for evaluating risk associated with exposure to arsenic is to assume it is a carcinogen, there is uncertainty whether carcinogenic effects are the primary health effects expected to be manifested upon exposure to arsenic. There is some scientific information to indicate that humans are capable of metabolizing arsenic to expedite its elimination from the body (ATSDR, 2000). (Specifically,

the body methylates the arsenic to form monomethyl arsenic and dimethyl arsenic.) There is a limited capacity for the body to metabolize methylate arsenic, but this limit is generally reached when the body's intake of arsenic approximately exceeds 500 µg/day. Generally, concentrations of arsenic at the areas and media of interest at WOD Site would be expected to correspond to levels that are well within the body's ability to metabolize arsenic. On the other hand, arsenic has been associated with a variety of cancers in epidemiological studies. This adds to the uncertainty regarding carcinogenic risks associated with arsenic exposure.

In nature, chromium (III) predominates over chromium (VI) (Langård and Norseth 1986). Little chromium (VI) exists in biological materials, except shortly after exposure, because reduction to chromium (III) occurs rapidly. Hexavalent chromium can also be transformed to trivalent chromium. However, hexavalent chromium is more soluble, and chromium in water samples is often found to be hexavalent. A usable database of chromium speciation data was not available for the WOD site; therefore, in performing RBC screening it was conservatively assumed that chromium is present in the hexavalent form. Chromium was selected as a COPC in groundwater, so associated risks may be overestimated if chromium (III) is present instead of chromium (VI).

Incidental ingestion of iron exceeded EPA's hazard quotient threshold of 1.0 under certain exposure pathways and receptors. Currently, no toxicity values for iron are published in (IRIS) or in (HEAST). The oral reference dose used to evaluate exposures to iron was obtained from the current EPA Region 3 RBC tables. This value is based on an allowable daily intake and not on an adverse effect level. In addition, iron is considered an essential nutrient. Consequently, iron may not warrant serious health concerns.

To minimize uncertainty, toxicity factors (SFs and RfDs) should be obtained only from published sources (IRIS, HEAST, and NCEA) because these sources represent peer-reviewed and nationally accepted estimates. However, in this risk assessment, the SF for tetrachloroethene was adopted from an outside source, California's Environmental Protection Agency (CAL-EPA). Although the toxicity value utilized was recommended in the June 17, 2003 update to EPA's risk-based concentration table, CAL-EPA is not generally considered a nationally accepted source for toxicity values. Since the CAL-EPA SF of 0.54 is 27-fold greater than the value previously accepted by EPA (0.02), this contributes substantial uncertainty to the cancer risk estimates generated for tetrachloroethene.

7.7.4 Uncertainties Associated with Risk Characterization

Major uncertainties associated with risk characterization are listed below.

- ICRs and HIs are summed for all potential COPCs and for all applicable routes of exposure. Summing the risks implies that no antagonistic or synergistic effects exist between chemicals. It also assumes that similar mechanisms of action and metabolism are prevalent. Therefore, the use of this approach may either underestimate or overestimate the risks, depending on the chemical-specific interactions, which cannot be predicted. The direction of the uncertainty cannot be defined, but the methodology used is based on current EPA guidance.

- The chemicals of concern (COCs) and their associated cleanup levels for remedial actions are focused only on site-related substances; however, there is a conceivable potential for adverse effects not only from exposure to site-related substances (i.e., COPCs) but also from risks due to non-site-related background substances. Aluminum, arsenic, barium, cadmium, chromium, copper, iron, lead, manganese, thallium, vanadium, and zinc concentrations were demonstrated to be statistically not greater than background and were therefore eliminated as COPCs from soil*. In addition, statistical tests revealed that aluminum, arsenic, iron, manganese, and vanadium concentrations were not greater than background in surface soil. A qualitative screening assessment of risks from exposures to the background levels of metals at the WOD Site can be performed by comparing their WOD Site soil EPCs (found in Appendix G, distributional analysis tables) versus the unadjusted RBCs, which are based upon a 10^{-6} cancer risk or a HQ of 1.0. In WOD surface soil and soil*, these metals, except for arsenic, displayed EPCs that were each less than one-half their respective RBCs at a HQ of 1.0, while the EPCs for arsenic were less than the RBC at a cancer risk level of 10^{-5}. This indicates that the potential for adverse effects from these background metals is negligible for ingestion exposures, although there is need for considering uncertainty regarding risk from dermal contact with soil because RBCs do not account for this pathway of exposure. For the exposure scenarios described in Section 7.4, dermal contact with relatively dry soil having low soil-to-skin adherence factors (see values presented on RAGS D Table 4s) would yield dermal contact risks for these background metals that are less than corresponding ingestion risks for the same receptors under the same conditions of frequency and duration of exposure. Therefore, in soils at the WOD Site, there is a low likelihood of any significant contributions from background metals concentrations to overall receptor risks.

- Risks to any individual may also be overestimated by summing multiple assumed exposure pathway risks for any single receptor. Although every effort was made to develop reasonable scenarios, not all individual receptors may be exposed via all pathways considered.

- The IEUBK and the adult lead model account for the multimedia nature of lead exposure, incorporates absorption and pharmacokinetic information, and allows the risk manager to consider the potential distributions of exposure and risk likely to occur at a site (the model goes beyond providing a single point estimate output). Although uncertainties are associated with blood-lead

modeling using these models, the uncertainties are considered lower than those that conceivably would result from similar lead evaluations performed using a traditional toxicity slope-based approach. Important uncertainties and limitations in the use of the IEUBK model are listed below.

- The IEUBK model is predictive of blood lead for residential children in the range of 6 months to 7 years of age, which typically is considered to be a more sensitive subpopulation than adults. The model does not apply to adults in either residential or industrial settings. For this reason, the adult lead model could also be considered, which considers the most sensitive adult subpopulation, a pregnant worker. However, lead was not selected as a COPC in any medium to which industrial workers would be potentially exposed.

- Blood-lead variability is characterized by a single number, the geometric standard deviation, which is set to a default value of 1.6 in the IEUBK model and 1.8 in the adult lead model. This value represents the aggregate uncertainty in all sources of population variability, including biological, uptake, exposure, sampling, and analytical components.

- Child blood-lead level predictions obtained using the IEUBK model reflect only the contributions of sources entered into the model and do not take into account any existing body burden that may be the result of prior exposures or any exposures that may have taken place at alternate locations away from the household or neighborhood level, such as parks or daycare centers.

7.8 SUMMARY AND CONCLUSIONS

Site-specific carcinogenic and noncarcinogenic risks were estimated for potential receptors at the WOD site. Potential receptor scenarios included current and future industrial workers, future construction workers, and hypothetical future residential users. No change in the future use of the site is likely as it is near an active runway that is an important part of the future facility plan for the installation.

The future residential scenario is highly unlikely not only due to the location of the site but it also assumes the use of the shallow aquifer for domestic purposes. Public water is available at the site and use of the shallow aquifer is highly unlikely. The shallow aquifer is not as productive as the lower aquifer present in the area and the use of the shallow aquifer is restricted by the state. As discussed in Section 2.3.4, groundwater use in the area is controlled and allocated through a permitting program administered by the state under the Virginia Groundwater Management Act. The site area is located within a Critical Groundwater Area as designated by the Commonwealth of Virginia and the use of the shallow aquifer is restricted through the issuance of use permits. The SWCB administers the permit program and consults with the Department of Health and local commissions in evaluating permit requests. The

Accomack/Northampton County Water Supply Committee has been established as a local commission to work with and advise the state in evaluating permit applications. This committee meets regularly and has established local restrictions on additional withdrawals of groundwater from the shallow aquifer and require monitoring programs to ensure that existing groundwater users are not impacted by new deep aquifer withdrawals.

7.8.1 Noncarcinogenic Risks

Noncarcinogenic risks did not exceed an HI of 1.0 for any target organ group for receptors potentially exposed to surface soils or total soils (soils*), including the industrial worker, construction worker, residential child, or residential adult. Similarly, noncarcinogenic risks did not exceed an HI of 1.0 for any target organic group for the construction worker potentially exposed to groundwater.

Target organ group HIs greater than 1.0 were estimated for potential domestic use of the shallow groundwater by hypothetical future child and adult residents. The risk drivers include arsenic, iron, manganese, aluminum, chromium, 4-methylphenol, xylene, 1,2,4-trimethylbenzene, and naphthalene.

7.8.2 Carcinogenic Risks

Carcinogenic risks were within or less than the acceptable risk range (1×10^{-4} to 1×10^{-6}) for the current and future industrial worker, future construction worker, future child resident, future adult resident, and future lifetime resident potential exposure to surface soils and total soils (soils*)

Carcinogenic risks associated with potential future construction workers exposed to groundwater were less than the acceptable risk range. The risk for hypothetical future child and adult residents exposed to groundwater for domestic purposes, slightly exceeded the acceptable risk range (1.9×10^{-4} and 2.4×10^{-4}, respectively), which resulted in an unacceptable lifetime estimated carcinogenic risk. The primary risk drivers were arsenic, benzene, tetrachloroethene, chloroform, and bis(2-ethylhexyl) phthalate. The most significant risks were associated with the potential ingestion of untreated shallow groundwater and the arsenic levels detected in the groundwater. Risks associated with arsenic were the only risks greater than 1×10^{-4}. Eliminating arsenic, results in an overall risk within the acceptable risk range.

In conclusion, unacceptable carcinogenic and noncarcinogenic risks were associated with only hypothetical future residential use of groundwater.

8.0 ECOLOGICAL RISK ASSESSMENT (ERA)

As described the work plan (TtNUS, 2003a), surface soil analytical data collected under this Supplemental RI (including the soil/sediment samples collected in the marsh area) first were combined with the existing 2001 RI data set and then compared to the existing data set. This comparison was conducted to determine if an Ecological Risk Assessment (ERA) needed to be conducted for the surface soil data, since an ERA was conducted on the existing data set. Regardless of the results of this comparison, however, the surface soil samples collected in the marsh area were compared to sediment criteria in this ERA to conservatively evaluate potential risks to aquatic receptors should the soil/sediment from the marsh area be transported to a water body (i.e., Little Mosquito Creek).

Table 8.1 presents the historical (2001 RI), new (Supplemental RI), and combined data sets. Several VOCs were detected in the new data set whereas no VOCs were detected in the historical surface soil samples. Also, a few SVOCs were detected in the new samples but were not detected in the historical samples. The SVOCs that were detected in the historical samples were generally detected at greater concentrations than the current samples. In general, the metals were detected at similar concentrations in the new and historical samples. However, cadmium, mercury, and thallium were detected in the new samples but were not detected in the historical samples. Therefore, although the concentrations in the new samples were similar to those in the historical samples for the detected chemicals, several chemicals were detected in the new samples that were not detected in the historical samples. Because those additional chemicals were not evaluated in the previous ERA, it was determined that an ERA should be conducted to evaluate risks to soil receptors as part of this Supplemental RI.

The goal of this Screening-Level Ecological Risk Assessment (SERA) is to determine whether adverse ecological impacts are present as a result of exposure to chemicals released to the environment through historical activities at the Waste Oil Dump (WOD). This SERA contains information that will enable scientists and managers to conclude either that ecological risks at the site are most likely negligible, or that further information is necessary to evaluate potential ecological risks at the site.

The Ecological Risk Assessment (ERA) methodology used at the site follows the guidance presented in the following guidance documents:

- Final Guidelines for Ecological Risk Assessment [United States Environmental Protection Agency (USEPA), 1998].

- Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (USEPA, 1997a).

- Navy Policy for Conducting Ecological Risk Assessments [Department of Navy (DON), 1999].

Figure 8.1 presents the Ecological Risk Assessment Tiered Approach.

This ERA consists of Steps 1, 2, and 3a of the eight steps required by the above mentioned guidance. The first two steps are the SERA. In the SERA, conservative exposure estimates are compared to screening levels and threshold toxicity values. The SERA includes the following considerations:

- Problem formulation
- Ecological effects evaluation
- Exposure estimate
- Risk calculation

Step 3a is the first step of the baseline ecological risk assessment (BERA) and consists of refining the conservative exposure assumptions following Steps 1 and 2. Step 3a is meant to focus the ERA process on the chemicals of greatest concern at a site and is a valuable step to be used in risk management decision making. Steps 3b through 7 may be conducted if additional evaluations or investigations are warranted after step 3a. Step 8, Risk Management, is incorporated throughout the ERA process and includes the cooperation with the VADEQ and resource trustees.

8.1 PROBLEM FORMULATION

Problem formulation is the first phase of an ERA and discusses the goals, breadth, and focus of the assessment. It includes general descriptions of the WOD with emphasis on the habitats and ecological receptors present. This phase also involves characterization of site-related chemicals, chemical sources, migration routes, and an evaluation of routes of chemical exposure. The assessment and measurement endpoints to be evaluated are also selected. Finally, a conceptual model is developed that describes how chemicals associated with the site in question may come into contact with ecological receptors. The following sections provide more detailed descriptions of the steps completed as a part of the problem formulation.

8.1.1 Environmental Setting

The Environmental Resources Document (Occu-Health, Inc., 1999) and the Work Plan (TtNUS, Inc., 2003) present detailed descriptions of the terrestrial and wetland habitats present at the WFF and the WOD. The following sections summarize those descriptions.

WFF is comprised of the Main Land (ML), Main Base (MB), and Wallops Island (WI). The vegetative zones on the ML and MB are diverse and extensive, and proceed east to west from marsh to thicket to forest (Occu-Health, Inc., 1999). Habitats within WFF, including ML, MB, and WI, include dune systems, island forest, salt marsh, upland grasslands, and forest, providing food, shelter, breeding, and nesting grounds to a diverse community of species.

The WOD is located within the MB area. Although a survey of terrestrial species present on the WFF has never been conducted, documentation is available for Assateague Island. Assateague Island neighbors WFF, has similar habitats and settings, and is believed to contain many of the same species. Surveys conducted at Assateague Island have revealed the presence of mammals including white-tailed deer (*Odocoileus virginianus*), meadow voles (*Microtus pensylvanicus*), raccoons (*Procyon lotor*), and grey squirrels (*Sciurus carolinensis*); reptiles/amphibians including fowler's toad (*Bufo woodhoussei*), green tree frog (*Hyla cinerea*), black rat snake (*Elapha obsoleta*), hognose snake (*Heterodon platyrhinos*), and box turtle *(Terrapene caolina*); birds including shorebirds such as sanderling (*Calidris alba*), short-billed dowitcher (*Limnodromus griseus*), and various species of tern (*Sterna sp.*) and gulls (*Larus sp.*), songbirds and other avian species such as mockingbirds (*Mimus sp.*), robins (*Turdus migratorius*), and starlings (*Sturnus vulgaris*); and plants including common terrestrial vegetation and wetland species.

Waste Oil Dump

The WOD is located in the northeast quadrant of the MB and is about 160 feet north of the end of Runway 17-35 (Figure 4.1). It extends in a northerly direction over a peninsula-like feature toward Little Mosquito Creek. The northern, eastern, and western boundaries of the site are steep slopes where surface runoff flows into low-lying marshes that border an unnamed tributary to Little Mosquito Creek. The WOD is heavily vegetated with grasses, shrubs, and saplings.

There are no surface water bodies within or immediately adjacent to the WOD. Most of the WOD is relatively flat, with the majority of precipitation expected to infiltrate into the ground. The northern, eastern, and western boundaries of the site are formed by steep slopes that direct non-infiltrated surface runoff into low-lying marshes that border an unnamed tributary to Little Mosquito Creek and Little Mosquito Creek. The closest stream to the WOD is the unnamed tributary to Little Mosquito Creek that is located about 160 feet to the west of the WOD. This creek flows adjacent to and between Sites 14 and 15, and carries drainage and permitted discharges from the MB to Little Mosquito Creek. Approximately 300 feet of marshland to the north and east separate the WOD from Little Mosquito Creek. The unnamed tributary and Little Mosquito Creek are being studied under the RI for Sites 14 and 15 which have a greater potential direct link to these surface water bodies. The Site 14 and 15 RI includes a BERA as part of its scope.

8.1.2 Potential Sources of Contamination/Stressor Characteristics

The WOD was reportedly used for the disposal of waste oils, and possibly solvents. This included the excess waste oil from the fire training activities for a period from the 1940's through the 1950's (Versar, Inc., 2001). Records of the types and quantities of materials disposed at the site and the duration of this activity were not available.

Section 5.0 of this document describes in detail the potential sources and the nature and extent of contamination at the WOD. Detections of VOCs, SVOCs, PCBs, and metals have been identified as chemicals potentially present at elevated levels at the WOD. Physical and chemical characteristics of contaminants may affect their mobility, transport, and bioavailability in the environment, including organic carbon partition coefficients, pH, octanol water partition coefficients, etc. Appendix H.1 presents toxicity profiles for the chemical constituents detected in the surface soil/sediment samples at the site and are qualitatively used to help evaluate ecological risks.

8.1.3 Potential Exposure Pathways

Based on historical site operations, the primary source of chemicals originated from the disposal of waste oil and solvents in the soil at the site. Terrestrial receptors may be exposed to chemicals in the surface soil. The contaminants could migrate through the soil into the groundwater and eventually into the sediment or soil of the surrounding marshland. Also, over time, soil erosion could lead to overland runoff down the slopes into the sediment of the surrounding marshland, and chemicals in the soil can enter the air through wind erosion and/or dust.

8.1.3.1 Surface Soil

Several groups of terrestrial ecological receptors can be exposed to chemicals in the surface soil. Invertebrates, such as earthworms, are exposed to chemicals as they move through the soil and ingest soil particles while searching for food. Plants are exposed to chemicals via direct contact as chemicals are absorbed through the roots, which may then translocate to different parts of the plants (i.e., leaves, seeds).

Small mammals, birds, reptiles, and amphibians may be exposed to chemicals in the soil via several exposure routes. They may be exposed by direct contact as they search for food or burrow into the soil. Exposure of terrestrial wildlife to chemicals in the soil via dermal contact is unlikely to represent a major exposure pathway because fur, feathers, and chitinous exoskeletons are expected to minimize transfer of chemicals across dermal tissue. Most small wildlife receptors are likely to have their greatest exposure to

chemicals in the soil via incidental ingestion of soil, and ingestion of plants and/or invertebrates that have accumulated chemicals from the soil.

Larger, predatory species, such as the red fox and red-tailed hawk, can be exposed (indirectly) to site chemicals in the soil by ingesting small mammals that have accumulated chemicals from the soil and food items.

8.1.3.2 Sediment

Ecological receptors can be exposed to chemicals in the sediment. Benthic invertebrates, amphibians, and reptiles can be exposed to sediment contamination through direct contact and incidental ingestion of contaminated sediment. Fish may also be exposed to sediment (and floodplain soil) contaminants during flooding events but their exposure will be much lower than the exposure for benthic invertebrates. Terrestrial wildlife may also be exposed to sediment contamination, although to a lesser degree, by direct contact and incidental sediment ingestion.

8.1.4 Endpoints

8.1.4.1 Assessment Endpoints

Assessment endpoints are an explicit expression of the environmental value that is to be protected (USEPA, 1997a). The selection of these endpoints is based on the habitats present, the migration pathways of chemicals, and the routes that chemicals may take to enter receptors.

The habitat within and adjacent to the WOD is diverse consisting of forested areas, grassy areas, and marshlands. For this ERA, the assessment endpoints include the protection of the following groups of receptors from a reduction in growth, survival, and/or reproduction caused by site-related chemicals:

- Soil invertebrates
- Terrestrial vegetation
- Insectivorous birds and mammals
- Herbivorous birds and mammals
- Benthic invertebrates
- Reptiles

The following paragraphs discuss why the above assessment endpoints were selected for this ERA.

Soil Invertebrates - Soil invertebrates include earthworms, the juvenile life stages of many insects, and other small organisms that directly inhabit the surface soil. These organisms are expected to be present in the soil in terrestrial habitats at the site. Soil invertebrates promote plant growth by aiding in the formation of soil and through redistribution and decomposition of organic matter. Soil invertebrates also serve as a food source for many mammals and birds. Contaminants can bioaccumulate from the soil into the tissue of soil invertebrates used as a food source by mammals and birds.

Terrestrial Vegetation - Terrestrial vegetation at the site consists of conifers, bushes, and tall grasses. These plants serve as a source of food and shelter for many organisms and help prevent soil erosion and excessive surface runoff. Plants can also bioaccumulate some chemical contaminants from the soil that can then be transferred to organisms that feed on plant tissue.

Insectivorous Birds and Mammals - Insectivorous birds and mammals (animals that consume insects and other invertebrates) present at the WOD are considered first-level carnivores, and they serve as a food source for higher trophic-level carnivores. Insectivorous birds and mammals may accumulate contaminants that are present in the food items they consume.

Herbivorous Birds and Mammals - Herbivorous birds and mammals (animals that consume only plant tissue) forage at the site. Their role in the community is essential because, without them, higher trophic levels could not exist. They may accumulate contaminants that are present in the plants they consume.

Benthic Invertebrates - Benthic invertebrates are similar to soil invertebrates in that they serve as a food source for higher trophic-level organisms (i.e., fish, amphibians, and birds). They can also accumulate some contaminants that can then be transferred to the higher trophic-level organisms when consumed.

Reptiles-Reptiles are present in the terrestrial areas at the site. These species feed primarily on invertebrates, plants, and small mammals. Reptiles are exposed to and can accumulate contaminants from the food items they consume or from the surface soil in which they live.

As indicated in USEPA (1997a), “it is not practical or possible to directly evaluate risks to all of the individual components of the ecosystem at a site. Instead, assessment endpoints focus the risk assessment on particular components of the ecosystem that could be adversely affected by contaminants from the site.” Therefore, the ERA focused on the endpoints that tend to yield the highest risks, which will account for endpoints that have lower risks.

Piscivorous mammals and birds were not selected as assessment endpoints because a complete exposure pathway from the soil to surface water where fish would be contaminated occurs infrequently.

Although sediment samples were collected in the marsh area surrounding the WOD, there was no standing water associated with the sediment samples. The sediment samples were, however, included in the soil data set to evaluate risks to terrestrial wildlife through the food chain. It is possible that fish may be exposed to chemicals in the soil/sediment at the base of the slope on an infrequent basis during flooding conditions because the unnamed tributary to Little Mosquito Creek is within 25 feet of the base of the slope. Because their exposure is infrequent, they will accumulate less contaminants from the soil/sediment than invertebrates. Therefore, fish were not selected as an endpoint because soil invertebrates have a much greater exposure to contaminants than fish and the potential risks to fish are being accounted for by evaluating risks to invertebrates. Similarly, piscivorous birds were not selected as an assessment endpoint for this ERA because shrews that consume soil invertebrates will have a much greater exposure to site contaminants than piscivorous birds consuming fish that are infrequently exposed to the site contaminants. Large carnivorous mammals and birds (e.g., red fox and red-tailed hawk) were not selected as assessment endpoints because the greatest exposure to site contaminants is expected to occur to small mammals and birds that ingest invertebrates and/or plants. That is principally because the site is small (approximately 3.5 to 4 acres) compared to the typical home range of carnivorous mammals and birds (several hundred acres). Omnivores were not selected as assessment endpoints because exposure to contaminants in plants is greatest for herbivores and exposure to contaminants in animals is greatest for insectivores. Therefore, risks to omnivores are accounted for by evaluating risks to herbivores and insectivores. Risks to large carnivorous and omnivorous mammals and birds are evaluated in the uncertainty section of this ERA. In addition, although amphibians may be present at the site they were not selected as an assessment endpoint because no methods are available to quantitatively evaluate risks to amphibians.

8.1.4.2 Measurement Endpoints

Measurement endpoints are estimates of biological impacts (i.e., mortality, growth and reproduction) that are used to evaluate the assessment endpoints. The following measures of effects were used to evaluate the assessment endpoints in this ERA.

- Mortality, growth, and/or reproduction of plants, soil invertebrates, and benthic invertebrates were evaluated by comparing chemical concentrations in surface soil and sediment to screening values designed to be protective of ecological receptors.

- Mortality, reproduction, and/or developmental effects of birds and mammals were evaluated by comparing estimated ingested doses of contaminants in plants, invertebrates, and surface soil to no-observed-adverse-effects-levels (NOAELs) and lowest-observed-adverse-effects-levels (LOAELs).

- Reptiles were evaluated by evaluating risks to birds and mammals because no methods are available to quantitatively evaluate risks to reptiles.

8.1.4.3 Selection of Receptor Species

Many receptors such as invertebrates and plants are adequately described in general categories such as invertebrates and vegetation. This is due to the nature of the threshold values and effects values that are typically used to characterize risk for such organisms. For vertebrate receptors, selection of particular species may be required so that intake through eating, drinking, and other routes can be estimated.

Ingestion is the primary route of exposure for most mammals and birds. The selection of species used to represent the receptor groups identified in Section 8.1.4.1 was based on considerations of their preferred habitat, body size, sensitivity, home range, abundance, commercial or sport utilization, legal status, and functional role (e.g., predators). To be conservative, chosen representative species have small home ranges. The availability of exposure parameters such as body mass, feeding rate, and drinking rate may also be a factor in selecting surrogate species. The following surrogate species were used for the food chain modeling, which is discussed in Section 8.3:

- Insectivorous mammal-Short-tailed shrew
- Insectivorous bird-American robin
- Herbivorous mammal-Meadow vole
- Herbivorous bird-Bobwhite quail

Receptor profiles for the above species are included in Appendix H.2.

8.1.5 Conceptual Site Model

A CSM in ERA problem formulation is a written description of predicted relationships between ecological entities and the stressors to which they may be exposed (USEPA, 1998). The CSM consists of two primary components: predicted relationships among stressor, exposure, and assessment endpoint response and a diagram that illustrates the relationships (USEPA, 1998). Figure 8.2 is a pictorial presentation of these relationships. At the WOD, the source of the chemicals is the disposal of waste oils and solvents on the ground. Therefore, the immediate exposure medium is the surface soil. Terrestrial plants, invertebrates, and vertebrates are exposed to the surface soil by direct contact, ingestion of soil and other food items. Some of the contamination may have migrated to groundwater, or have been transported to the marsh sediment via overland runoff. Eventually, some of the contamination may make its way to be the tributary of Little Mosquito Creek, and eventually to Little Mosquito Creek. Aquatic

receptors may be exposed to the chemicals after the chemicals are transported to aquatic environments. Additionally, site soil contaminants are transported to air via wind erosion and emission of VOCs. Terrestrial vertebrates are exposed to chemicals found in the air via inhalation. Although this pathway is possible, it is not the most significant pathway and is not evaluated in this ERA.

8.2 ECOLOGICAL EFFECTS DATA

The preliminary ecological effects evaluation is an investigation of the relationship between the exposure to a chemical and the potential for adverse effects resulting from exposure. In this step, conservative screening levels for toxicity of the chemicals to ecological receptors are compiled.

8.2.1 Terrestrial Plants/Invertebrates and Benthic Invertebrates

Risks to terrestrial plants/invertebrates and benthic invertebrates resulting from exposure to chemicals were evaluated by comparing the chemical concentrations in the surface soil and sediment to screening levels for those media (see Tables 8.2 and 8.3, respectively). The Region 3 BTAG criteria (USEPA, 1995) were used for this ERA because they were developed specifically for use within USEPA Region 3 to evaluate potential risks to ecological receptors. The Region 3 BTAG criteria are considered to be conservative values protective of the most sensitive organisms. These toxicity values are expressed in units of concentration because the media of concern are in intimate contact (direct exposure) with terrestrial plants/invertebrates and aquatic receptors. These criteria were supplemented with other values when BTAG criteria were not available.

8.2.2 Terrestrial Food Chain Modeling

The Region 3 BTAG criteria are not designed to evaluate risks to terrestrial wildlife through the ingestion of soil, sediment, plants, and/or invertebrates. Therefore, risks to terrestrial receptors for exposure to chemicals found in the surface soil were determined by estimating the Chronic Daily Intake (CDI) and comparing the CDI to Toxicity Reference Values (TRVs) representing acceptable daily doses in mg/kg-day. The TRVs were developed from NOAELs and LOAELs obtained from wildlife studies presented in Oak Ridge National Laboratory (ORNL) Toxicological Benchmarks for Wildlife: 1996 Revision (Sample et al., 1996) and supplemented with other toxicity information when necessary.

Appendix H.3 presents the TRVs for the mammals and birds that were used in the ERA and the sources of the TRVs. If a subchronic study was used to develop the TRV, the final value was multiplied by a factor of 0.1 to account for uncertainty between subchronic and chronic effects. Also, if only a LOAEL study was available, then the LOAEL was multiplied by a factor of 0.1 to obtain the NOAEL TRV.

8.3 EXPOSURE CHARACTERIZATION

In order to determine if a chemical has the potential to cause a risk to an ecological receptor, a chemical concentration or chemical dose was compared to the screening levels/TRVs. These chemical concentrations/doses are termed exposure point concentrations (EPCs). The following paragraphs indicate the EPCs that were used for each set of ecological receptors.

8.3.1 Terrestrial Plants and Invertebrates

Terrestrial soil invertebrates and plants can be exposed to contaminants in the surface soil through direct contact and/or ingestion. As indicated in Section 8.2.1, the screening values for these receptors are in units of chemical concentration in each medium. Therefore, the EPCs used for these receptors were the maximum chemical concentrations in each medium.

8.3.2 Aquatic Receptors

Benthic invertebrates can be exposed to contaminants in the sediment through direct contact and/or ingestion. As indicated in Section 8.2.1, the screening values for these receptors are in units of chemical concentration in each medium. Therefore, the EPCs used for these receptors were the maximum chemical concentrations in each medium.

8.3.3 Terrestrial Wildlife

The exposures to chemicals for mammals and birds are more complex than the exposures for plants and soil invertebrates and require evaluation of bioaccumulation of chemicals in various food items. Therefore, the EPCs for terrestrial wildlife were estimated in mg/kg-day using exposure dose equations. EPCs for terrestrial wildlife were only calculated for chemicals identified by EPA as bioaccumulative (USEPA, 2000).

Total exposure of terrestrial wildlife to chemicals of potential concern (COPCs) in soil (and associated food items such as plants and invertebrates) were determined for the surrogate wildlife species listed in Section 8.1.4.3 using the following equation:

$$CDI = \frac{[(Cf * IR) + (Cs * Is)] * H}{BW}$$

Where:

CDI	=	Chronic daily intake (mg/kg-day)
Cf	=	Chemical concentration in food - (see discussion below)
Cs	=	Contaminant concentration in surface soil (mg/kg)
IR	=	Food ingestion rate (kg/day)
Is	=	Incidental surface soil ingestion rate (kg/day)
H	=	Portion of food intake from the contaminated area (unitless)
BW	=	Body weight (kg)

Contaminant concentrations in food items were calculated as follows using soil to plant or invertebrate bioaccumulation factors (BAFs) from published sources.

$$Cf = Cs * BAF$$

Where:

Cf	=	Chemical concentration in food (mg/kg)
Cs	=	Contaminant concentration in surface soil (mg/kg)
BAF	=	Biota-soil bioaccumulation factor

Appendix H.1 presents chemical-specific dry weight BAFs that were used in this ERA. The following sources were used to obtain most of the BAFs in this ERA, additional sources used to develop BAFs for the PAHs as described in Appendix H.1:

- Plant BAFs for Organics: Toxicity and Chemical-Specific Factors Database (ORNL, 2002).

- Plant BAFs for Inorganics: Empirical Model for the Uptake of Inorganic Chemicals from Soil by Plants (ORNL, 1998).

- Soil Invertebrate BAFs: Development and Validation of Bioaccumulation Models for Earthworms (Sample et al., 1998).

The diets of the meadow vole and bobwhite quail were assumed to consist of vegetation, while the diets of the short-tailed shrew and American robin were assumed to consist of soil invertebrates (i.e., earthworms). Therefore, chemical concentrations in food items of the meadow vole and bobwhite quail were estimated by multiplying each COPC's surface soil concentration by its associated soil-to-vegetation

BAF. The chemical concentrations in food items of the short-tailed shrew and American robin were estimated by multiplying each COPC's surface soil concentration by its associated soil-to-invertebrate BAF.

The food chain model scenarios were calculated using various exposure assumptions and TRVs to present a range of risks. For selecting chemicals as COPCs, the following sets of exposure assumptions were used:

- Maximum soil concentrations
- 90^{th} percentile BAFs and biota-sediment bioaccumulation factors (BSAFs) (or maximum value if a 90^{th} percentile value was not available)
- Conservative receptor body weight and ingestion rates
- Receptors spend 100% of their time at the site

For refining the list of COPCs in Step 3a (see Section 8.5), the following set of exposure assumptions were used:

- 95% upper confidence limit (UCL) soil concentration
- Median BAFs (or average value if a median value was not available or appropriate)
- Average receptor body weight and ingestion rates
- Receptors spend 100% of their time at the site. The ecological effects quotients (EEQs) reflect this assumption; however, receptors' home ranges were qualitatively taken into account during the Step 3a evaluation.

and;

- Average soil concentration
- Median BAFs (or average value if a median value was not available or appropriate)
- Average receptor body weight and ingestion rates

- Receptors spend 100% of their time at the site. The EEQs reflect this assumption; however, receptors' home ranges were qualitatively taken into account during the Step 3a evaluation.

Appendix H.2 presents the derivation of the exposure parameters used for the surrogate species. The final exposure values that were used in the food chain model are summarized in Table 8.4. The exposure assumptions (i.e., ingestion rate, body weight) were obtained primarily from the Wildlife Exposure Factors Handbook (USEPA, 1993); other sources were used when necessary.

8.4 RISK CHARACTERIZATION

The risk characterization is the final phase of an ERA that compares exposure to ecological effects. It is at this phase that the likelihood of adverse effects occurring as a result of exposure to a stressor was evaluated. An EEQ approach was used to characterize the risk to potential terrestrial receptors. This approach characterizes the potential effects by comparing exposure concentration with the effects data.

When EEQ values exceed 1.0, it is an indication that ecological receptors are potentially at risk; additional evaluation or data may be necessary to confirm with greater certainty whether ecological receptors are actually at risk, especially since most benchmarks are developed using conservative exposure assumptions and/or studies. The EEQ value should not be construed as being probabilistic; rather, it is a numerical indicator of the extent to which an exposure point concentration exceeds or is less than a benchmark.

An EEQ for terrestrial plants and invertebrates was calculated as follows:

$$EEQ = \frac{C_{ss}}{SSSL}$$

where:

EEQ = Ecological effects quotient (unitless)

C_{ss} = Contaminant concentration in surface soil (µg/kg or mg/kg)

SSSL = Plant or invertebrate surface soil screening level (µg/kg or mg/kg)

An EEQ for aquatic receptors was calculated as follows:

$$EEQ = \frac{C_{sd}}{SdSL}$$

where:

EEQ = Ecological effects quotient (unitless)

C_{sd} = Contaminant concentration in sediment (µg/kg or mg/kg)

SdSL = Aquatic receptor sediment screening level (µg/kg or mg/kg)

The EEQ for the terrestrial wildlife model was calculated as follows:

$$EEQ = \frac{CDI}{TRV}$$

where:

EEQ = Ecological effects quotient, (unitless)
CDI = Chronic daily intake dose, (mg/kg-day)
TRV = Toxicity reference value (NOAEL or LOAEL), (mg/kg-day)

8.5 SELECTION OF CHEMICALS OF POTENTIAL CONCERN

The final part of the screening evaluation is selection of COPCs. Chemicals that are not selected as COPCs are assumed to present negligible risk to ecological receptors and are not considered for further evaluation in the ERA. Chemicals that are retained as COPCs are evaluated further in Step 3a to determine if they are carried through as chemicals of concern (COC). Ecological COPCs were initially selected by the following procedures:

- Chemicals with EEQs greater than 1.0 based on screening values were retained as COPCs for further evaluation because they have a potential to cause risk to ecological receptors.

- Chemicals with EEQs greater than 1.0 based on the food chain model using NOAELs were selected as COPCs because they have the potential to cause risks to mammals and birds.

- Chemicals without screening levels were retained as COPCs but are only evaluated qualitatively.

- Calcium, magnesium, potassium, and sodium were not retained as COPCs because they are essential nutrients that can be tolerated by living systems even at high concentrations. No evidence indicates that these chemicals are related to site operations, and they are not considered hazardous chemicals.

8.5.1 Risks to Terrestrial Invertebrates and Plants

Table 8.2 presents the selection of the chemicals retained as COPCs in surface soil. Eight VOCs and two SVOCs were retained as COPCs because no toxicity information was available for these chemicals.

Ten SVOCs (including total PAHs), Aroclor-1260, and thirteen metals were retained as COPCs because their maximum concentrations exceeded associated surface soil screening levels (SSSLs).

8.5.2 Risks to Aquatic Receptors

Table 8.3 presents the selection of chemicals retained as COPCs in sediment. Five VOCs, one SVOC, and one metal were retained as COPCs because no toxicity information was available for these chemicals. Three SVOCs [including high molecular weight (HMW) PAHs and total PAHs], Aroclor-1260, and nine metals were retained as COPCs because their maximum concentrations exceeded associated sediment screening levels (SdSLs).

8.5.3 Risks to Terrestrial Wildlife

Of the detected chemicals, eleven SVOCs (including total PAHs), Aroclor-1260, and ten metals were included in the food chain model because they are considered important bioaccumulative chemicals (USEPA, 2000). These chemicals are indicated as "BIO" on Table 8.2. Table 8.5 summarizes the results of the conservative inputs food chain modeling for the terrestrial surrogate species for the WOD. Appendix H.4 contains the calculation worksheets. After performing the food-chain modeling using maximum detected concentrations and conservative exposure parameters, the following results were found:

- Soil insectivorous receptors-Aroclor-1260 and seven metals were retained as COPCs for the short-tailed shrew because the NOAEL EEQs were greater than 1.0 in the conservative scenario food chain model (see Table 8.5). Aroclor-1260 and six metals were retained as COPCs for the American robin because the NOAEL EEQs were greater than 1.0 in the conservative scenario food chain model (see Table 8.5).

- Soil herbivorous receptors-Three metals were retained as COPCs for the meadow vole because the NOAEL EEQs were greater than 1.0 in the conservative scenario food chain model (see Table 8.5). Two metals were retained as COPCs for the bobwhite quail because the NOAEL EEQs were greater than 1.0 in the conservative scenario food chain model (see Table 8.5).

8.6 STEP 3A - REFINEMENT OF CONSERVATIVE EXPOSURE ASSUMPTIONS

Step 3a consists of a refinement of the conservative exposure assumptions/concentrations to evaluate potential risks to ecological receptors (i.e., plants, invertebrates, and wildlife receptors). The objective of the Step 3a evaluation is to further reduce the number of chemicals that are retained as COPCs to focus

any additional efforts on those chemicals causing ecological risks. Risks to terrestrial plants and invertebrates are first evaluated, followed by an evaluation of the risks to aquatic receptors. Risks to terrestrial wildlife were then evaluated by performing the food chain modeling using less conservative exposure assumptions and average chemical concentrations.

8.6.1 Risks to Terrestrial Plants and Invertebrates

The first step in the Step 3a refinement is to remove inorganic chemicals with detected concentrations similar to or below background concentrations from the list of COPCs. Although it is recognized that there are potential risks from these chemical background levels, chemicals detected at these low concentrations are not related to site activities and should not be further evaluated in the Step 3a process. Although the same can be said for organic chemicals, they are carried through the Step 3a process and discussed at the end of the risk characterization to be conservative. Tables 8.2 and 8.3 have a column that indicates if the chemical was detected at concentrations statistically greater than background concentrations. Section 5.3 of this report presents the background comparison that was conducted for the WOD.

Table 8.2 lists the COPCs that were retained for the potential to cause risks to terrestrial plants and invertebrates. The COPCs are further examined in the following sections. Note that some chemicals with concentrations below the screening values are shaded black because they are bioaccumulative and were included in the food chain model. Because these chemicals did not exceed the screening value, they are not evaluated in this section of the Step 3A refinement because risks to plants and invertebrates are not expected.

Note that there are a few small areas at the WOD site where the vegetation is either absent or stressed. A “tar-like” substance is located in this area and may be acting as a physical barrier preventing the vegetation from growing. It is also possible that chemicals under the “tar-like” substance may be toxic to plants and could be the reason for the lack of vegetation in these small areas.

Volatiles

1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2-butanone, 2-hexanone, acetone, carbon disulfide, isopropyl benzene, and methyl acetate were retained as COPCs because no screening values for these chemicals are available. Generally, VOCs are not considered toxic to plants and invertebrates at low concentrations. This is indicated by the relatively high BTAG screening values for other VOCs (i.e., 100 ug/kg to 300 ug/kg); maximum concentrations of 1,2,4-trimethylbenzene (5 ug/kg), 1,3,5-trimethylbenzene (4 ug/kg), 2-hexanone (20 ug/kg), carbon disulfide (13 ug/kg), and isopropylbenzene (2 ug/kg) are well

below the screening levels for other VOCs. Therefore, risks to plants and invertebrates from these VOCs are expected to be negligible because it is assumed that the toxicity of these VOCs would be similar to the toxicity for the VOCs with screening levels. These VOCs also were detected infrequently in the surface soil at WOD in 3 of 39 or 3 of 60 samples (see Table 8.2). The maximum concentration for 2-butanone (100 ug/kg), acetone (920 ug/kg), and methyl acetate (210 ug/kg) are equal to or greater than the BTAG screening levels for some of the VOCs. 2-Butanone and acetone are common laboratory contaminants and are not expected to be present in surface soil because they are very volatile. In fact, many of the acetone results were qualified because of blank contamination. Therefore, risks to plants and invertebrates from these VOCs also are expected to be negligible. Finally, methyl acetate was detected in 29 of 39 samples, but only two of those samples had concentrations that exceeded the lower screening level for the other VOCs with concentrations of 160 ug/kg (sample WOD-SS-120) and 210 ug/kg (sample WOD-SS-136). These two samples are located approximately 350 feet away from each other and lower concentrations of methyl acetate were detected in the samples located between samples WOD-SS-120 and -136. No additional toxicity data are available for methyl acetate, but given the low frequency of detection above the screening levels for other VOCs, and the spatial distribution of the two samples that exceeded the screening levels, risks to plants and invertebrates from methyl acetate are expected to be low.

PAHs

As part of this Step 3a refinement, total PAHs were evaluated in the place of individually detected PAH concentrations in the surface soil at the WOD (see Table 8.2). This was done because the toxicity of PAHs may be additive and several studies have reported toxicity data for total PAHs (Di Toro et al., 2000). Also, note that the BTAG screening level for PAHs is not based on risks to plants or invertebrates, it is based on risks to mice. The following bullets list toxicity data for plants and/or invertebrates for total PAHs:

- The Fish and Wildlife Service developed screening levels for total PAHs for plants and invertebrates of 3.1 and 20.8 mg/kg, respectively (Lingenfelser, 2000).
- After soil treatment, total PAHs in soils were reduced from 1,710 mg/kg to 98 mg/kg, and earthworm mortality decreased from 100% before treatment to 0% after treatment (USEPA, 1997b)
- After soil treatment, total PAHs in soils were reduced from 1,442 mg/kg to 36 mg/kg, and earthworm mortality decreased from 100% before treatment to 0% after treatment in a 28-day test [Environmental Canada (EC), 1994].

The Fish and Wildlife Service study had the most appropriate value. Although all three studies that evaluated risks to plants and/or invertebrates were based on mortality, the Fish and Wildlife Service values reportedly incorporated a safety factor to account for more sensitive sublethal endpoints. Therefore, the 20.8 mg/kg value developed by the Fish and Wildlife Service is appropriate as a screening value for invertebrates; the value of 3.1 mg/kg is an appropriate screening value for plants. Based on the comparison to these values, it is unlikely that earthworms or plants would be adversely affected by the levels of total PAHs in the surface soil at the WOD because the maximum concentration (2.32 mg/kg) is below the Fish and Wildlife Service values.

Benzaldehyde and Bis(2-ethylhexyl)phthalate

Benzaldehyde and bis(2-ethylhexyl)phthalate were retained as COPCs because no screening values were available for comparison.

Benzaldehyde was detected in 20 of 35 samples collected with a maximum detection of 1,500 ug/kg at location WOD-SS-135. The source of the chemical is not known but benzaldehyde is present in several plants such as hyacinth, cinnamon, sassafras, and many other species (TOXNET, 2003). Therefore, it is possible that plants are the source of the benzaldehyde at the site. Also, as discussed in Section 5.4.1, the low level and widespread occurrence of benzaldehyde does not appear to be indicative of waste activities at WOD. No toxicity data for plants or invertebrates were available for benzaldehyde, but the fact that it is found in many plants, indicates that is not likely to be toxic at the low levels in the soil.

Bis(2-ethylhexyl)phthalate was detected in 25 of 59 samples collected with a maximum detection of 2,800 ug/kg at location 3WFF16-SS9. Although a BTAG screening value is not available for bis(2-ethylhexyl)phthalate, the ORNL value for phytotoxicity is 100,000 ug/kg (Efroymson et al., 1997a). Also, an ORNL earthworm benchmark for a similar phthalate (dimethylphthalate) is 200,000 ug/kg (Efroymson et al., 1997b). The maximum concentration of bis(2-ethylhexyl) phthalate is well below these values so risks to plants and earthworms are not likely.

Aroclor-1260

Only one PCB, Aroclor-1260, was detected in surface soils at the WOD. Aroclor-1260 was detected in 2 of 60 surface soil samples and it was retained as a COPC because the maximum concentration in the surface soil exceeded the BTAG screening value. The reference for the BTAG screening level for PCBs is not presented in the source document; however, the endpoint is listed as plants. ORNL has developed a screening benchmark of 40 mg/kg for soil phytotoxicity. The ORNL benchmarks are generally considered to be very conservative values. Therefore, because the ORNL benchmark for PCBs is well

above the maximum detected Aroclor-1260 concentration (0.22 mg/kg), risks to plants are unlikely. Also, based on a review of the literature (see below), it is unlikely that the maximum detected concentration of Aroclor-1260 (0.22 mg/kg) is impacting earthworms.

- A large and significant decline in total microarthropod abundance was observed between Aroclor-1254 concentrations of 500 and 2,500 mg/kg. Therefore, toxic threshold for PCBs lies somewhere between those concentrations (Parmelee et al., 1997).

- A 14-day laboratory bioassay with crickets yielded an LC_{50} value of 1,200 mg/kg for Aroclor-1254 (Paine et al., 1993).

- Rhett et al., (1998) reported LC_{50}s of 530 mg/kg for Aroclor-1254 after 14 days and 366 mg/kg after 28 days for earthworms.

- 144 mg/kg of PCBs (primarily Aroclor-1260) was not toxic to two earthworm species after a 14-day laboratory bioassay, the EC_{50} for cocoon production was approximately 98 mg/kg, and the no observed effect concentration (NOEC) for cocoon production was approximately 72 mg/kg (Meier et al., 1997).

Although most of the studies listed above evaluated risks from Aroclor-1254, the toxicity of Aroclor-1260 to invertebrates is expected to be similar to the toxicity from Aroclor-1254. In addition, the low frequency of detection (3 percent) coupled with the low concentration indicates that PCBs are not widespread across the site and that there is not a hot spot of PCB contamination. Therefore, the concentrations of PCBs in the soil are not posing a risk to plants or invertebrates at the WOD.

Metals

Thirteen metals were retained as COPCs in surface soil because their maximum detected concentrations exceeded the screening values. None of the metals retained as COPCs were statistically determined to be above background. However, background comparisons could not be conducted for antimony or silver.

Antimony was detected in two of 40 surface soil samples and had a maximum concentration of 0.92 in sample 3WFF16-SS13. The BTAG screening value used for the COPC selection of antimony was 0.48 mg/kg, which is the level for protection of plants. Only the maximum detection exceeded the BTAG screening level. The source for the endpoint for the BTAG screening value is not listed USEPA (1995). A common conservative benchmark for evaluating risks to plants from antimony concentrations is the ORNL value for phytotoxicity of 5 mg/kg; the ORNL screening benchmarks are generally considered to be

conservative values. The maximum detection of antimony is below the ORNL screening benchmark so risks to plants are expected to be low. The antimony USEPA Ecological Soil Screening Level (SSL) for invertebrates is 78 mg/kg (USEPA, 2003a). The maximum detection of antimony in the surface soil is well below this level so risks to soil invertebrates are negligible.

Silver was detected in 28 of 51 samples and had a maximum concentration of 2.3 mg/kg at location WOD-SS-136. The BTAG screening value used for the COPC selection of silver was 0.0098 mg/kg, which is the level for protection of plants. The endpoint for the BTAG screening value is listed only as "corn" in USEPA (1995). A common conservative benchmark for evaluating risks to plants from silver concentrations is the ORNL value for phytotoxicity of 2 mg/kg; the ORNL screening benchmarks are generally considered to be conservative values. Only the maximum detection of silver exceeded the ORNL screening benchmark. In Ratte (1999), artificial soil spiked with silver showed no effects to earthworms at 62 mg/kg after 28 days, and no effects to earthworms were observed after worms were exposed to soil containing 2,000 mg/kg for 14 days. Based on data in the literature, it is unlikely that the silver in the sample with the maximum silver detection will be bioavailable. In the Silver Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review (Eisler, 1996), it is reported that silver in soils is largely immobilized by precipitation to insoluble salts and by complexation or adsorption by organic matter, clays, and manganese oxides. The total organic carbon (TOC) concentration in the sample with the maximum silver detection was very high (19.2 percent). According to Table 2.4 in the USEPA Guidance for Developing Ecological Soil Screening Levels (Eco SSLs), soil with a pH between 5.5 and 7 that contains 6 to 10 percent organic matter has a low bioavailability (USEPA, 2003). Organic matter is 1.72 times the TOC so the organic matter levels in sample WOD-SS-136 was 33 percent and the pH was 6.2, which indicates the silver in that samples will not be bioavailable. Therefore, because the detected concentration is below the ORNL plant benchmark and below the no effects levels for earthworms, and the silver is not expected to be bioavailable, risks to plants and invertebrates are expected to be negligible.

8.6.2 Risks to Aquatic Receptors

As discussed above, twelve of the surface soil samples were collected in marsh sediment so they were evaluated as both surface soils and sediment. The following discussion presents the Step 3a evaluation of these sediment marsh samples.

VOCs

2-Butanone, 2-hexanone, acetone, carbon disulfide, and methyl acetate were retained as COPCs in sediment because no screening values are available for these chemicals. As discussed above, 2-

butanone and acetone are common laboratory contaminants and are not lkely to be present in the sediment samples. 2-Hexanone and carbon disulfide, which were detected at low concentrations in 1 of 12 and 3 of 12 samples, respectively also may be due to laboratory contamination. Also, carbon disulfide is known to occur naturally and is commonly found in estuarine marshes due to microbial actions. Staubes et al. (1987) found that humus soils were stronger sources for biogenic sulfur than soils with lower organic content. Based on the high TOC in the sediment samples, it is possible that the carbon disulfide is from natural sources. The source of the methyl acetate is not known. No toxicity data are available to evaluate risks to aquatic receptors from these chemicals. However, once these chemicals migrate to a sediment location that is inundated with water, it is likely that the VOCs would mix with the surface water and volatize into the atmosphere. Therefore, risks to aquatic receptors from these chemicals are expected to be negligible.

SVOCs

As part of this Step 3A refinement, HMW PAHs, low molecular weight (LMW) PAHs, and total PAHs were evaluated in the place of individually detected PAH concentrations (see Table 8.3) in the sediment at the WOD. This was done because the toxicity of PAHs has been reported to be additive and several studies have reported toxicity data for total PAHs (Di Toro et al., 2000). Benzo(k)fluoranthene was detected in one sample at a concentration that exceeded its screening level. The screening level for total PAHs was not exceeded, however, benzo(k)fluoranthene was not included in the list of PAHs that was used for the total PAHs since it was not included in the list of PAHs used to develop the screening levels. The infrequent detection of benzo(k)fluoranthene, the high TOC level in the sediment sample in which it was detected (4.2 percent), and the fact that the total PAH concentration would be below the screening levels even if the concentration of benzo(k)fluoranthene was added to the total PAH sum, indicates that risks from PAHs to aquatic receptors are low.

Benzaldehyde was detected in 11 of the 12 marsh sediment samples collected with a maximum detection of 1,500 ug/kg at location WOD-SS-135. As discussed above, the source of the chemical is not known but benzaldehyde is present in several plants (TOXNET, 2003). The vegetation near the marsh sediment samples is very diverse. Because benzaldehyde is present in several plants, the more diverse the plant community, the more likely it is that a plant containing benzaldehyde is present. Therefore, it is possible that benzaldehyde is present from natural sources. Although no toxicity data are available to evaluate risks to aquatic receptors from benzaldehyde, the fact that it is found in many plants, indicates that it is not likely to be not toxic at the low levels it was detected in the marsh sediment.

Aroclor-1260

Aroclor-1260, the only PCB detected in the sediment samples, was retained as a COPC because the maximum concentration exceeded the BTAG screening level of 22.7 ug/kg. It was detected in two of the 12 sediment marsh samples at concentrations of 180 ug/kg (sample WOD-SS-136) and 220 ug/kg (sample WOD-SS-135). Both of the positive results were greater than or equal to the effects range-median (ER-M) for PCBs of 180 ug/kg (Long et al., 1995). The BTAG screening level, which is the effects range-low (ER-L) value from Long et al., (1995) and the ER-M are both based on sediment TOC levels of approximately one percent. The TOC values for samples WOD-SS-135 and -136 are 19.2 and 14.3 percent, respectively. Therefore, it is highly unlikely that the Aroclor-1260 will be bioavailable in those samples, at levels that will cause impacts to aquatic receptors. Also, because it was only detected in two of 59 soil sample, Aroclor-1260 does not appear to be a site-wide contaminant and may not be related to site activities.

Metals

Nine metals were retained as COPCs in the sediment at the WOD because their maximum concentrations exceeded the screening levels. Additionally, beryllium was selected as a COPC because no toxicity information was available. Of all the chemicals selected as COPCs, only silver was determined to be statistically greater than background. No statistical comparison could be done for selenium.

Silver was retained as a COPC because the maximum concentration of 2.3 mg/kg exceeded the BTAG screening level of 1.0 mg/kg. Silver was detected in eight of ten samples collected, and three of the ten samples (WOD-SS-135 through 137) had silver concentrations in excess of the BTAG sediment screening level of 1.0 mg/kg. As discussed previously, these are the three samples with the greatest TOC levels at the site ranging from 14.3 to 19.2 percent. In the Silver Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review (Eisler, 1996), it is reported that silver in soils is largely immobilized by precipitation to insoluble salts and by complexation or adsorption by organic matter, clays, and manganese oxides. Therefore, based on the high TOC and the only slight exceedances of the screening level, risks to aquatic receptors from silver in the sediment are expected to be low.

Selenium was detected in two of the twelve marsh sediment samples, with the maximum concentration of 1.5 mg/kg located at WOD-SS-135. There is no sediment BTAG screening value for selenium, but only the maximum sediment concentration exceeded the apparent effects threshold (AET) of 1.0 mg/kg as listed in Buchman (1999). As discussed previously for sample WOD-SS-136, the very high TOC level in sample WOD-SS-135 (17.5 percent) will significantly decrease the bioavailability of selenium in the

sediment marsh sample making risks to aquatic receptors unlikely at the detected concentration. Also, note that although a statistical background comparison could not be conducted for selenium, the maximum detection in the site sample was just slightly greater than the maximum concentration in the background sample (1.4 mg/kg). Therefore, the selenium likely is not related to site activities.

8.6.3 Risks to Terrestrial Wildlife

Section 8.5.3 and Table 8.5 list the chemicals that were retained as COPCs because they had NOAEL EEQs greater than 1.0 in at least one of the conservative scenario receptor models. In order to refine the list of COPCs, food chain modeling was conducted using less conservative exposure assumptions as explained in Section 8.3.

Aroclor-1260 and several metals were retained as COPCs because the NOAEL EEQs were greater than 1.0 in the conservative food chain model for at least one of the wildlife receptors. Less conservative exposure assumptions were then used to recalculate risks to wildlife as explained in Section 8.3.3. No chemicals had NOAEL or LOAEL EEQs greater than 1.0 using average input parameters and average or 95% UCL chemical concentrations so risks to wildlife from site-related chemicals are negligible.

Risks to reptiles were not quantitatively evaluated because exposure factors are not established for most species, and toxicity data are very limited. However, birds and mammals were used as a surrogate to evaluate potential risks to reptiles. As discussed above, risks to birds and/or mammals from PCBs are negligible. The exposure to site contaminants for reptiles will be lower than the exposure of birds and mammals for several reasons. Snakes and turtles consume food items other than earthworms (i.e., plants, insects, small mammals), which are likely to have lower concentrations of contaminants from the soil than earthworms. Also, as presented in USEPA (1993), the metabolic rates and food ingestion rates for reptiles are lower than those for birds and small mammals. Therefore, because the risks to birds and mammals are negligible, risks to reptiles from contaminants in the soil also are negligible based on their lower exposure to site contaminants.

8.7 ECOLOGICAL RISK UNCERTAINTY ANALYSIS

This section presents some of the uncertainties associated with ecological risk assessments.

8.7.1 Measurement and Assessment Endpoints

Measurement endpoints are used to evaluate the assessment endpoints that are selected for the ERA. For this ERA, the measures of effects are not the same as the assessment endpoints. Therefore, the

measures are used to predict effects to the assessment endpoints by selecting surrogate species that will be evaluated. For example, increased mortality of a shrew is used to assess increased mortality of the small mammal population. However, predicting mortality to a shrew may either under or overprotect the small mammal population, resulting from differences in ingestion rates, toxicity, food preferences, etc. between different species.

Several endpoints were not quantitatively evaluated in this ERA. For example, risks to reptiles and amphibians were not quantitatively evaluated because exposure factors are not established for most species, and toxicity data are very limited. Therefore, potential impacts to these species were not determined. Risks to large carnivorous and omnivorous birds and mammals were not evaluated in this ERA. Only a small portion of the food for higher trophic level species will actually come from the affected site, so it is difficult to determine the actual risks involved. By evaluating the effects to small birds and mammals, the risks to higher trophic level species is taken into account. Because risks to small mammals and birds were expected to be low or negligible, risks to higher trophic level species will be low as well.

8.7.2 Exposure Characterization

The chemical dose to terrestrial wildlife is calculated using an equation that incorporates ingestion rates, body weights, bioaccumulation factors, and other exposure factors. These exposure factors are obtained from literature studies or predicted using various equations. Ingestion rates and body weights vary between species, especially between species inhabiting different areas.

Site-specific tissue samples (i.e., plants, invertebrates) were not collected as part of this investigation. Therefore, chemical concentrations in the tissues of these receptors were estimated using various bioaccumulation factors (i.e., soil to invertebrate), in order to obtain exposure point concentrations in the food items for the food chain models. These bioaccumulation factors were derived from the literature, and most of the factors do not take into account site-specific factors such as pH, organic carbon, etc. that can affect BAFs. Therefore, there are uncertainties in the estimation of chemical concentrations in the prey items used for the food chain models.

Another uncertainty in the exposure calculation is the assumption that the chemicals in the media are 100 percent bioavailable to the receptors at the detected concentrations. This is unlikely to occur for chemicals in the environment. As is reported in Efroymson et al. (1997), "…the concentrations reported are nominal concentrations of a soluble form (i.e., a highly bioavailable form) of the chemical added to soil. Most metals in natural soils and contaminants of waste sites are in poorly available forms." Therefore, it is likely that most chemicals (especially metals) in environmental media (i.e., surface soil and sediment) are much less

bioavailable than the chemicals in the laboratory tests used to develop some of the screening levels. Bioavailability was discussed qualitatively in the ERA by evaluating the TOC data in the samples. Based on the very high TOC levels in many of the samples, especially the marsh sediment samples which had the maximum detected concentrations for several chemicals, it is likely that the bioavailability of the chemicals in those samples would be very low.

There is uncertainty in the chemical data that are collected at the site. Measured levels of chemicals are only estimates of the true site chemical concentrations. For samples that are deliberately biased toward known or suspected high concentrations, predicted doses will probably be higher than actual doses. As can be seen by the various site figures (i.e., Figure 4-3) because historic samples were only collected in the southeastern portion of the site, the dataset is being biased toward that area, even through the recent samples were collected at areas spread throughout the site. Because overall risks from the chemicals in the surface soil samples were low, and most of the metals were detected below background concentrations, the biasing of the data is not affecting the conclusions of the ERA.

As discussed earlier in this ERA, fish are exposed to chemicals in the soil/sediment at the base of the slope on an infrequent basis during flooding conditions. It was assumed that their exposure to chemicals in the soil/sediment would be lower than that of benthic invertebrates, which are in direct contact with the soil/sediment. For that reason, risks to fish and piscivorous birds were not evaluated in the ERA because other receptors that were evaluated in the ERA (i.e, invertebrates for fish and shrews for piscivorous birds) are expected to have greater risks. There are some uncertainties with not evaluating risks to fish and piscivorous birds.

Finally, because some mammals and birds have small home ranges, the food chain risks are calculated assuming that the receptors feed only at the site. This assumption over-estimates risk because it is unlikely that the receptors will obtain all their food from within the site boundaries or from the most contaminated areas of the WOD.

8.7.3 Ecological Effects Data

There is uncertainty in the ecological benchmark values. Potentially adverse impacts to terrestrial plants and invertebrates from constituents in surface soil are evaluated by comparing the COPC concentration to surface soil screening values. Few studies and little data are available for establishing soil screening values and many are based on the results of only a few studies. Also, there may be situations where the soil screening values are overpredictive of risk if sensitive species used to develop the criteria are not present. In these cases, an effort was made to identify more appropriate values in the Step 3a refinement.

The NOAELs and LOAELs selected for the surrogate wildlife species were based on species commonly used in laboratory studies (i.e., rats, mice, ducks). There is uncertainty in the application of toxicity data among species because the contaminant may be more or less toxic to the wildlife species in question then it was to the test species.

The toxicity of chemical mixtures is not well understood. The toxicity data used in the ERA to evaluate risk to ecological receptors is for individual chemicals. Chemical mixtures can affect organisms very differently than individual chemicals because of synergistic or antagonistic effects. Additionally, toxicological data were not available for some COPCs, especially the VOCs and some of the SVOCs. The lack of toxicity data for these chemicals does not impact the conclusions of the ERA, however, because VOCs are generally not considered to be toxic to ecological receptors, especially at the low concentrations in which they were detected. Also, one of the SVOCs (benzaldehyde) is present in many plants, which may be the source of the chemical at the site. This is supported by the fact that it was the most frequently detected SVOC in the soil samples, with the exception of bis(2-ethylhexyl)phthalate which is a common laboratory contaminant. Also, for the most part, its occurrence in samples does not appear to correlate with the occurrence of other chemicals. Because benzaldehyde is common in some plants, it is not likely to affect plants and invertebrates which could be exposed to benzaldehyde by ingesting plant material.

8.7.4 Risk Characterization

Risks are projected if an EEQ is greater than or equal to 1.0 regardless of the magnitude of the EEQ. Although the relationship between the magnitude of an EEQ and toxicity is not necessarily linear, the magnitude of an EEQ can be used as a rough approximation of the extent of potential risks, especially if there is sufficient confidence in the guideline used. Finally, there is uncertainty in how the predicted risks to a species at the site translate into risk to the population in the area as a whole.

During the Step 3a refinement, chemicals are evaluated in a line of evidence approach using topics discussed in Section 8.6. In cases where background comparisons could not be made and toxicological information for certain chemicals is not available, the chemicals were not kept for COC consideration. Uncertainties are inherent in this approach because quantification of the risks is not possible and some chemicals that are potentially causing toxicity are not identified.

Risks to reptiles were not quantitatively evaluated because exposure factors are not established for most species, and toxicity data are very limited. However, birds and mammals were used as a surrogate to evaluate potential risks to reptiles. Predicting risks to birds and mammals may either over- or under-predict

the risks to reptiles because of differences in ingestion rates, toxicity, food preferences, etc. Therefore, there is uncertainty involved in using risks to birds and mammals to evaluate risks to reptiles.

8.8 SUMMARY AND CONCLUSIONS

Several chemicals detected in the surface soil samples at the WOD were initially retained as COPCs because their chemical concentrations exceeded screening levels, screening levels were not available for those chemicals, or they were bioaccumulative chemicals with EEQs greater than one based on the conservative exposure scenarios. These chemicals were then re-evaluated in Step 3a of this ERA using a variety of factors such as less conservative exposure assumptions, more appropriate toxicity data based on the assessment endpoints, spatial distribution of the chemicals, and other factors to better determine risks to ecological receptors. The ecological endpoints quantitatively evaluated in this ERA were soil invertebrates, plants, aquatic receptors, and small mammals and birds that consume terrestrial plants and/or invertebrates.

In addition to the above risk-based discussions, chemical concentrations in the site samples were compared to chemical concentrations in background samples to determine if the chemical were related to site activities and if potential risks from chemical at the site are similar to background risks. Metals whose concentrations were determined to be statistically similar to background concentrations were eliminated from further discussion at the beginning of the Step 3a. Organic chemicals whose concentrations were determined to be statistically similar to background concentrations were still evaluated in Step 3a, however, to be conservative.

8.8.1 Summary of Risks to Plants and Invertebrates

Overall, risks to plants and invertebrates from chemicals detected in the surface soil are expected to be low or negligible. The chemicals were either detected at concentrations below levels where toxic responses are expected to occur, the chemicals were detected infrequently, or the spatial distribution indicated that the potentially impacted area was small.

Although as discussed above (and summarized below), the chemicals in the soil are not expected to impact plants, there are a few small areas at the WOD site where the vegetation is either absent or stressed. A “tar-like” substance is located in this area and may be acting as a physical barrier preventing the vegetation from growing. It is also possible that chemicals under the “tar-like” substance may be toxic to plants and could be the reason for the lack of vegetation in these small areas.

The following paragraphs discuss the risks for each chemical or group of chemicals that were retained as COPCs.

VOCs: Eight VOCs were retained as COPCs because screening values for these chemicals were not available. Generally, VOCs are not considered toxic to plants and invertebrates at low concentrations, which are indicated by the relatively high BTAG screening values for other VOCs. The VOCs without screening levels were generally detected at low frequencies, are common laboratory contaminants, or had few, if any, detections greater than the screening values for the other VOCs. Therefore, although toxicity information for some of the VOCs is not available, risks to plants and invertebrates from these chemicals in unlikely.

PAHs: As part of this Step 3A refinement, total PAHs were evaluated in the place of individually detected PAH concentrations in the surface soil because the toxicity of PAHs has been reported to be additive and several studies have reported toxicity data for total PAHs. The maximum total PAH concentration in the site soil samples is less than a screening level developed in one study for risk to plants and invertebrates and is below levels that caused toxicity to earthworms in two other studies. Therefore, it is unlikely that earthworms or plants would be adversely affected by the levels of total PAHs in the surface soil at the WOD because the maximum concentration is well below the values listed for toxicological effects.

Other SVOCs: Benzaldehyde and bis(2-ethylhexyl)phthalate were retained as COPCs because no screening values are available for comparison. The source of benzaldehyde is not known, but may be natural because benzaldehyde is present in several plants species (TOXNET, 2003). No toxicity data for plants or invertebrates were available for benzaldehyde, but the fact that it is found in many plants, indicates that it is not likely to be toxic at the low levels in the soil at the WOD. The maximum detection of bis(2-ethylhexyl)phthalate was below a conservative benchmark for plants, and below a conservative benchmark for earthworms for a similar phthalate. Therefore, risks to plants and invertebrates from bis(2-ethylhexyl)phthalate in the soil are not likely.

PCBs: Aroclor-1260 was the only PCB was detected in surface soil at the WOD, and it was only detected in two of 60 surface soil samples. The maximum detection was well below the conservative ORNL benchmark for plants so risks to plants are unlikely. Also, based on a review of the toxicity data for earthworms, it is unlikely that the concentrations of PCBs are impacting earthworms Finally, the low frequency of detection (3 percent) coupled with the low concentration indicates that PCB are not widespread across the site and that there is not a hot spot of PCB contamination. Therefore, the concentrations of PCBs in the soil are not posing a risk to plants or invertebrates at the WOD.

Metals: Thirteen metals were retained as COPCs in surface soils because their maximum detected concentrations exceeded the screening values. None of the metals were statistically determined to be detected at concentrations greater than background. However, background comparisons could not be conducted for antimony or silver.

Antimony: Antimony was detected in two of 40 surface soil samples. The maximum detection, however, was less than the conservative ORNL benchmark for phytotoxicity, and below the USEPA Ecological SSL for invertebrates. Therefore, risks to plants and invertebrates from antimony in the surface soil are negligible.

Silver: Silver was detected in 28 of 51 samples. Only the maximum detection was greater than the conservative ORNL benchmark for phytotoxicity, but the maximum detection was below levels in the literature that showed impacts to earthworms. The TOC concentrations in the sample with the maximum silver detection was very high (19.2 percent). Based on the high TOC and moderate soil pH levels, the bioavailability of silver in the soil is expected to be low. Therefore, risks to plants and invertebrates from site-related silver in the soil are negligible.

8.8.2 Summary of Risks to Aquatic Receptors

Twelve of the surface soil samples were marsh sediment so they were evaluated as both surface soils and sediment. The following discussion presents the Step 3a evaluation of these sediment marsh samples.

VOCs: Eight VOCs were retained as COPCs because screening values for these chemicals were not available. Generally, VOCs are not considered toxic to aquatic receptors at low concentrations. The VOCs without screening levels were generally detected at low frequencies or are common laboratory contaminants. Also, once these chemicals migrate to a sediment location that is inundated with water, it is likely that the VOCs would mix with the surface water and volatize into the atmosphere. Therefore, risks to aquatic receptors from these chemicals are expected to be negligible.

PAHs: As part of this Step 3A refinement, HMW PAHs, LMW PAHs, and total PAHs were evaluated in the place of individually detected PAH concentrations (see Table 8.3) in the sediment at the WOD because the toxicity of PAHs has been reported to be additive and several studies have reported toxicity data for total PAHs. The screening level for total PAHs was not exceeded, however, benzo(k)fluoranthene (which had one detection that exceeded the screening level) was not included in the list of PAHs that was used for the total PAHs. The infrequent detection of benzo(k)fluoranthene, the high TOC level in the sediment sample, and the fact that the total PAH concentration would still be below

the screening levels even if the concentration of benzo(k)fluoranthene was added to the total PAH sum, indicates that risks from this chemical to aquatic receptors are low.

Other SVOC: Benzaldehyde was retained as a COPC because no screening values are available for comparison. As discussed above, the source of the chemical is not known but benzaldehyde is present in several plants (TOXNET, 2003). Although no toxicity data are available to evaluated risks to aquatic receptors from benzaldehyde, the fact that is found in many plants indicates that is probably not toxic at the low levels it was detected in the marsh sediment.

PCBs: Aroclor-1260 was the only PCB was detected in marsh sediment at the WOD, and it was only detected in two of the 12 samples. Although both of the positive results were greater than or equal to the higher effects level (i.e., ER-M) for PCBs, the ER-M is based on sediment TOC levels of approximately one percent. The TOC values for two samples with PCB levels that exceeded the ER-M are 19.2 and 14.3 percent, respectively. Therefore, it is highly unlikely that the Aroclor-1260 will be bioavailable in those samples, at levels that will cause impacts to aquatic receptors.

Metals: Nine metals were retained as COPCs in surface soils because their maximum detected concentrations exceeded the screening values. Additionally, beryllium was selected as a COPC because no toxicity information was available. Of all the chemicals selected as COPCs, only silver was determined to be statistically greater than background. No statistical comparison could be done for selenium.

Silver: Silver was detected in eight of ten samples collected, and three of the ten samples had silver concentrations in excess of the BTAG sediment screening level of 1.0 mg/kg. The three samples had the greatest TOC levels at the site ranging from 14.3 to 19.2 percent. Silver in soils is largely immobilized by precipitation to insoluble salts and by complexation or adsorption by organic matter, clays, and manganese oxides. Therefore, based on the high TOC and the only slight exceedances of the screening level, risks to aquatic receptors from silver in the sediment are expected to be low.

Selenium: Selenium was detected in two of the twelve marsh sediment samples, but only the maximum sediment concentration exceeded the AET value. The very high TOC level (17.5 percent) in the sample with the maximum detection will significantly decrease the bioavailability of vanadium in the sediment marsh sample making risks to aquatic receptors unlikely at the detected concentration. Also, the maximum detection in the site sample was just slightly greater than the maximum concentration in the background sample. Therefore, the selenium likely is not related to site activities.

8.8.3 Summary of Risks to Terrestrial Wildlife

Several chemicals were retained as COPCs because they had NOAEL EEQs greater than 1.0 in the conservative food chain model for at least one of the wildlife receptors. Less conservative exposure assumptions were then used to recalculate risks to wildlife as part of the Step 3a refinement. No chemicals had NOAEL or LOAEL EEQs greater than 1.0 using average input parameters and average or 95% UCL chemical concentrations.

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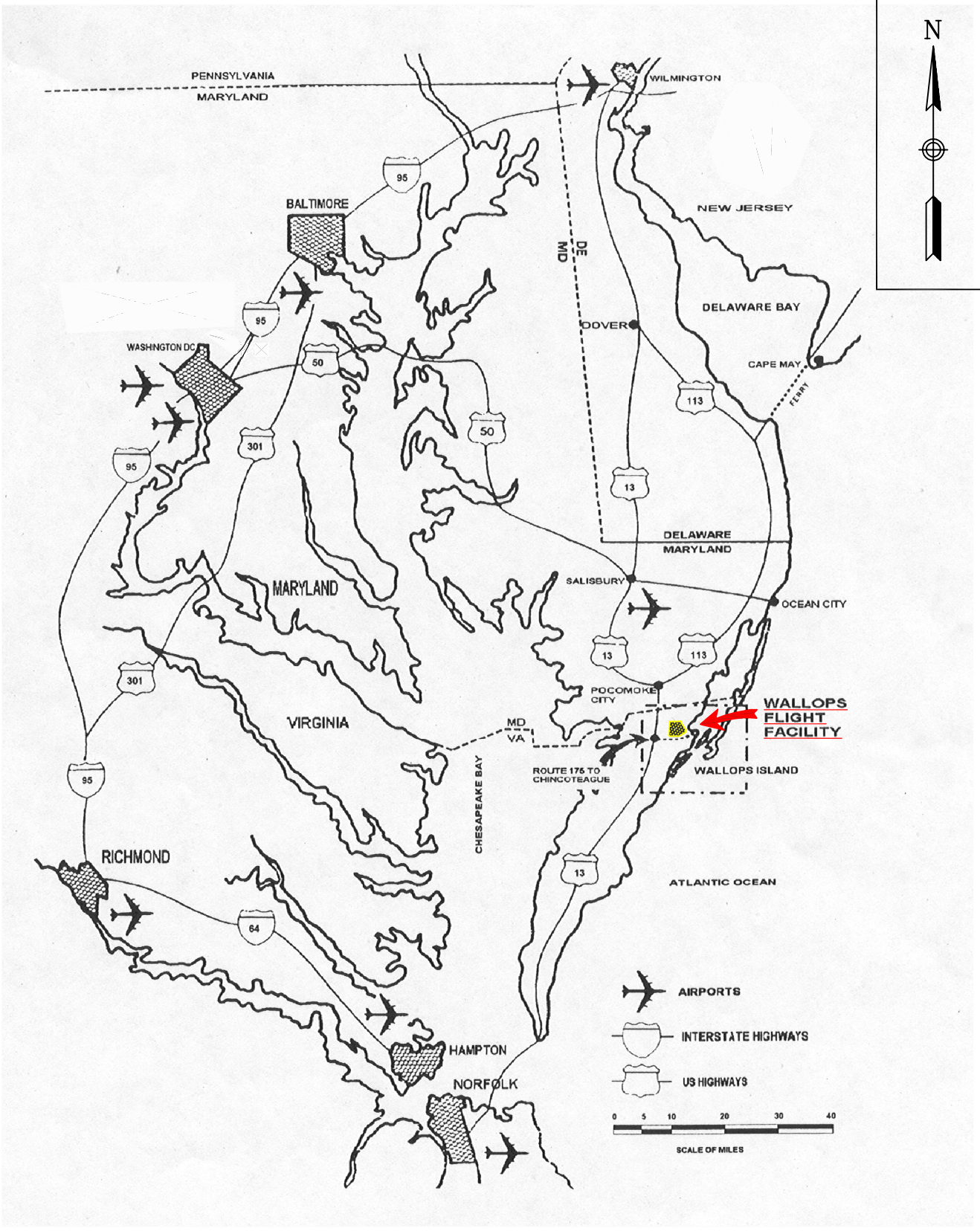
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FIGURES

ACAD: 2175bm02.dwg 9/26/02 LDL



TETRA TECH NUS, INC.

SITE LOCATION MAP
OF
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

SCALE	AS NOTED
FILE: 2175bm02.dwg	LDL PHL
REV	DATE 10/4/02
FIGURE NUMBER	FIGURE 2-1

4740/0930/4740BM01.DWG 12/14/04 MKB



0 2500 5000

SCALE IN FEET

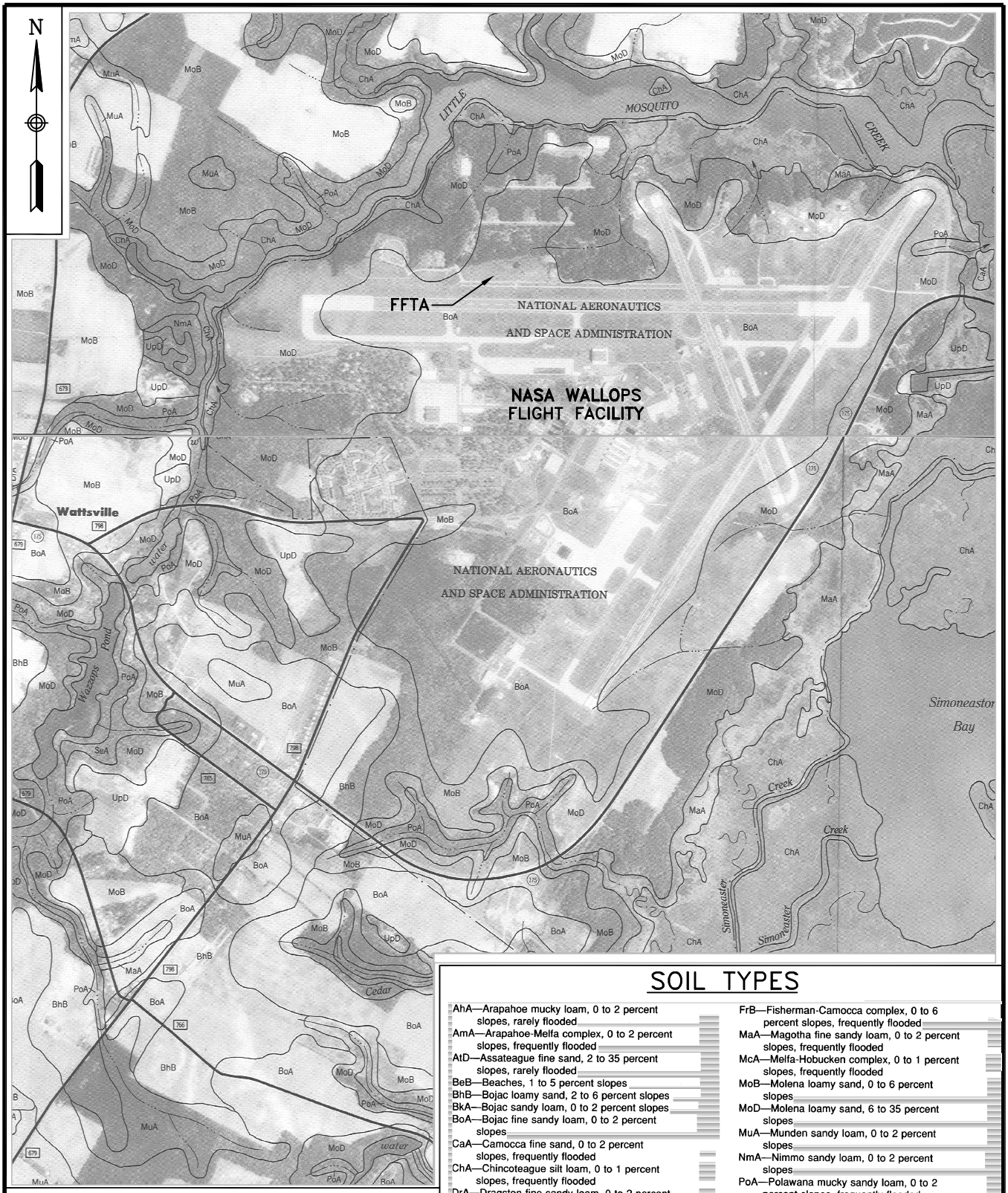
SOURCE: U.S.G.S. 7.5' QUADRANGLE MAP, CHINCOTEAGUE WEST, VA., (37075–H4–TF–024) PHOTOINSPECTED 1989.

TETRA TECH NUS, INC.

STUDY AREA LOCATION MAP
OF
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

SCALE	AS NOTED
FILE:	4740BM01.dwg
	LDL PHL
REV	DATE
	10/4/02
FIGURE NUMBER	FIGURE 2-2

ACAD: 7376-1250/7376gm01.dwg 4/2/03 LDL



SOIL TYPES

AhA—Arapahoe mucky loam, 0 to 2 percent slopes, rarely flooded
AmA—Arapahoe-Melfa complex, 0 to 2 percent slopes, frequently flooded
AtD—Assateague fine sand, 2 to 35 percent slopes, rarely flooded
BeB—Beaches, 1 to 5 percent slopes
BhB—Bojac loamy sand, 2 to 6 percent slopes
BkA—Bojac sandy loam, 0 to 2 percent slopes
BoA—Bojac fine sandy loam, 0 to 2 percent slopes
CaA—Camocca fine sand, 0 to 2 percent slopes, frequently flooded
ChA—Chincoteague silt loam, 0 to 1 percent slopes, frequently flooded
DrA—Dragston fine sandy loam, 0 to 2 percent slopes
FhB—Fisherman fine sand, 0 to 6 percent slopes, occasionally flooded
FmD—Fisherman-Assateague complex, 0 to 35 percent slopes, rarely flooded
FrB—Fisherman-Camocca complex, 0 to 6 percent slopes, frequently flooded
MaA—Magotha fine sandy loam, 0 to 2 percent slopes, frequently flooded
McA—Melfa-Hobucken complex, 0 to 1 percent slopes, frequently flooded
MoB—Molena loamy sand, 0 to 6 percent slopes
MoD—Molena loamy sand, 6 to 35 percent slopes
MuA—Munden sandy loam, 0 to 2 percent slopes
NmA—Nimmo sandy loam, 0 to 2 percent slopes
PoA—Polawana mucky sandy loam, 0 to 2 percent slopes, frequently flooded
SeA—Seabrook loamy fine sand, 0 to 2 percent slopes
UpD—Udorthents and Udipsamments soils, 0 to 30 percent slopes

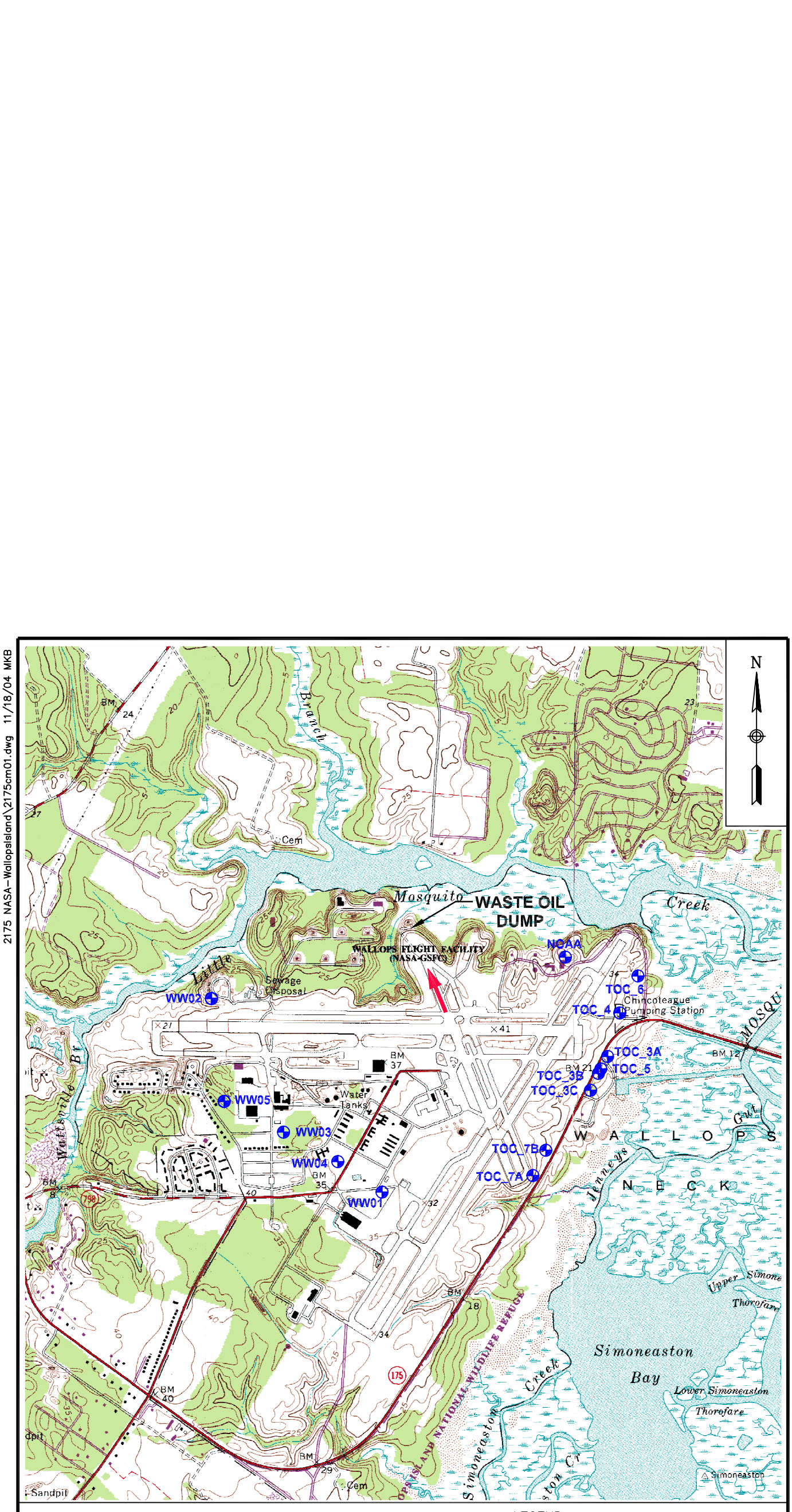
SOURCE: SOIL SURVEY MAPS OF ACCOMACK COUNTY, VA., PREPARED BY U.S. DEPT. OF THE INTERIOR, GEOLOGICAL SURVEY, 1982.

TETRA TECH NUS, INC.

SOILS MAP—MAIN BASE
OF
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

SCALE: NONE
FILE: 7376gm01 LDL PHL
REV
DATE: 4/11/03
FIGURE NUMBER: FIGURE 2-3

2175 NASA–WallopsIsland\2175cm01.dwg 11/18/04 MKB



0 2000 4000

SCALE IN FEET

SOURCE: U.S.G.S. 7.5' QUADRANGLE MAP, CHINCOTEAGUE WEST, VA., (37075–H4–TF–024) PHOTOINSPECTED 1989.

LEGEND

- DRINKING WATER WELLS
- GENERALIZED GROUNDWATER FLOW DIRECTION

TETRA TECH NUS, INC.

WATER SUPPLY WELLS, MAINBASE AREA

NASA WALLOPS FLIGHT FACILITY

WALLOPS ISLAND, VIRGINIA

SCALE	AS NOTED
FILE: 2175cm01.dwg	LDL PHL
REV	DATE 10/4/02
FIGURE NUMBER	FIGURE 2-4

ACAD:4740cp08.dwg 7/28/03 JLF

LEGEND

= MONITORING WELL

N

LITTLE MOSQUITO CREEK

FTA-MW104S

WFF-MW4

WFF16-GW4

WFF16-GW3

WFF16-GW5

WFF16-GW6

WFF15-GW1

WFF16-GW2S

WFF16-GW2D

WFF16-GW7

WFF16-GW1

WFF15-GW2

WFF15-GW7

WFF15-GW3

WFF15-MW3R

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
MONITORING WELL LOCATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: 4740cp08.dwg JLF PHL	SCALE AS NOTED
FIGURE NUMBER FIGURE 3-1	REV 0 DATE 7/28/03

ACAD:FIGURE3-2.dwg 08/08/03 MF PIT

LEGEND

EXCAVATED AREAS

STAINED SOIL

STRESSED VEGETATION

N

LITTLE MOSQUITO CREEK

MARSH OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
EXCAVATION AND STAINED AREAS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE3-2.dwg MF PIT	SCALE AS NOTED
FIGURE NUMBER FIGURE 3-2	REV C DATE 8/8/03

ACAD:FIGURE3-3.dwg 08/08/03 MF PIT

LEGEND

- MONITORING WELL
- EXCAVATED AREAS
- STAINED SOIL
- STRESSED VEGETATION

N

LITTLE MOSQUITO CREEK

WFF15-GW1
WFF15-GW2
WFF15-GW3
WFF15-GW7

MARSH OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
1997 MOITORING WELL LOCATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE3-3.dwg MF PIT	SCALE AS NOTED
FIGURE NUMBER FIGURE 3-3	REV C DATE 8/8/03

ACAD:FIGURE3-4.dwg 08/20/03 HJB PIT

LEGEND

- MONITORING WELL
- SURFACE SOIL SAMPLE
- SURFACE & SUBSURFACE SOIL SAMPLE

N

LITTLE MOSQUITO CREEK

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 – 35

FTA-MW104S

WFF-MW4
(NOT SAMPLED)

WFF16-GW4

WFF16-GW3

WFF16-GW5

WFF15-GW1

3WFF16-SS13

WFF16-GW2S/WFF16-GW2D

2WFF16-SB4S1

3WFF16-SS17

3WFF16-SS8

3WFF16-SS12

3WFF16-SS16

2WFF16-SB3S1

2WFF16-SB2S1

3WFF16-SS7

3WFF16-SS15

WFF16-GW1

3WFF16-SS10

3WFF16-SS9

WFF15-GW2
(NOT SAMPLED)

3WFF16-SS6

2WFF16-SB1S1

3WFF16-SS5

3WFF16-SS14

3WFF16-SS4

WFF15-GW7

3WFF16-SS2

WFF15-GW3
(NOT SAMPLED)

3WFF16-SS1

3WFF16-SS3

WFF15-MW3R

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
2001 RI SAMPLING LOCATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE:	SCALE
FIGURE3-4.dwg MF PIT	AS NOTED
FIGURE NUMBER	REV / DATE
FIGURE 3-4	0 / 8/11/03



NASA GODDARD SPACE FLIGHT CENTER

DESIGNED N.S.	DATE 12/20/00	WALLOPS FLIGHT FACILITY SITE 16 POTENTIOMETRIC SURFACE MARCH 2000
DRAWN K.H.L.	DATE 12/20/00	
Versar INC. 6850 VERSAR CENTER SPRINGFIELD, VIRGINIA 22151 (703) 750-3000		PROJECT NO. DELTEK-# SCALE: AS SHOWN DRAWING NO. 0000-000 FIGURE 4-4

NOTES:

1.) INFORMATION WAS INSERTED UTILIZING A SCANNED IMAGE AND REDUCED TO FIT WITHIN BORDER THEREFORE THE FIGURE IS NOT TO SCALE.

TETRA TECH NUS, INC.

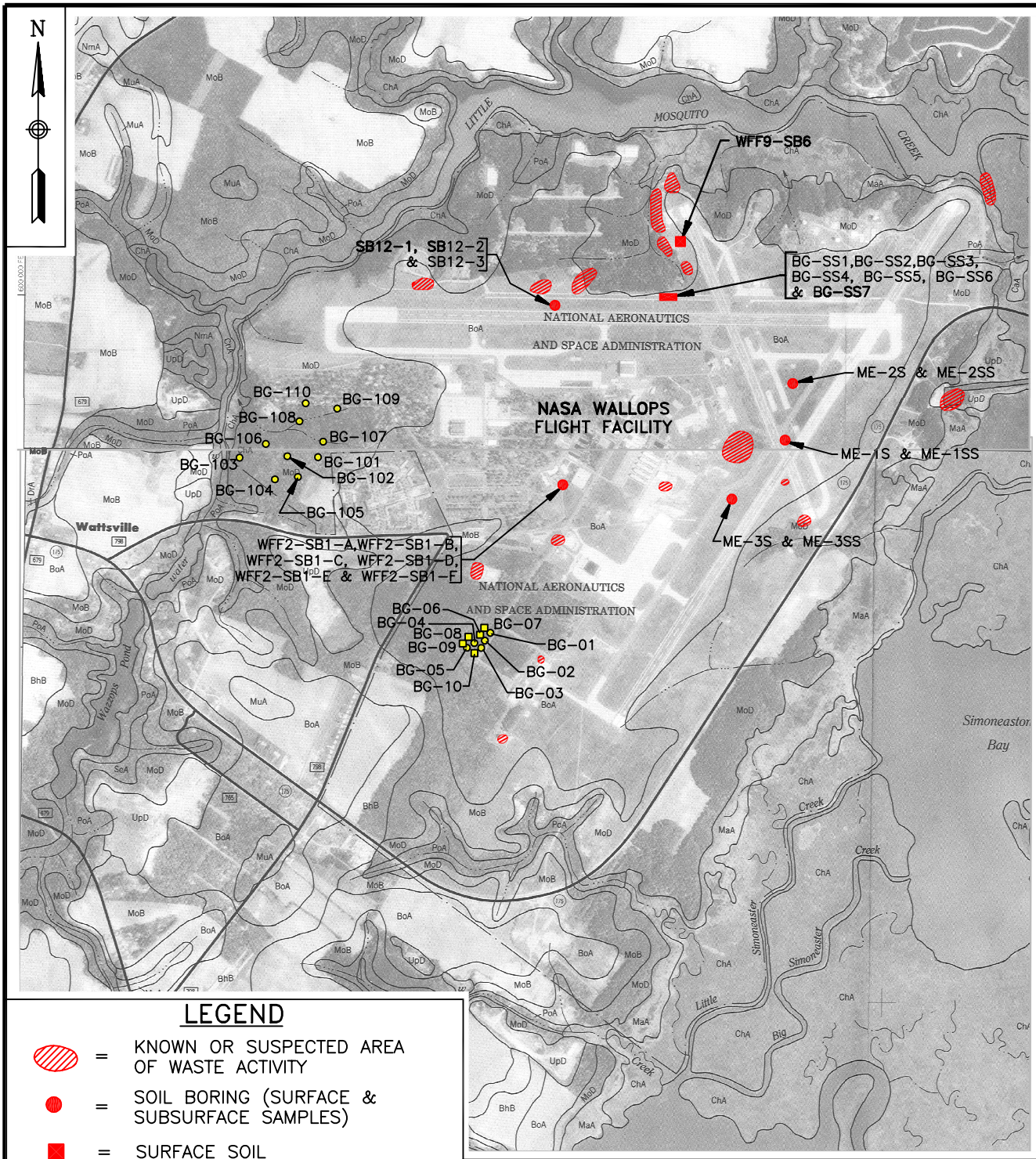
2001 RI – POTENTIOMETRIC SURFACE CONTOURS

NASA WALLOPS FLIGHT FACILITY

WALLOPS ISLAND, VIRGINIA

FILE:	4740CP01 MF PIT	SCALE	SEE NOTE
FIGURE NUMBER	FIGURE 3-5	REV	DATE 8/8/03

NASA-Wallopsisland_7376\7376-1250\7376KT02.DWG 05/14/04 MKB PHL



LEGEND

- = KNOWN OR SUSPECTED AREA OF WASTE ACTIVITY
- = SOIL BORING (SURFACE & SUBSURFACE SAMPLES)
- = SURFACE SOIL
- = NEW SURFACE SOIL
- = NEW SOIL BORING (SURFACE & SUBSURFACE SAMPLES)

SOURCE: SOIL SURVEY MAPS OF ACCOMACK COUNTY, VA., PREPARED BY U.S. DEPT. OF THE INTERIOR, GEOLOGICAL SURVEY, 1982.

NOTES:

1. SEE APPENDIX A OF BACKGROUND SOILS AND GROUNDWATER REPORT FOR POTENTIAL SITE INFORMATION AND SOURCES.
2. SEE FIGURE 3 FOR SOIL TYPES KEY.

TETRA TECH NUS, INC.

BACKGROUND SOIL SAMPLING LOCATIONS, SOILS MAP, AND POTENTIAL SITES/AREAS OF CONCERN FOR MAIN BASE

M-15 PHOTOGRAPHIC TANK SUMMARY REPORT APPENDIX C

NASA WALLOPS FLIGHT FACILITY

WALLOPS ISLAND, VIRGINIA

SCALE	NONE
FILE:	7376kt02 LDL PHL
REV	DATE 4/11/03
FIGURE NUMBER	FIGURE 4-1

NASA–WallopsIsland_WOD_RI_09–02–03\FIGURE4–2.dwg 08/07/03 MF PIT

LEGEND

- = SOIL BORING (SURFACE & SUBSURFACE SAMPLES)
- = SURFACE SOIL
- = MONITORING WELL HISTORICAL AND CURRENT SAMPLING LOCATION.
- = MONITORING WELL NO LONGER EXISTS, WAS NOT RESAMPLED.

N

WFF15–MW3
WFF15–MW3R
WFF09–GW1
WFF9–SB6
BG–SS1, BG–SS2, BG–SS3, BG–SS4, BG–SS5, BG–SS6 & BG–SS7
MW–14GW–02
FTA–MW–01
FTA–MW–53S
MW–14GW–01
SB12–1,SB12–2 & SB12–3
MW–34S
ME–2S & ME2SS
ME–1S & ME–1SS
ME–3S & ME–3SS
WFF2–SB1–A, WFF2–SB1–B, WFF2–SB1–C, WFF2–SB1–D, WFF2–SB1–E & WFF2–SB1–F
BG–110
BG–109
BG–108
BG–107
BG–106
BG–102
BG–101
BG–103
BG–104
BG–105
BG–07
BG–06
BG–01
BG–08
BG–02
BG–04
BG–09
BG–03
BG–05
BG–10
WFF10GW–1

LITTLE MOSQUITO CREEK
JENNYS GUT
RUNWAY 10–28
RUNWAY 04–22
RUNWAY 17–35
HANSEN AFRM
REHOR ROAD
HARPOLL STREET
BOND STREET
O'REILLY STREET
ANDERSEN STREET
KEARSAGE STREET
RICKETTE ROAD
STUMP NECK ROAD
MILL DAM ROAD
161 ROAD

0 1200± 2400±
SCALE IN FEET

NOTE:
SEE APPENDIX A OF BACKGROUND SOILS AND GROUNDWATER REPORT FOR POTENTIAL SITE INFORMATION AND SOURCES.

TETRA TECH NUS, INC.

BACKGROUND SOIL AND GROUNDWATER SAMPLING LOCATIONS
FOR
MAIN BASE
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE4–2 MF PIT	SCALE AS NOTED
FIGURE NUMBER FIGURE 4–2	REV DATE 4/11/03

ACAD:4740cp09.dwg 7/28/03 JLF

LEGEND

= MONITORING WELL

= 2003 SUPPLEMENTAL RI SURFACE SOIL SAMPLE

= 2003 SUPPLEMENTAL RI MARSH BOUNDARY

= 2001 RI SURFACE SOIL SAMPLES

N

LITTLE MOSQUITO CREEK

WOD-SS-133/DUP9
WOD-SS-132
WOD-SS-134
WOD-SS-114
WOD-SS-135
WOD-SS-116
WOD-SS-117
WOD-SS-131
WOD-SS-113
WOD-SS-112
WOD-SS-115
WOD-SS-120
WOD-SS-130
WOD-SS-110
WOD-SS-118
WOD-SS-111
WOD-SS-136
WOD-SS-124
WOD-SS-139
WOD-SS-128/DUP10
WOD-SS-129
2WFF16-SB4S1
3WFF16-SS17
3WFF16-SS13
WOD-SS-108
WOD-SS-109/DUP5
WOD-SS-125
WOD-SS-119
WOD-SS-127
WOD-SS-106
WOD-SS-107
WOD-SS-137
3WFF16-SS12
3WFF16-SS16
3WFF16-SS8
2WFF16-SB2S1
3WFF16-SS11
3WFF16-SS15
2WFF16-SB3S1
3WFF16-SS9
WOD-SS-126
WOD-SS-105
3WFF16-SS7
WOD-SS-104
3WFF16-SS6
WOD-SS-101
WOD-SS-103
2WFF16-SB1S1
3WFF16-SS10
3WFF16-SS5
3WFF16-SS14
3WFF16-SS4
WOD-SS-138
WOD-SS-122
3WFF16-SS3
3WFF16-SS2
WOD-SS-102
WOD-SS-121
3WFF16-SS1
WOD-SS-123

TREELINE

MARSH OUTLINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
SURFACE SOIL
SAMPLE LOCATIONS

NASA WALLOPS FLIGHT FACILITY

WALLOPS ISLAND, VIRGINIA

FILE: 4740cp09.dwg JLF PHL	SCALE AS NOTED
FIGURE NUMBER FIGURE 4-3	REV DATE 7/28/03

ACAD:4740cp06.dwg 7/28/03 JLF

LEGEND

= MONITORING WELL

= 2003 SUPPLEMENTAL RI SOIL BORING

= 2001 RI SOIL BORING

N

LITTLE MOSQUITO CREEK

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 – 35

WOD–SB101
WOD–SB102
WOD–SB103
WOD–SB104
WOD–SB105
WOD–SB106
WOD–SB107
WOD–SB108
WOD–SB109
WOD–SB110
WOD–SB111
WOD–SB112
WOD–SB113
WOD–SB114
WOD–SB115
WOD–SB116
WOD–SB117
WOD–SB118
WOD–SB119
WOD–SB120
WOD–SB121
WOD–SB122
WOD–SB123
WOD–SB124
WOD–SB125
WOD–SB126
WOD–SB127
WOD–SB128
SB1
SB2
SB3
SB4

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
SOIL BORING LOCATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: 4740cp06.dwg JLF PHL	SCALE AS NOTED
FIGURE NUMBER FIGURE 4–4	REV DATE 7/28/03

ACAD:4740cp07.dwg 7/28/03 JLF

LEGEND

= MONITORING WELL

= 2003 SUPPLEMENTAL RI SUBSURFACE SAMPLE

= 2001 RI SUBSURFACE SAMPLE

N

LITTLE MOSQUITO CREEK

MARSH OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 – 35

WOD–SU–114–0406
WOD–SU–116–0204
WOD–SU–117–0102
WOD–SU–113–0406
WOD–SU–112–0204
WOD–SU–115–0305
WOD–SU–120–0406
WOD–SU–118–0406/0406D
WOD–SU–111–0507
WOD–SU–110–0204
WOD–SU–124–0203
WOD–SU–125–0203
WOD–SU–108–0608
WOD–SU–109–0608
WOD–SU–127–0203
SB4S2
WOD–SU–106–0608
WOD–SU–119–0507
WOD–SU–126–0203
WOD–SU–107–0608
WOD–SU–104–1012
SB3S2
SB2S2
SB1S2/SB1S2DUP
WOD–SU–105–0507
WOD–SU–101–1315
WOD–SU–103–1113
WOD–SU–121–1012
WOD–SU–122–1012/1012D
WOD–SU–102–1517
WOD–SU–123–1012

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP SUBSURFACE SOIL SAMPLE LOCATIONS

NASA WALLOPS FLIGHT FACILITY

WALLOPS ISLAND, VIRGINIA

FILE: 4740cp07.dwg JLF PHL	SCALE AS NOTED
FIGURE NUMBER FIGURE 4–5	REV DATE 7/28/03

ACAD:FIGURE4-6.dwg 08/07/03 MF PIT

LEGEND

= MONITORING WELL

N

LITTLE MOSQUITO CREEK

FTA-MW104S

WFF-MW4

WFF16-GW4

WFF16-GW3

WFF16-GW5

WFF16-GW6

WFF16-GW7

WFF15-GW1

WFF16-GW2S

WFF16-GW2D

WFF16-GW1

WFF15-GW2

WFF15-GW7

WFF15-GW3

WFF15-MW3R

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
MONITORING WELL LOCATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: 4740cp08.dwg JLF PHL	SCALE AS NOTED
FIGURE NUMBER FIGURE 4-6	REV 0 DATE 7/28/03

ACAD:FIGURE4-6.dwg 08/07/03 MF PIT

LEGEND

MONITORING WELL (SAMPLED 2003)

N

LITTLE MOSQUITO CREEK

FTA-MW104S

WFF-MW4

WFF16-GW4

WFF16-GW3

WFF16-GW5

WFF16-GW6

WFF16-GW7

WFF15-GW1

WFF16-GW2S

WFF16-GW2D

WFF16-GW1

WFF15-GW2

WFF15-GW7

WFF15-GW3 (NOT SAMPLED)

WFF15-MW3R

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
2003 SUPPLEMENTAL RI
MONITORING WELLS SAMPLED
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE4-7.DWG MF PIT	SCALE AS NOTED
FIGURE NUMBER FIGURE 4-7	REV 0 DATE 8/8/03

ACAD:FIGURE4-8.dwg 08/07/03 HJB PIT

LEGEND

= MONITORING WELL

= GROUNDWATER CONTOUR (DASHED WHERE INFERRED)

(1.65) = GROUNDWATER ELEVATION

N

LITTLE MOSQUITO CREEK

FTA-MW104S

WFF-MW4 (1.24)

WFF16-GW4 (1.42)

WFF16-GW3 (1.50)

WFF16-GW5 (1.29)

WFF16-GW6 (1.22)

WFF15-GW1 (1.04)

WFF16-GW2S (1.65)

WFF16-GW2D

WFF16-GW7 (1.16)

WFF15-GW2 (1.45)

WFF15-GW7 (1.90)

WFF16-GW1 (1.71)

WFF15-GW3 (1.47)

WFF15-MW3R (1.90)

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
GROUNDWATER ELEVATIONS (3/19/03)
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE 4-8.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE 4-8	REV DATE 8/20/03

ACAD:FIGURE4-9.dwg 08/20/03 hjb PIT

LEGEND

= MONITORING WELL

= CROSS SECTION LOCATION

N

LITTLE MOSQUITO CREEK

FTA-MW104S

A

A'

WFF-MW4

WFF16-GW4

WFF16-GW5

WFF16-GW3

WFF16-GW6

WFF16-GW7

WFF16-GW2S

WFF16-GW2D

WFF16-GW1

WFF15-GW1

WFF15-GW2

WFF15-GW7

WFF15-GW3

WFF15-MW3R

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 - 35

0 100± 200±

SCALE IN FEET

NOTE:

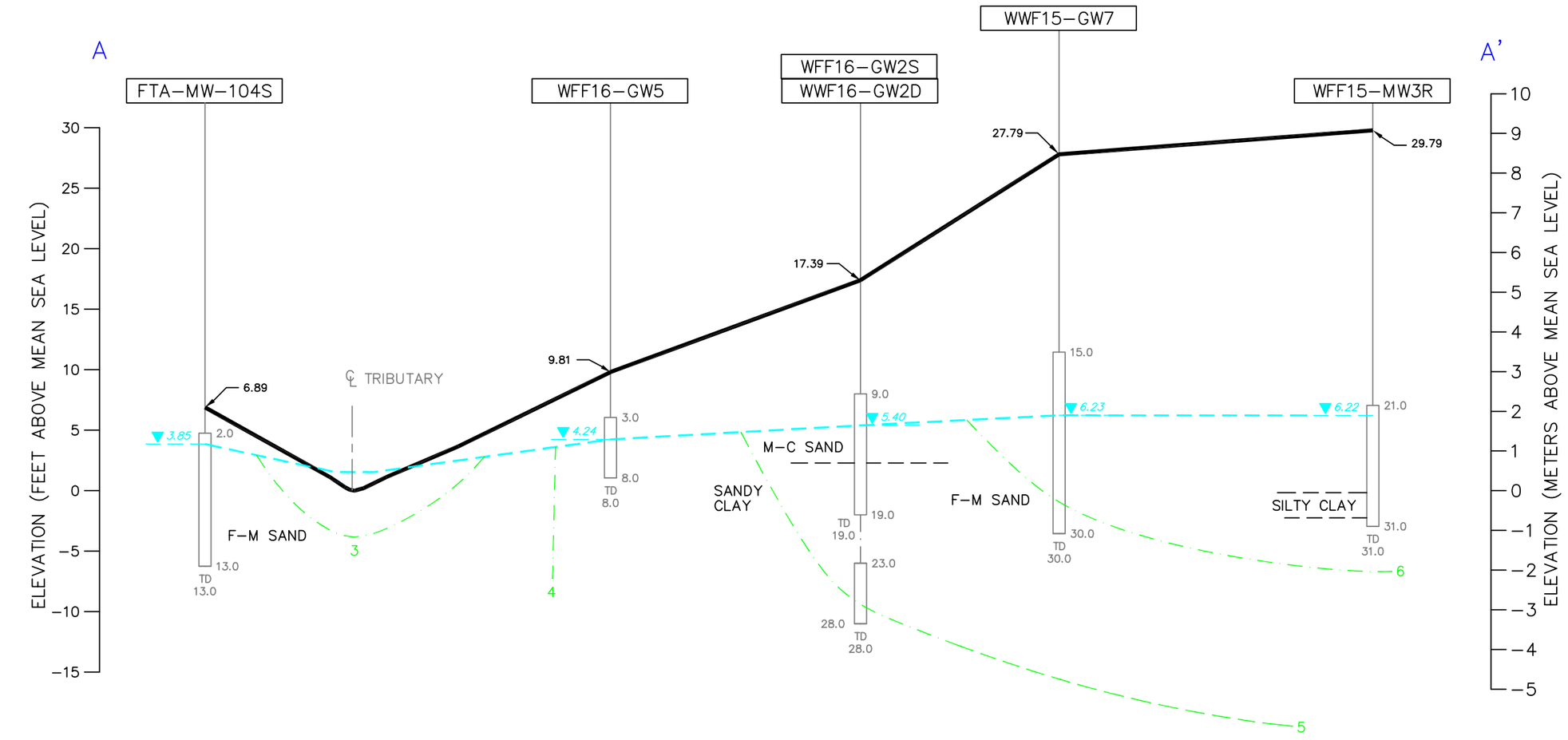
ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

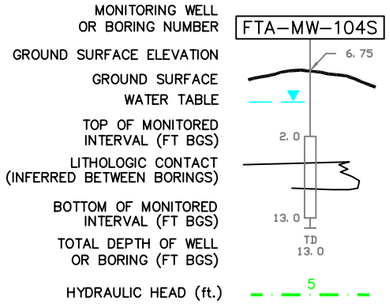
WASTE OIL DUMP
CROSS SECTION LOCATION
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

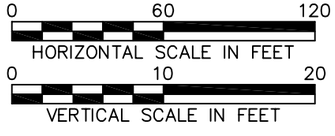
FILE: FIGURE 4-9.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE 4-9	REV DATE 8/20/03

ACAD: 4740GX05.dwg 08/22/03 MF PIT



LEGEND:





TETRA TECH NUS, INC.

WASTE OIL DUMP
GEOLOGICAL CROSS SECTION
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE	SCALE
4740GX05	AS NOTED

FIGURE NUMBER	REV	DATE
FIGURE 4-10	0	8/21/03

ACAD:FIGURE 5-1.dwg 08/21/03 HJB PIT

LEGEND

- ⊕ = MONITORING WELL
- △ = 2003 SUPPLEMENTAL RI SURFACE SOIL SAMPLE
- ⊗ = 2003 SUPPLEMENTAL RI MARSH BOUNDARY
- ▽ = 2001 RI SURFACE SOIL SAMPLES
- J = ESTIMATED
- K = BIASED HIGH
- L = BIASED LOW
- mg/kg = MILLIGRAMS PER KILOGRAM
- ug/kg = MICROGRAMS PER KILOGRAM

N

LITTLE MOSQUITO CREEK

WOD-SS-133 02/19/03
INORGANICS mg/kg
SILVER 0.24 K

WOD-SS-133 DUP
INORGANICS mg/kg
SILVER 0.14 K

WOD-SS-134 02/26/03
INORGANICS mg/kg
SILVER 0.4

WOD-SS-113 02/11/03
INORGANICS mg/kg
SILVER 0.22

WOD-SS-114 02/11/03
INORGANICS mg/kg
SILVER 0.29

WOD-SS-132 02/19/03
INORGANICS mg/kg
SILVER 0.65

WOD-SS-135 02/26/03
INORGANICS mg/kg
SILVER 1.6 J

WOD-SS-111 02/11/03
INORGANICS mg/kg
SILVER 0.15

WOD-SS-116 02/12/03
INORGANICS mg/kg
SILVER 0.29

WOD-SS-115 02/12/03
INORGANICS mg/kg
SILVER 0.19

WOD-SS-112 02/11/03
INORGANICS mg/kg
SILVER 0.36

WOD-SS-117 02/12/03
INORGANICS mg/kg
SILVER 0.13

3WFF16-SS13 02/25/00
INORGANICS mg/kg
ANTIMONY 0.92
SILVER 0.16

WOD-SS-120 02/12/03
INORGANICS mg/kg
SILVER 0.22
VOLATILES ug/kg
TOLUENE 2 J

WOD-SS-110 02/11/03
INORGANICS mg/kg
SILVER 0.19

3WFF16-SS12 02/25/00
INORGANICS mg/kg
SILVER 0.24

3WFF16-SS17 02/25/00
INORGANICS mg/kg
SILVER 0.28

WOD-SS-119 02/12/03
INORGANICS mg/kg
SILVER 0.28 L

WOD-SS-106 02/10/03
INORGANICS mg/kg
ANTIMONY 0.36 L
SILVER 0.44

WOD-SS-107 02/10/03
SEMIVOLITILES ug/kg
BENZO(a)PYRENE 47 J

WOD-SS-139 02/21/03
SEMIVOLATILE ug/kg
BENZO(a)PYRENE 360 J

WOD-SS-136 02/19/03
INORGANICS mg/kg
SILVER 2.3

WOD-SS-129 02/19/03
INORGANICS mg/kg
SILVER 0.13 K

3WFF16-SS8 02/25/00
INORGANICS mg/kg
SILVER 0.48

WOD-SS-125 02/13/03
SEMIVOLATILE ug/kg
BENZO(a)PYRENE 200 J
BENZO(g,h,i)PYRENE 93 J

WOD-SS-137 02/19/03
INORGANICS mg/kg
SILVER 1.1 K

WOD-SS-127 02/21/03
VOLATILES ug/kg
ETHYLBENZENE 2 J
TOLUENE 1 J

WOD-SS-126 02/13/03
SEMIVOLATILE ug/kg
BENZO(a)PYRENE 68 J
VOLATILES ug/kg
ETHYLBENZENE 2 J

3WFF16-SS15 02/25/00
INORGANICS mg/kg
SILVER 0.32
SEMIVOLATILES ug/kg
BENZO(g,h,i)PERYLENE 200 J

WOD-SS-138 02/19/03
INORGANICS mg/kg
SILVER 0.19 K

WOD-SS-105 02/11/03
INORGANICS mg/kg
SILVER 0.38 K
SEMIVOLATILES ug/kg
BENZO(a)PERYLENE 80 J

3WFF16-SS6 02/25/00
INORGANICS mg/kg
SILVER 0.16

3WFF16-SS9 02/25/00
SEMIVOLATILES ug/kg
BENZO(a)PYRENE 910
BENZO(g,h,i)PERYLENE 430

WOD-SS-101 02/06/03
SEMIVOLATILE ug/kg
BENZO(a)PYRENE 150 J
BENZO(g,h,i)PERYLENE 95 J

WOD-SS-109 02/11/03
INORGANICS mg/kg
SILVER 0.19

WOD-SS-109 DUP
INORGANICS mg/kg
SILVER 0.21

WOD-SS-123 02/13/03
SEMIVOLATILE ug/kg
BENZO(a)PYRENE 550 J

3WFF16-SS10 02/25/00
INORGANICS mg/kg
SILVER 0.36
SEMIVOLATILES ug/kg
BENZO(a)PYRENE 1300
BENZO(g,h,i)PERYLENE 590

2WFF16-SB2S1 05/07/98
SEMIVOLATILES ug/kg
BENZO(g,h,i)PERYLENE 83 J

HEDGE

0 100± 200±
SCALE IN FEET

NOTE:
ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
SELECT SURFACE SOIL SAMPLE RESULTS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE 5-1.dwg	SCALE AS NOTED
FIGURE NUMBER FIGURE 5-1	REV DATE 8/20/03

ACAD:FIGURE 5-2.dwg 08/21/03 HJB PIT

LEGEND

= MONITORING WELL

= 2003 SUPPLEMENTAL RI SUBSURFACE SAMPLE

= 2001 RI SUBSURFACE SAMPLE

J = ESTIMATED
K = BIASED HIGH
L = BIASED LOW
mg/kg = MILLIGRAMS PER KILOGRAM
ug/kg = MICROGRAMS PER KILOGRAM

N

LITTLE MOSQUITO CREEK

MARSH

HEDGE

OF RUNWA

0.25 0.50 0.75 1.25 2.50 3.75 5.00 6.25 7.50 8.75

WOD-SU-111-0507 2/11/03

INORGANICS	mg/kg
ANTIMONY	18.3 L
CADMIUM	23.4 L
SILVER	389
THALLIUM	3.5 K
SEMIVOLATILES	**ug/kg**
BENZ(a)ANTHRACENE	45 J
BENZALDEHYDE	45 J
BENZO(a)PYRENE	55 J
BENZO(b)FLUORANTHENE	88 J
BIS(2-ETHYLHEXYL)PHTHALATE	78 J
CHRYSENE	73 J
FLUORANTHENE	45 J
PYRENE	93 J
VOLATILES	**ug/kg**
1,2,4-TRIMETHYLBENZENE	4 J
2-BUTANONE	25 J
BENZENE	42 J
CARBON DISULFIDE	4 J
ETHYLBENZENE	2 J
M,P-XYLENE	4 J
O-XYLENE	1 J
TOLUENE	10 J
XYLENE (TOTAL)	5 J

WOD-SU-112-0204 2/11/03

INORGANICS	mg/kg
SILVER	0.11

WOD-SU-108-0608 2/10/03

INORGANICS	mg/kg
THALLIUM	0.18 L

WOD-SU-114-0406 2/11/03

INORGANICS	mg/kg
THALLIUM	0.18

WOD-SU-110-0204 2/11/03

INORGANICS	mg/kg
SILVER	0.2

WOD-SU-116-0204 2/12/03

SEMIVOLATILE	ug/kg
FLUORANTHENE	40 J

WOD-SU-117-0102 2/12/03

INORGANICS	mg/kg
SILVER	0.11

WOD-SU-115-0305 2/12/03

INORGANICS	mg/kg
CADMIUM	0.54

WOD-SU-120-0406 2/12/03

INORGANICS	mg/kg
CADMIUM	0.034
SEMIVOLATILE	**ug/kg**
BIS(2-ETHYLHEXYL)PHTHALATE	66 J

WOD-SU-124-0203 2/13/03

VOLATILES	ug/kg
METHYL ACETATE	5 J

WOD-SU-126-0203 2/26/03

INORGANICS	mg/kg
SILVER	0.46
SEMIVOLATILE	**ug/kg**
BIS(2-ETHYLHEXYL)PHTHALATE	63 J
VOLATILES	**ug/kg**
XYLENE (TOTAL)	9 U

WOD-SU-127-0203 2/25/03

INORGANICS	mg/kg
SILVER	0.24
SEMIVOLATILE	**ug/kg**
BIS(2-ETHYLHEXYL)PHTHALATE	190 J

WOD-SU-125-0203 2/13/03

SEMIVOLATILE	ug/kg
BENZO(b)FLUORANTHENE	56 J
CHRYSENE	39 J
FLUORANTHENE	43 J
PYRENE	47 J
VOLATILES	**ug/kg**
1,2,4-TRIMETHYLBENZENE	1 J
1,3,5-TRIMETHYLBENZENE	1 J
M,P-XYLENE	1 J
XYLENE (TOTAL)	1 J

WOD-SU-119-0507 2/12/03

INORGANICS	mg/kg
CADMIUM	0.062 K
SILVER	0.21 L

WOD-SU-105-0507 2/11/03

INORGANICS	mg/kg
SILVER	0.35 K

WOD-SU-104-1012 2/6/03

SEMIVOLATILE	ug/kg
BIS(2-ETHYLHEXYL)PHTHALATE	37 J

2WFF16-SB4S2 5/7/98

SEMIVOLATILE	ug/kg
2-METHYLNAPHTHALENE	310 J
ACENAPHTHENE	54 J
FLUORENE	100 J
PHENANTHRENE	290 J
VOLATILES	**ug/kg**
XYLENE (TOTAL)	64 J

2WFF16-SB3S2 5/7/98

SEMIVOLATILE	ug/kg
PHENANTHRENE	43 J

2WFF16-SB2S2 5/7/98

SEMIVOLATILE	ug/kg
2-METHYLNAPHTHALENE	29000 J
ACENAPHTHENE	1800 J
DIBENZOFURAN	1100 J
FLUORENE	2800 J
NAPHTHALENE	7700 J
PHENANTHRENE	7800 J
PYRENE	580 J
VOLATILES	**ug/kg**
CHLOROETHANE	110 J
ETHYLBENZENE	2200 J
TOLUENE	1700 J
XYLENE (TOTAL)	13000 J

WOD-SU-102-1517 2/6/03

VOLATILES	ug/kg
1,2,4-TRIMETHYLBENZENE	42
1,3,5-TRIMETHYLBENZENE	93
CHLOROETHANE	13
M,P-XYLENE	10 J
O-XYLENE	9 J
TETRACHLOROETHENE	3 J
XYLENE (TOTAL)	20

2WFF16-SB1S2 5/7/98

SEMIVOLATILE	ug/kg
2-METHYLNAPHTHALENE	22000 J
FLUORENE	2100 J
NAPHTHALENE	2900 J
PHENANTHRENE	5700 J
PYRENE	290 J
VOLATILES	**ug/kg**
CHLOROETHANE	56 K
ETHYLBENZENE	1200 J
TETRACHLOROETHENE	320
TOLUENE	1400
XYLENE (TOTAL)	9200 J

0 100± 200±
SCALE IN FEET

NOTE:
ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
SELECT SUBSURFACE SOIL RESULTS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE 5-2	SCALE AS NOTED
FIGURE NUMBER FIGURE 5-2	REV DATE 8/21/03

NASA–WallopsIsland_WOD RI_09–02–03\FIGURE5–3.dwg 08/22/03 HJB PIT

LEGEND

- MONITORING WELL (SAMPLED 2003)
- J ESTIMATED
- ug/L MICROGRAMS PER LITER

N

LITTLE MOSQUITO CREEK

WOD–MW4 3/17/03

INORGANICS	ug/L
CHROMIUM	6.1
LEAD	5.1

FTA–MW104S

WOD–WFF16–GW2D 3/12/03

INORGANICS	ug/L
ARSENIC	21.4
VOLATILES	ug/L
1,2–DICHLOROETHENE (CIS)	2
BENZENE	8
ETHYLBENZENE	8
ISOPROPYLBENZENE	1

WOD–WFF16–GW3 3/18/03

INORGANICS	ug/L
CHROMIUM	124

WOD–WFF16–GW5 3/13/03

SEMIVOLATILE	ug/L
STYRENE	1

WOD–WFF16–GW4

WOD–WFF16–GW2S 3/12/03

SEMIVOLATILES	ug/L
ACENAPHTHENE	1 J
BIS(2–ETHYLHEXYL)PHTHALATE	2 J
VOLATILES	ug/L
1,2–DICHLOROETHENE (CIS)	1

WOD–WFF15–GW1 3/12/03

SEMIVOLATILES	ug/L
FLUORENE	2 J
PHENANTHRENE	2 J
VOLATILES	ug/L
1,2–DICHLOROETHENE (CIS)	3

WOD–WFF16–GW6

OUTLINE

WOD–WFF16–GW7 3/18/03

SEMIVOLATILE	ug/L
BIS(2–ETHYLHEXYL)PHTHALATE	18

WOD–WFF16–GW1 3/18/03

INORGANICS	ug/L
CHROMIUM	147

TREELINE

WFF15–GW7 3/14/03

INORGANICS	ug/L
LEAD	68.6
SEMIVOLATILE	ug/L
2–METHYLNAPHTHALENE	130
ACENAPHTHENE	9
BIS(2–ETHYLHEXYL)PHTHALATE	4 J
DIBENZOFURAN	4 J
FLUORENE	12
NAPTHALENE	130
PHENANTHRENE	15
VOLATILES	ug/L
1,2,4–TRIMETHYLBENZENE	170
1,2–DICHLOROETHENE (CIS)	1
1,3,5–TRIMETHYLBENZENE	74
BENZENE	11
ETHYLBENZENE	68
ISOPROPYLBENZENE	6
M,P,–XYLENE	370
METHYLCYCLOHEXANE	18
O–XYLENE	170
STYRENE	5
TETRACHLOROETHENE	5
TOLUENE	120
XYLENE (TOTAL)	540

WOD–WFF15–GW2 3/12/03

SEMIVOLATILES	ug/L
4–METHYLPHENOL	42
VOLATILES	ug/L
2–BUTANONE	6
TOLUENE	2

WFF15–GW3 (NOT SAMPLED)

WOD–WFF–MW3R

HEDGE

HEDGE

END OF RUNWAY 17 – 35

0.25 0.50 0.75 1.00 1.25 2.50 3.75 5.00 6.25 7.50 8.75

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
SELECT GROUNDWATER SAMPLE RESULTS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE5–3.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE 5–3	REV DATE 8/22/03

LEGEND

- MONITORING WELL (SAMPLED 2003)
- J — ESTIMATED
- ug/L — MICROGRAMS PER LITER
- ND — NOT DETECTED

N

LITTLE MOSQUITO CREEK

MARSH

OUTLINE

TREELINE

HEDGE

HEDGE

END OF RUNWAY 17 – 35

0.50 0.25 0.50 0.50 0.50 0.75 0.50 0.50 0.25 1.25 1.00 0.75 1.25 2.50 3.75 5.00 6.25 7.50 8.75 1.25 2.50 3.75 5.00 8.75 7.50

WOD–M4W 3/17/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	20
DISSOLVED OXYGEN (mg/L)	3.98
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	174
pH (SU)	6.49
TURBIDITY (NTU)	130

WOD–WFF16–GW4 3/14/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	35
DISSOLVED OXYGEN (mg/L)	9.76
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	231
pH (SU)	5.95
TURBIDITY (NTU)	90.7

WOD–WFF16–GW3 3/18/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	75
DISSOLVED OXYGEN (mg/L)	7.98
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	283
pH (SU)	5.01
TURBIDITY (NTU)	2.31

WOD–WFF16–GW5 3/13/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	675
DISSOLVED OXYGEN (mg/L)	3.06
FERROUS IRON (mg/L)	0.1
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	3
pH (SU)	7.72
TURBIDITY (NTU)	27.4

WOD–WFF16–GW6 3/17/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	50
DISSOLVED OXYGEN (mg/L)	1.3
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	148
pH (SU)	5.88
TURBIDITY (NTU)	2.9

WOD–WFF15–GW1 3/12/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	250
DISSOLVED OXYGEN (mg/L)	0.71
FERROUS IRON (mg/L)	2
HYDROGEN SULFIDE (mg/L)	0.1
OXIDATION REDUCTION POTENTIAL (mv)	38
pH (SU)	6.89
TURBIDITY (NTU)	2.31

WOD–WFF16–GW7 3/18/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	25
DISSOLVED OXYGEN (mg/L)	0.68
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	–51
pH (SU)	7.14
TURBIDITY (NTU)	9

WOD–WFF16–GW1 3/18/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	75
DISSOLVED OXYGEN (mg/L)	6.89
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	147
pH (SU)	6.69
TURBIDITY (NTU)	0.6

WOD–WFF15–GW2 3/14/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	50
DISSOLVED OXYGEN (mg/L)	2.33
FERROUS IRON (mg/L)	2.5
HYDROGEN SULFIDE (mg/L)	0.5
OXIDATION REDUCTION POTENTIAL (mv)	0
pH (SU)	6.29
TURBIDITY (NTU)	18.09

WFF15–GW7 3/14/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	50
DISSOLVED OXYGEN (mg/L)	0.79
FERROUS IRON (mg/L)	6
HYDROGEN SULFIDE (mg/L)	3
OXIDATION REDUCTION POTENTIAL (mv)	3
pH (SU)	5.42
TURBIDITY (NTU)	15

WOD–WFF16–GW2D 3/12/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	90
DISSOLVED OXYGEN (mg/L)	0.49
FERROUS IRON (mg/L)	9
HYDROGEN SULFIDE (mg/L)	0.1
OXIDATION REDUCTION POTENTIAL (mv)	–51
pH (SU)	6.32
TURBIDITY (NTU)	7.5

WOD–WFF16–GW2S 3/12/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	160
DISSOLVED OXYGEN (mg/L)	2.79
FERROUS IRON (mg/L)	3.8
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	–51
pH (SU)	6.77
TURBIDITY (NTU)	9

WOD–WFF15–MW3R 3/12/03

MISCELLANEOUS PARAMETERS	
ALKALINITY (mg/L AS CaCO3)	40
DISSOLVED OXYGEN (mg/L)	8.56
FERROUS IRON (mg/L)	ND
HYDROGEN SULFIDE (mg/L)	ND
OXIDATION REDUCTION POTENTIAL (mv)	107
pH (SU)	6.41
TURBIDITY (NTU)	5.8

0 100± 200±

SCALE IN FEET

NOTE:

ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

WASTE OIL DUMP
2003 SUPPLEMENTAL RI
GROUNDWATER FIELD PARAMETERS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE: FIGURE5–4.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE 5–4	REV DATE 8/22/03

LEGEND

- MONITORING WELL (SAMPLED 2003)
- J — ESTIMATED
- ug/L — MICROGRAMS PER LITER
- ND — NOT DETECTED

N

LITTLE MOSQUITO CREEK

MARSH OUTLINE

FTA–MW104S

WFF15–GW3 (NOT SAMPLED)

HEDGE

HEDGE

END OF RUN

WOD–WFF16–GW4 3/14/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	5.4
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	39.2
METHANE (ug/L)	1
NITRATE (mg/L)	0.23
NITROGEN (mg/L)	13.7
OXYGEN (mg/L)	7.16
SULFATE (mg/L)	4.7
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF16–GW5 3/13/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	60.5
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	NA
METHANE (ug/L)	8.1
NITRATE (mg/L)	0.22
NITROGEN (mg/L)	13
OXYGEN (mg/L)	0.45
SULFATE (mg/L)	26
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–MW4 3/17/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	51
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	2.4
METHANE (ug/L)	ND
NITRATE (mg/L)	0.74
NITROGEN (mg/L)	14.3
OXYGEN (mg/L)	2.89
SULFATE (mg/L)	9.1
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF16–GW3 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	10.6
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	1.9
METHANE (ug/L)	10.6
NITRATE (mg/L)	1.5
NITROGEN (mg/L)	7
OXYGEN (mg/L)	3.21
SULFATE (mg/L)	4.4
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF15–GW1 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	93.6
ETHANE (ug/L)	0.08
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	2.5
METHANE (ug/L)	444.2
NITRATE (mg/L)	0.072
NITROGEN (mg/L)	9.2
OXYGEN (mg/L)	ND
SULFATE (mg/L)	6.3
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF16–GW6 3/17/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	139.3
ETHANE (ug/L)	0.01
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	3.1
METHANE (ug/L)	ND
NITRATE (mg/L)	12
NITROGEN (mg/L)	12.8
OXYGEN (mg/L)	0.86
SULFATE (mg/L)	38
TOTAL ORGANIC CARBON (mg/L)	7.5

WOD–WFF15–GW2 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	35.4
ETHANE (ug/L)	ND
ETHENE (ug/L)	0.04
HYDROGEN (nm/L as gas)	2.2
METHANE (ug/L)	168.4
NITRATE (mg/L)	ND
NITROGEN (mg/L)	10.7
OXYGEN (mg/L)	ND
SULFATE (mg/L)	13
TOTAL ORGANIC CARBON (mg/L)	8.2

WOD–WFF16–GW7 3/18/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	211.7
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	2.6
METHANE (ug/L)	9521.8
NITRATE (mg/L)	0.41
NITROGEN (mg/L)	2.2
OXYGEN (mg/L)	ND
SULFATE (mg/L)	28
TOTAL ORGANIC CARBON (mg/L)	17

WOD–WFF16–GW2D 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	74.1
ETHANE (ug/L)	0.5
ETHENE (ug/L)	0.04
HYDROGEN (nm/L as gas)	14
METHANE (ug/L)	876.3
NITRATE (mg/L)	ND
NITROGEN (mg/L)	8.1
OXYGEN (mg/L)	ND
SULFATE (mg/L)	7.2
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF16–GW2S 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	43.3
ETHANE (ug/L)	0.05
ETHENE (ug/L)	0.01
HYDROGEN (nm/L as gas)	10.2
METHANE (ug/L)	495.5
NITRATE (mg/L)	0.03
NITROGEN (mg/L)	7.6
OXYGEN (mg/L)	0.82
SULFATE (mg/L)	6.2
TOTAL ORGANIC CARBON (mg/L)	10

WOD–WFF15–GW7 3/14/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	222.8
ETHANE (ug/L)	1.15
ETHENE (ug/L)	0.06
HYDROGEN (nm/L as gas)	2.7
METHANE (ug/L)	529.7
NITRATE (mg/L)	0.033
NITROGEN (mg/L)	10.2
OXYGEN (mg/L)	0.18
SULFATE (mg/L)	6.4
TOTAL ORGANIC CARBON (mg/L)	13

WOD–WFF16–GW1 3/18/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	75.9
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	4.8
METHANE (ug/L)	2.9
NITRATE (mg/L)	2.5
NITROGEN (mg/L)	9.1
OXYGEN (mg/L)	3.86
SULFATE (mg/L)	21
TOTAL ORGANIC CARBON (mg/L)	ND

WOD–WFF15–MW3R 3/12/03

MISCELLANEOUS PARAMETERS

CARBON DIOXIDE (mg/L)	17.7
ETHANE (ug/L)	ND
ETHENE (ug/L)	ND
HYDROGEN (nm/L as gas)	2
METHANE (ug/L)	26.2
NITRATE (mg/L)	0.38
NITROGEN (mg/L)	6.7
OXYGEN (mg/L)	3.43
SULFATE (mg/L)	16
TOTAL ORGANIC CARBON (mg/L)	ND

0 100± 200±

SCALE IN FEET

NOTE:

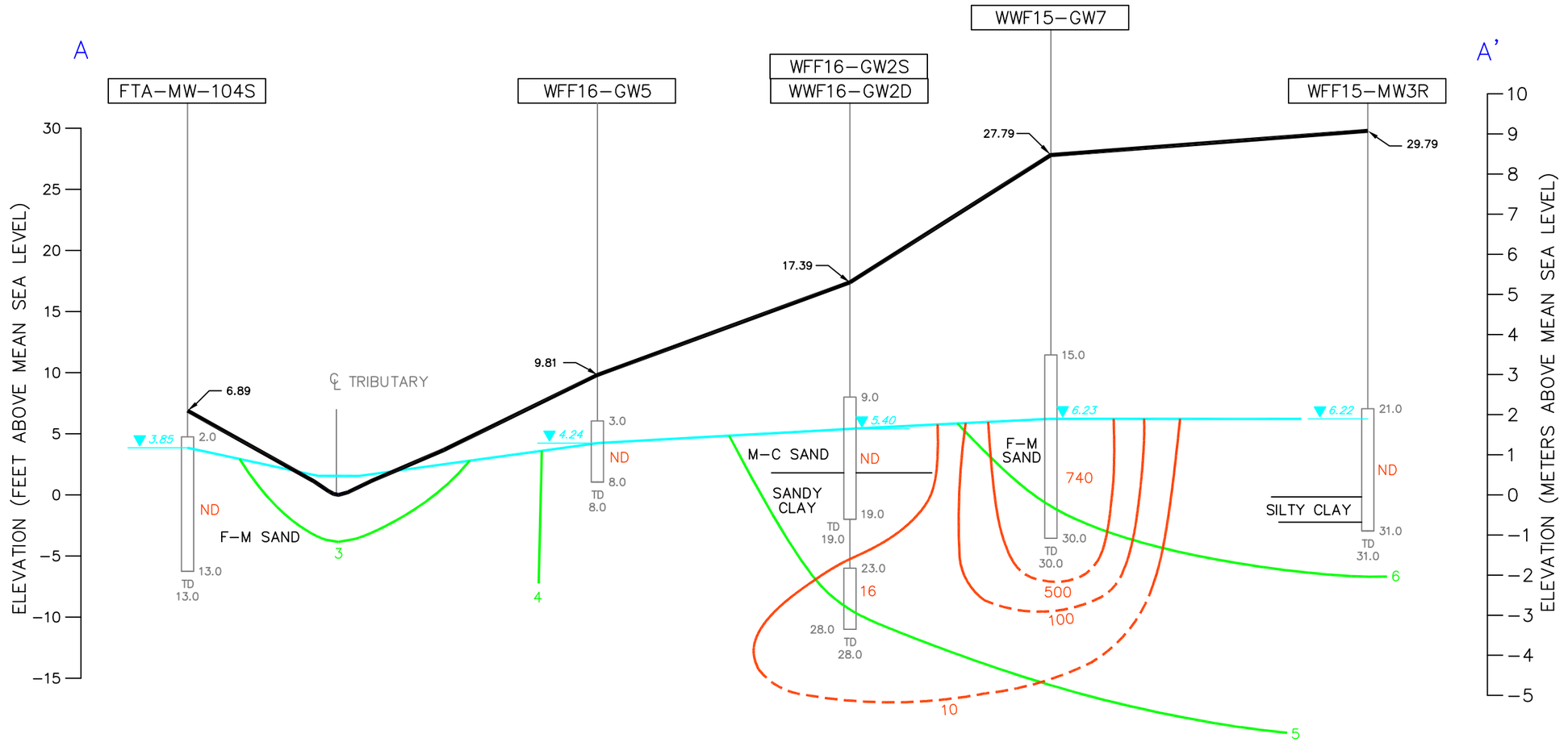
ELEVATION CONTOURS ARE METRIC.

TETRA TECH NUS, INC.

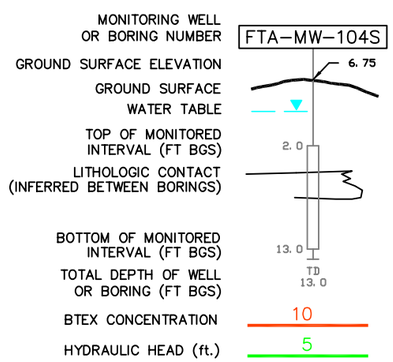
WASTE OIL DUMP
2003 SUPPLEMENTAL RI
GROUNDWATER MISCELLANEOUS PARAMETERS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

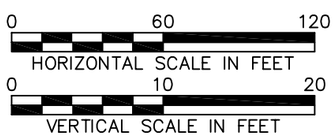
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FIGURE NUMBER: FIGURE 5–5	REV / DATE: 8/22/03

4740 NASA-Wallopsisland\4740GX01.DWG 12/09/04 MKB



LEGEND:





TETRA TECH NUS, INC.

WASTE OIL DUMP
GEOLOGICAL CROSS SECTION
BTEX CONCENTRATIONS
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

FILE 4740GX01	SCALE AS NOTED
FIGURE NUMBER **FIGURE 5-6**	REV **0** DATE **8/21/03**

Ecological Risk Assessment Tiered Approach

RPM Input and Risk Management Consideration[3]

Step 8: Risk Management

Tier 1. Screening Risk Assessment (SRA): Identify pathways and compare exposure point concentrations to bench marks.

Step 1: Site visit; Pathway Identification/Problem Formulation; Toxicity Evaluation

Step 2: Exposure Estimate; Risk Calculation (SMDP)[1]

Proceed to Exit Criteria for SRA

Exit Criteria for the Screening Risk Assessment: Decision for exiting or continuing the ecological risk assessment.

1) Site passes screening risk assessment. A determination is made that the site poses acceptable risk and shall be closed out for ecological concerns.

2) Site fails screening risk assessment: The site must have both complete pathway and unacceptable risk. As a result the site will either have an interim cleanup or moves to the second tier.

Tier 2. Baseline Ecological Risk Assessment (BERA): Detailed assessment of exposure and hazard to "assessment endpoints" (ecological qualities to be protected). Develop site specific values that are protective of the environment.

Step 3a: Refinement of Conservative Exposure Assumptions[2] (SRA)----**Proceed to Exit Criteria for Step 3a**

Step 3b: Problem Formulation - Toxicity Evaluation; Assessment Endpoints; Conceptual Model; Risk Hypothesis (SMDP)

Step 4: Study Design/DQO - Line of Evidence; Measurement Endpoints; Work Plan and Sampling & Analysis Plan (SMDP)

Step 5: Verification of Field Sampling Design (SMDP)

Step 6: Site Investigation and Data Analysis (SMDP)

Step 7: Risk Characterization

Proceed to Exit Criteria for BERA

Exit Criteria Step 3a Refinement

1) If re-evaluation of the conservative exposure assumptions (SRA) support an acceptable risk determination then the site exits the ecological risk assessment process.

2) If re-evaluation of the conservative exposure assumptions (SRA) do not support an acceptable risk determination then the site continues in the Baseline Ecological Risk Assessment process. **Proceed to Step 3b.**

Exit Criteria Baseline Risk Assessment

1) If the site poses acceptable risk then no further evaluation and no remediation from an ecological perspective is warranted.

2) If the site poses unacceptable ecological risk and additional evaluation in the form of remedy development and evaluation is appropriate, proceed to third tier.

Tier 3. Evaluation of Remedial Alternative (RAGs C)

a. Develop site specific risk based cleanup values.

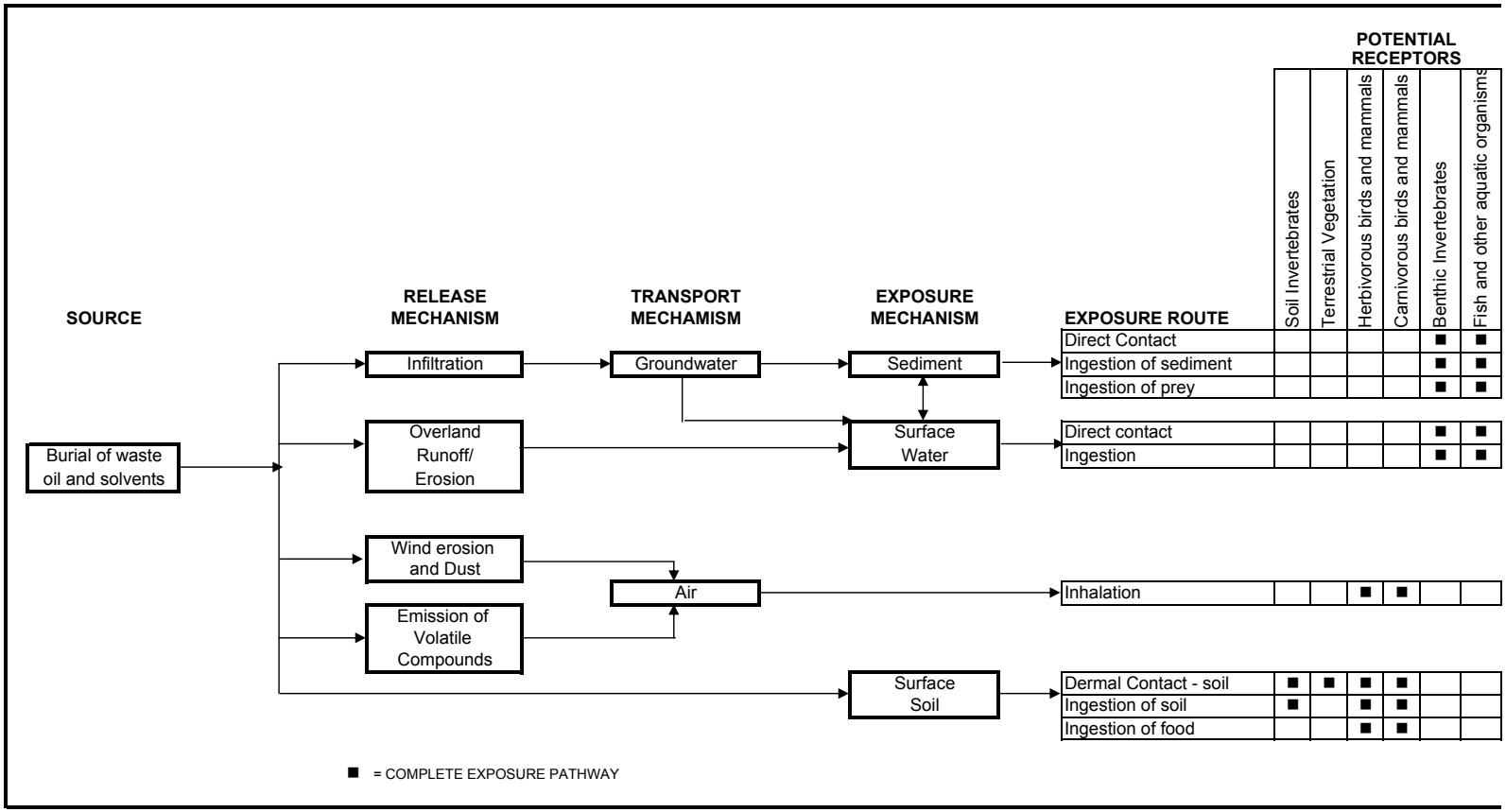
B. Qualitatively evaluate risk posed to the environment by implementation of each alternative (short term) impacts and estimate risk reduction provided by each (long-term) impacts; provide quantitative evaluation where appropriate. Weigh alternative using the remaining CERCLA 9 Evaluation Criteria. Plan for monitoring and site closeout.

Notes: 1) See EPA's 8 Steps ERA Process for requirements for each Scientific Management Decision Point (SMDP).

2) Refinement Includes but is not limited to background, bioavailability, detection frequency. Etc.

3) Risk Management is incorporated throughout the tiered approach.

FIGURE 8-1
TIERED APPROACH
WOD RI REPORT
NASA WFF-WALLOPS ISLAND, VIRGINIA



Blank space indicates incomplete exposure pathway or relatively insignificant, or not applicable, potential exposure.

FIGURE 8.2

ECOLOGICAL CONCEPTUAL SITE MODEL
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

TABLES

TABLE 2.1
AREA DRINKING WATER SUPPLY WELL INFORMATION
WOD RI REPORT
NASA - WALLOPS ISLAND, VIRGINIA

WFF Main Base ID	OWNER	LOCATION	DATE OF INSTALLATION	DIAMETER (INCHES)	DEPTH (FEET)	SCREENED INTERVAL (FEET)	WELL TYPE
WW01	NASA	Main Base	1992	8	260	190-200, 210-220, 230-255	Active Drinking Water
WW02	NASA	Main Base	1992	8	150	100-145	Active Drinking Water
WW03	NASA	Main Base	1992	8	253	198-218, 223-248	Active Drinking Water
WW04	NASA	Main Base	1992	8	265	220-260	Active Drinking Water
WW05	NASA	Main Base	1990	8	260	190-250	Active Drinking Water
NOAA ID	**OWNER**	**LOCATION**	**DATE OF INSTALLATION**	**DIAMETER (INCHES)**	**DEPTH (FEET)**	**SCREENED INTERVAL (FEET)**	**WELL TYPE**
NOAA	NOAA	Main Base	1966	6	208	198-208	Active Drinking Water
Town of Chincoteague ID	**OWNER**	**LOCATION**	**DATE OF INSTALLATION**	**DIAMETER (INCHES)**	**DEPTH (FEET)**	**SCREENED INTERVAL (FEET)**	**WELL TYPE**
TOC-3A	TOC	Main Base	1989	6	55	40-55	Active Drinking Water
TOC-3B	TOC	Main Base	1989	6	60	45-60	Active Drinking Water
TOC-3C	TOC	Main Base	1989	6	60	45-60	Active Drinking Water
TOC-4	TOC	Main Base	1965	8	262	216-245	Active Drinking Water
TOC-5	TOC	Main Base	1972	6	256	223-256	Active Drinking Water
TOC-6	TOC	Main Base	1977	6	260	154-159,180-185,192-197,210-225	Active Drinking Water
TOC-7A	TOC	Main Base	1983	6	107	97 - 107	Active Drinking Water
TOC-7B	TOC	Main Base	1983	6	106	96 - 106	Active Drinking Water

NASA: National Aeronautics and Space Administration
NOAA: National Oceanic and Atmospheric Admistration
TOC: Town of Chinocteague

TABLE 4.1
OCCURRENCE AND DISTRIBUTION OF SUBSTANCES IN MOLENA BACKGROUND SURFACE SOILS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. [1] of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.	Metals Range in US Soils USGS[2]	Metals Range in US Soils Alloway[3]	Metals in Eastern MD MDE [4]	Pesticides Range in NJ Soils Agricultural NJDEP[5]	Pesticides Range in NJ Soils Parklands NJDEP[6]
Aluminum	10/10	1870	13900	9460	21800	normal	-		700-<10000		1400-18000		
Arsenic	10/10	0.78	14.2	4.2	30.9	lognormal	-		<0.1-97	0.1-50	<0.24-6.9		
Barium	10/10	9.7	114	72.1	169	normal	-		10-5000		9.8-170		
Beryllium	9/10	0.26	1.2	0.641	1.67	normal	0.089	0.089	<1-15		<0.10-1.4		
Cadmium	6/10	0.11 K	0.84	0.209	---	lognormal	0.089	0.12		0.01-2.4	<0.10-1.9		
Calcium	9/9	184	1390 J	591	3350	lognormal	-		100-320000		50-4300		
Chromium	10/10	1.9	18.4	9.57	23.3	normal	-		1-2000	5-1500	2-71		
Cobalt	10/10	0.35	7.3	3.6	9.34	normal	-		<3-70	1-40	0.58-26		
Copper	9/9	2.1	33	8.91	82.8	lognormal	-		<1-700	2-250	1.8-28		
Iron	10/10	1740	10900 J	7590	16300	normal	-		100->100000		1000-25000		
Lead	10/10	4.9	124	30.6	---	nonparametric	-		<10-700	2-300	4.1-150		
Magnesium	10/10	143	1450	968	2230	normal	-		50->100000		63-3900		
Manganese	10/10	8.4	781	368	1060	normal	-		<2-7000	20-10000	5-1100		
Mercury	9/10	0.025	0.25	0.0688	0.675	lognormal	0.016	0.016	<0.01-4.6	0.01-0.3	0.02-3.5		
Nickel	10/10	0.95	10.6	6.14	14.3	normal	-		<5-700	2-1000	1.4-28		
Potassium	10/10	73.7	756 J	394	983	normal	-		50-63000		71-1700		
Selenium	4/6	0.58 K	1.4 K	0.645	---	normal	0.36	0.48	<0.01-4.3	0.01-2	0.17-5		
Silver	2/6	0.15 L	0.3 L	0.112	---	lognormal	0.089	0.12		0.01-8	0.06-2.7		
Sodium	6/6	12.4	31.1	21.6	36.8	normal	-		<500-100000		16-940		
Thallium	4/6	0.32	1.6	0.581	---	normal	0.18	0.21		0.03-10	<0.22-10		
Vanadium	10/10	3.5	28.5	16.9	39.6	normal	-		<7-500	3-500	2.5-59		
Zinc	10/10	4.5	104	29.4	247	lognormal	-		<5-2900	10-300	4.9-240		
4,4'-DDE	6/10	5.7 J	5000	539	---	nonparametric	3.5	4.2				ND-8800	ND-1770
4,4'-DDT	5/10	4.2 J	15000	1560	---	nonparametric	4.1	4.2				ND-26000	ND-4610
Benz(a)anthracene	1/10	550 J	550 J	237	---	nonparametric	350	430					
Benzo(a)pyrene	2/10	46 J	410 J	206	---	nonparametric	350	430					
Benzo(b)fluoranthene	2/10	76 J	640 J	232	---	nonparametric	350	430					
Benzo(k)fluoranthene	1/10	290 J	290 J	211	---	nonparametric	350	430					
Bis(2-ethylhexyl)phthalate	1/10	210 J	210 J	203	---	normal	350	430					
Chrysene	2/10	67 J	630 J	230	---	nonparametric	350	430					
Fluoranthene	2/10	87 J	1000 J	269	---	nonparametric	350	430					
Phenanthrene	1/10	790 J	790 J	261	---	nonparametric	350	430					
Pyrene	2/10	120 J	890 J	261	---	nonparametric	350	430					

Notes:

Units are ug/kg for organics, mg/kg for inorganics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
Number of samples may vary based on the number of usable results.

[1] Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.

[2] USGS, 1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. USGS Professional Survey Paper 1270.

[3] Alloway, B.J. 1990. Heavy Metals in Soils. Blackie and Son Ltd. ISBN 0-216-92698-X.

[4] MDE (State of Maryland. Department of the Environment), 2001. Cleanup Standards for Soil and Groundwater. Interim Final Guidance. Update No. 1. August.

[5] NJDEP, 1999. Findings and Recommendations for the Remediation of Historic Pesticide Contamination. Final Report. Historic Pesticide Contamination Task Force. March.

[6] NJDEP, 1993. A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey. Site Remediation Program. Trenton, NJ. September.

TABLE 4.2
OCCURRENCE AND DISTRIBUTION OF SUBSTANCES IN MOLENA BACKGROUND SUBSURFACE SOILS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. [1] of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.	Metals Range in US Soils USGS[2]	Metals Range in US Soils Alloway[3]	Metals in Eastern MD MDE [4]	Pesticides Range in NJ Soils Agricultural NJDEP[5]	Pesticides Range in NJ Soils Parklands NJDEP[6]
Aluminum	11/11	5380	22400	14100	27300	normal	-		700-<10000		1400-18000		
Arsenic	11/11	1.1	5.3	3.55	7.53	normal	-		<0.1-97	0.1-50	<0.24-6.9		
Barium	11/11	16	88.5	48.6	107	normal	-		10-5000		9.8-170		
Beryllium	10/11	0.15	0.57	0.345	0.745	normal	0.21	0.21	<1-15		<0.10-1.4		
Cadmium	5/10	0.19	0.36	0.191	---	normal	0.093	0.83		0.01-2.4	<0.10-1.9		
Calcium	9/9	85.9 J	471 J	243	596	normal	-		100-320000		50-4300		
Chromium	11/11	5.7	21	12.6	25.2	normal	-		1-2000	5-1500	2-71		
Cobalt	11/11	1.2	14 J	4.14	21.8	normal	-		<3-70	1-40	0.58-26		
Copper	10/10	1.6	10.9	7.04	15.4	normal	-		<1-700	2-250	1.8-28		
Iron	11/11	3040	17900	10800	25900	normal	-		100->100000		1000-25000		
Lead	11/11	1.7	12.2	7.7	16.4	normal	-		<10-700	2-300	4.1-150		
Magnesium	11/11	279	1780	949	2120	normal	-		50->100000		63-3900		
Manganese	11/11	18.4	213	97.7	263	normal	-		<2-7000	20-10000	5-1100		
Mercury	9/11	0.019	0.048	0.0298	---	normal	0.018	0.11	<0.01-4.6	0.01-0.3	0.02-3.5		
Nickel	11/11	2.8	11.2	7.05	14.5	normal	-		<5-700	2-1000	1.4-28		
Potassium	10/11	196	853 J	454	1040	normal	223	223	50-63000		71-1700		
Selenium	3/6	0.23	0.89 K	0.398	---	nonparametric	0.39	0.47	<0.01-4.3	0.01-2	0.17-5		
Silver	4/5	0.17 L	0.22 L	0.229	---	nonparametric	0.83	0.83		0.01-8	0.06-2.7		
Sodium	6/6	14.1	49.3 K	34.3	60.2	normal	-		<500-100000		16-940		
Thallium	3/7	0.22	0.53	0.216	---	lognormal	0.19	0.4		0.03-10	<0.22-10		
Vanadium	11/11	6.2	31.1	20	43.2	normal	-		<7-500	3-500	2.5-59		
Zinc	10/10	8.4	26.3	16.7	33	normal	-		<5-2900	10-300	4.9-240		
4,4'-DDE	2/11	7.8	85	10	---	nonparametric	3.6	3.9				ND-8800	ND-1770
4,4'-DDT	2/11	18 J	210	22.3	---	nonparametric	3.6	3.9				ND-26000	ND-4610

Notes:

Units are ug/kg for organics, mg/kg for inorganics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
Number of samples may vary based on the number of usable results.

[1] Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.

[2] USGS, 1984. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States. USGS Professional Survey Paper 1270.

[3] Alloway, B.J. 1990. Heavy Metals in Soils. Blackie and Son Ltd. ISBN 0-216-92698-X.

[4] MDE (State of Maryland. Department of the Environment), 2001. Cleanup Standards for Soil and Groundwater. Interim Final Guidance. Update No. 1. August.

[5] NJDEP, 1999. Findings and Recommendations for the Remediation of Historic Pesticide Contamination. Final Report. Historic Pesticide Contamination Task Force. March.

[6] NJDEP, 1993. A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey. Site Remediation Program. Trenton, NJ. September.

TABLE 4.3
OCCURRENCE AND DISTRIBUTION OF ORGANICS IN ALL BACKGROUND SURFACE SOILS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. [1] of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.	Pesticides Range in NJ Soils Agricultural NJDEP[2]	Pesticides Range in NJ Soils Parklands NJDEP[3]
4,4'-DDD	6/20	2.1 J	31 J	4.06	29.8	nonparametric	3.5	4.2	ND-6800	ND-490
4,4'-DDE	17/23	5.7 J	5000	564	4620	nonparametric	3.5	4.2	ND-8800	ND-1770
4,4'-DDT	16/23	4.2 J	15000	917	12900	nonparametric	3.9	4.2	ND-26000	ND-4610
Benz(a)anthracene	1/26	550 J	550 J	210	---	nonparametric	330	440		
Benzo(a)pyrene	2/26	46 J	410 J	199	344	nonparametric	330	440		
Benzo(b)fluoranthene	2/26	76 J	640 J	209	493	nonparametric	330	440		
Benzo(k)fluoranthene	1/26	290 J	290 J	200	---	nonparametric	330	440		
Bis(2-ethylhexyl)phthalate	2/26	210 J	390	206	331	nonparametric	330	440		
Chrysene	2/26	67 J	630 J	208	487	nonparametric	330	440		
Fluoranthene	2/26	87 J	1000 J	223	727	nonparametric	330	440		
Phenanthrene	1/26	790 J	790 J	220	---	nonparametric	330	440		
Pyrene	2/26	120 J	890 J	220	656	nonparametric	330	440		
Tetrachloroethene	1/7	3 J	3 J	5.86	---	nonparametric	12	13		
1,2,3,4,6,7,8-HpCDD	10/10	0.102	0.22	0.148	0.31	normal				
1,2,3,4,6,7,8-HpCDF	6/8	0.0024	0.0042	0.00277	---	normal	0.0006	0.0052		
1,2,3,4,7,8,9-HpCDF	2/10	0.00017 J	0.0003 J	0.000574	---	nonparametric	7E-05	0.0071		
1,2,3,4,7,8-HxCDD	8/10	0.002 J	0.0045 J	0.00277	---	normal	0.0027	0.005		
1,2,3,4,7,8-HxCDF	6/8	0.00092	0.0021	0.00132	---	normal	0.0001	0.0036		
1,2,3,6,7,8-HxCDD	9/10	0.0032	0.0065	0.00405	0.00859	normal	0.0051	0.0051		
1,2,3,6,7,8-HxCDF	4/10	0.0004 J	0.00087 J	0.000507	---	lognormal	0.0001	0.0034		
1,2,3,7,8,9-HxCDD	9/10	0.0037 J	0.0073	0.00481	0.00881	normal	0.0049	0.0049		
1,2,3,7,8,9-HxCDF	2/10	0.00011 J	0.00013 J	0.000375	---	nonparametric	0.0001	0.0047		
1,2,3,7,8-PeCDD	7/10	0.0011 J	0.002 J	0.00142	---	normal	0.0005	0.0047		
1,2,3,7,8-PeCDF	2/10	0.00019 J	0.00029 J	0.000273	---	lognormal	0.0001	0.0029		
2,3,4,6,7,8-HxCDF	6/10	0.00033 J	0.00087 J	0.000653	---	normal	0.0002	0.0038		
2,3,4,7,8-PeCDF	4/10	0.0003 J	0.00073 J	0.0004	---	lognormal	0.0001	0.003		
2,3,7,8-TCDD	2/10	0.00021 J	0.00031 J	0.0004	---	nonparametric	0.0002	0.0045		
2,3,7,8-TCDF	3/10	0.00037 J	0.00096 J	0.000537	---	lognormal	0.0001	0.0045		

TABLE 4.3
OCCURRENCE AND DISTRIBUTION OF ORGANICS IN ALL BACKGROUND SURFACE SOILS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. [1] of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.	Pesticides Range in NJ Soils Agricultural NJDEP[2]	Pesticides Range in NJ Soils Parklands NJDEP[3]
OCDD	10/10	3.36	18.37	7.95	32.8	normal				
Total HpCDD	10/10	0.243	0.512	0.35	0.727	normal				
Total HpCDF	3/10	0.0013	0.0085	0.00309	---	normal	0.0006	0.0082		
Total HxCDD	5/10	0.032	0.0736	0.0385	---	normal	0.0351	0.0526		
Total HxCDF	1/10		0.0091	0.00347	---	normal	0.0002	0.0123		

Notes:

Units are ug/kg.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
Number of samples may vary based on the number of usable results.

[1] Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.

[2] NJDEP, 1999. Findings and Recommendations for the Remediation of Historic Pesticide Contamination. Final Report. Historic Pesticide Contamination Ta

[3] NJDEP, 1993. A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey. Site Remediation Program. Trenton,

TABLE 4.4
OCCURRENCE AND DISTRIBUTION OF ORGANICS IN ALL BACKGROUND SUBSURFACE SOILS
WOD RI REPORT
NASA - WALLOPS ISLAND, VIRGINIA

Substance	Freq. [1] of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.	Pesticides Range in NJ Soils Agricultural NJDEP[2]	Pesticides Range in NJ Soils Parklands NJDEP[3]
4,4'-DDE	3/24	0.36 J	85	5.98	65.7	nonparametric	3.3	8.5	ND-8800	ND-1770
4,4'-DDT	2/24	18 J	210	11.7	162	nonparametric	3.3	8.5	ND-26000	ND-4610
Bis(2-ethylhexyl)phthalate	3/22	37 J	110 J	175	--	nonparametric	330	530		
Di-n-octylphthalate	1/22	69 J	69 J	184	--	nonparametric	330	530		

Notes:

Units are ug/kg.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
Number of samples may vary based on the number of usable results.

[1] Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.A1

[2] NJDEP, 1999. Findings and Recommendations for the Remediation of Historic Pesticide Contamination. Final Report. Historic Pesticide Contamination Tas

[3] NJDEP, 1993. A Summary of Selected Soil Constituents and Contaminants at Background Locations in New Jersey. Site Remediation Program. Trenton, N

TABLE 4.5
OCCURRENCE AND DISTRIBUTION OF SUBSTANCES IN BASEWIDE UNFILTERED GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. of Detection	Range of Positive Detection Min.		Range of Positive Detection Max.		Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.		Detection Limit Range Max.
TPH-DRO	3/7	130 Y	-	710		227	---	lognormal	120	-	500
TPH-GRO	1/4	31 J	-	31	J	25.8	---	*nonparametric	50	-	50
Aluminum	14/15	56.3	-	59200		10000	758000	lognormal	17	-	17
Arsenic	6/19	3.6 J	-	17.7	L	3.93	17.7	nonparametric	1.6	-	3.4
Barium	15/15	8	-	221		52.7	348	lognormal		-	
Beryllium	5/18	0.2	-	1.9		0.357	---	nonparametric	0.1	-	0.5
Cadmium	2/19	0.37	-	0.42		0.61	---	nonparametric	0.2	-	4.8
Calcium	19/19	2310	-	30100		9700	46800	lognormal		-	
Chromium	11/18	0.44	-	45.5		6.52	---	lognormal	0.4	-	6
Cobalt	7/19	0.61	-	18.6		2.77	18.6	nonparametric	0.5	-	10.4
Copper	6/13	1.9	-	15.3		4.28	---	nonparametric	4	-	4
Iron	11/12	452	-	50000	J	11800	2250000	lognormal	16.9	-	16.9
Lead	5/17	1.6 J	-	12.7		3.16	---	lognormal	0.8	-	4
Magnesium	19/19	1140	-	12700		4240	14600	lognormal		-	
Manganese	15/15	4.5	-	3110		303	5790	lognormal		-	
Nickel	4/16	2.2	-	15.1		3.36	---	nonparametric	0.6	-	14.3
Potassium	15/15	676	-	8460		2510	12600	lognormal		-	
Selenium	1/15	2.7 K	-	3.1	K	2.83	---	nonparametric	1.8	-	9
Sodium	18/18	2880 J	-	17800		7420	14800	normal		-	
Vanadium	13/18	0.92	-	69.6		8.23	---	lognormal	0.6	-	0.7
Zinc	9/15	7 K	-	84.5		25.3	---	nonparametric	7	-	7
4,4'-DDT	1/18	0.026 J	-	0.026	J	0.0479	---	nonparametric	0.094	-	0.1
Dieldrin	1/17	0.01 J	-	0.01	J	0.047	---	nonparametric	0.094	-	0.1
Heptachlor Epoxide	1/17	0.027 J	-	0.027	J	0.0248	---	nonparametric	0.047	-	0.05
1,2-Dichloroethene (cis)	1/12	1	-	1		0.542	---	nonparametric	1	-	1
Acetone	2/15	10 L	-	16		4.37	---	nonparametric	5	-	10
Chloroform	2/17	2	-	3		2.32	---	nonparametric	1	-	10

Notes:

Units are ug/L.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
shown on a separate table.
Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.
Number of samples may vary based on the number of usable results.

TABLE 4.6
OCCURRENCE AND DISTRIBUTION OF INORGANICS IN BASEWIDE FILTERED GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Freq. of Detection	Range of Positive Detection Min.		Range of Positive Detection Max.		Mean of All Data	95%UTL	Distributional Shape	Detection Limit Range Min.	Detection Limit Range Max.
Aluminum	3/11	20.2	K	2030	K	202	---	nonparametric	17	68
Antimony	3/10	3		8.5		2.37	---	lognormal	1.6	3
Arsenic	2/13	2.7		3		1.71	---	nonparametric	1.8	3.4
Barium	10/10	6.8		39.2		17.2	83.6	normal	-	
Calcium	13/13	2670		19100		9030	51500	lognormal	-	
Chromium	5/12	0.62		1.7		1.34	---	lognormal	0.3	6.2
Cobalt	2/13	1.7		14.4		2.28	---	nonparametric	0.3	10.1
Copper	2/12	1		4.5		3.08	---	nonparametric	0.7	12.7
Iron	4/7	1720	K	33200		7790	---	lognormal	6.4	100
Lead	1/13	2.3	J	2.3	J	1.58	---	nonparametric	1.3	4
Magnesium	13/13	1050		12900		4420	21600	lognormal	-	
Manganese	7/8	9.4		3080		460	67500	lognormal	6.7	6.7
Nickel	1/11	2.2		2.2		5.18	---	nonparametric	0.7	34.7
Potassium	8/9	790		6310		2400	15300	normal	1830	1830
Sodium	11/11	4300		22400		9330	29700	lognormal	-	
Vanadium	4/12	0.77		1.9		1.77	---	lognormal	0.5	9.8
Zinc	4/10	1.9	J	13.8		5.51	---	nonparametric	7	7

Notes:

Units are ug/L.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are considered as one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.
Number of samples may vary based on the number of usable results.

TABLE 4-7
WOD MONITORING WELL CONSTRUCTION DATA
AND WATER LEVEL MEASUREMENTS
WOD RI REPORT
NASA WFF-WALLOPS ISLAND, VIRGINIA

Monitoring Well	Screened Interval (1) Ft/M	Surveyed ElevationTop of Casing (PVC) Ft/M	Static Water Level Measurement Below Top of Casing Ft/M		Groundwater Level Elevations Ft/M	
			3/3/03	3/19/03	3/3/03	3/19/03
WFF-MW-4	3-23/0.91-7.01	10.33/3.15	6.37/1.94	0.26/1.91	3.96/1.21	4.07/1.24
WFF15-MW3R	21-31/6.40-9.45	32.42/9.88	26.64/8.12	26.20/7.99	5.78/1.76	6.22/1.90
WFF15-GW1	1-5/0.31-1.52	6.27/1.91	2.95/0.90	2.87/0.87	3.32/1.01	3.40/1.04
WFF15-GW2	1-5/0.31-1.52	9.21/2.81	4.58/1.40	4.45/1.35	4.63/1.41	4.76/1.45
WFF15-GW3	7-12/2.13-3.66	8.70/2.65	4.21/1.18	3.88/1.28	449/1.37	4.82/1.47
WFF15-GW7	15-30/4.57-9.14	30.58/9.32	24.46/7.46	24.35/7.42	6.12/1.87	6.23/1.90
WFF16-GW1	17-22/5.18-6.71	30.39/9.26	25.08/7.64	24.78/7.55	5.31/1.62	5.61/1.71
WFF16-GW2D	23-28/7.01-8.53	21.36/6.51	16.53/5.04	16.30/4.97	4.83/1.47	5.06/1.54
WFF16-GW2S	9-19/2.74-5.79	21.26/6.48	16.16/4.97	15.86/4.83	5.10/1.55	5.40/1.65
WFF16-GW3	7-12/2.13-3.66	16.18/4.93	11.30/3.44	11.27/3.44	4.88/1.49	4.91/1.50
WFF16-GW4	6-11/1.83-3.35	14.94/4.55	10.35/3.15	10.30/3.14	4.59/1.40	4.64/1.42
WFF16-GW5	3-8/0.91-2.44	12.47/3.80	8.32/2.45	8.23/2.51	4.15/1.26	4.24/1.29
WFF16-GW6	4-9/1.22-2.74	9.66/2.94	5.30/1.62	5.67/1.73	4.36/1.33	3.99/1.22
WFF16-GW7	4-9/1.22-2.74	8.96/2.73	5.02/1.53	5.15/1.57	3.94/1.20	3.81/1.16

(1) Depth Below Ground Surface

TABLE 4.8
DATA SUMMARY OF FIELD RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**WFF15-GW7**		**WOD-MW4**		**WOD-WFF15-GW1**		**WOD-WFF15-GW2**		**WOD-WFF16-GW1**		**WOD-WFF16-GW2D**		**WOD-WFF16-GW2S**	
Sample Date:	**03/14/03**		**03/17/03**		**03/12/03**		**03/12/03**		**03/18/03**		**03/12/03**		**03/12/03**	
MISCELLANEOUS PARAMETERS														
Alkalinity (mg/L as $CaCO_3$)	50		20		250		50		75		90		160	
Conductivity (mS/cm)	0.116		0.105		0.133		0.141		0.281		0.16		0.258	
Dissolved Oxygen (mg/L)	0.79		3.98		0.71		2.33		6.89		0.49		2.79	
Ferrous Iron (mg/L)	6			ND	2		2.5			ND	9		3.8	
Hydrogen Sulfide (mg/L)	3			ND	0.1		0.5			ND	0.1			ND
Oxidation Reduction Potential (mv)	3		174		38		0		147		-51		-51	
pH (SU)	5.42		6.49		6.89		6.29		6.69		6.32		6.77	
Salinity (%)		ND		ND		ND		ND		ND		ND		ND
Temperature (°C)	13.1		12.3		12.4		8.8		15		14.3		12.1	
Turbidity (NTU)	15		130		2.31		18.09		0.6		7.5		9	
Data Qualifiers:														
ND -- Not Detected.														

Sample ID:	**WOD-WFF16-GW2S**		**WOD-WFF16-GW3**		**WOD-WFF16-GW4**		**WOD-WFF16-GW5**		**WOD-WFF16-GW6**		**WOD-WFF16-GW7**		**WOD-WFF16-MW3R**	
Sample Date:	**03/12/03**		**03/18/03**		**03/14/03**		**03/13/03**		**03/17/03**		**03/18/03**		**03/12/03**	
MISCELLANEOUS PARAMETERS														
Alkalinity (mg/L as $CaCO_3$)	160		75		35		675		50		25		40	
Conductivity (mS/cm)	0.258		0.07		0.04		0.324		0.351		0.573		0.113	
Dissolved Oxygen (mg/L)	2.79		7.98		9.76		3.06		1.3		0.68		8.56	
Ferrous Iron (mg/L)	3.8			ND		ND	0.1			ND		ND		ND
Hydrogen Sulfide (mg/L)		ND		ND		ND		ND		ND		ND		ND
Oxidation Reduction Potential (mv)	-51		283		231		3		148		-51		107	
pH (SU)	6.77		5.01		5.95		7.72		5.88		7.14		6.41	
Salinity (%)		ND		ND		ND		ND		ND		ND		ND
Temperature (°C)	12.1		12.5		8.9		10.2		9.3		10.9		14.8	
Turbidity (NTU)	9		2.31		90.7		27.4		2.9		9		5.8	
Data Qualifiers:														
ND -- Not Detected.														

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	2WFF16-SB1S1		2WFF16-SB2S1		2WFF16-SB3S1		2WFF16-SB4S1		3WFF16-SS1		3WFF16-SS2		3WFF16-SS3		3WFF16-SS4		3WFF16-SS5	
Sample Date:	05/07/98		05/07/98		05/07/98		05/07/98		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00	
Duplicate:																		
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	10600		6880		5560		3290		6030		6400		9350		5960		6130	
Antimony	0.32	U	0.29	U	0.29	U	0.29	U	0.79	U	0.8	U	0.78	U	0.73	U	0.77	U
Arsenic	1.9		1.7		1.1		0.74		1.8		1.2		1.9		0.78		1.2	
Barium	33.3		16.6		14.2		9.8		23.6		18.8		31		12		16.8	
Beryllium	0.16	B	0.05	B	0.07	B	0.04	B	0.15		0.11	U	0.17		0.1	U	0.11	
Cadmium	0.06	U	0.05	U	0.05	U	0.05	U	0.11	U	0.11	U	0.11	U	0.1	U	0.11	U
Calcium	627		146		84.2		91.6		143		372		891		41.8		110	
Chromium	10.5		8.4		6.7		3.6		6.5		8.5		11		4.5		5.9	
Cobalt	2.7		1		0.85		0.74		1.4		1.3		2.7		0.89		1.8	
Copper	8.3	K	3.3	K	2.7	K	1.5	B	2.9		4.4		3.5		1.4		2.3	
Hexavalent Chromium	0.22	R	0.21	R	0.22	R	0.21	R	0.22	U	0.45	U	0.93	U	0.43	U	0.44	U
Iron	8710		5920		4410		2650		5250		6570		10700		3700		4760	
Lead	7.5		30.6		37.1		7.4		37		27.9		8.7		23.5		9.3	
Magnesium	703		443		352		204		402		440		874		218		372	
Manganese	89.9		34.8		27.3		29.8		60.1		47.8		87.1		28		58.2	
Mercury	0.05	B	0.05	U	0.05	U	0.04	U	0.06	U	0.06	U	0.06	U	0.05	U	0.06	U
Nickel	5.7		3.1		2.6		1.1		3.2		3.3		5.1		2.8		3.3	
Potassium	495		410		307		189		241		369		409		183		259	
Selenium	0.56	B	0.52	K	0.38	K	0.61	K	0.18	U	0.2	U	0.21	U	0.18	U	0.27	
Silver	0.11	U	0.1	U	0.1	U	0.1	U	0.15	U	0.15	U	0.15	U	0.14	U	0.15	U
Sodium	345		224		172		102		293		273		439		189		277	
Thallium	0.3	U	0.27	U	0.28	U	0.27	U	0.73	U	0.75	U	0.72	U	0.68	U	0.71	U
Vanadium	16.3		14.8		13.2		5.9		12.6		12.6		19.7		7.1		9.3	
Zinc	29.6		13.8		9.7		7.9		12.9		18.3		15.1		5.3		12.6	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4-Chloroaniline	380	UJ	340	R	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Benz(a)anthracene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Benzo(b)fluoranthene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Benzo(g,h,i)perylene	380	UJ	83	J	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Benzo(k)fluoranthene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Bis(2-ethylhexyl)phthalate	480	B	340	UJ	7400	UJ	350	UJ	2100		1600		1800		820		1000	
Chrysene	380	UJ	78	J	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Fluoranthene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Pyrene	380	UJ	340	UJ	7400	UJ	350	UJ	360	U	370	U	380	U	350	U	370	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	380	U	161		7400	U	350	U	360	U	370	U	380	U	350	U	370	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
2-Hexanone	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
4-Methyl-2-pentanone	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Acetone	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Carbon Disulfide	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Chlorobenzene	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Ethylbenzene	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl Acetate	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene Chloride	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
o-xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Toluene	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U
Xylene (Total)	11	U	10	U	11	U	11	U	11	U	11	U	12	U	11	U	11	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**2WFF16-SB1S1**		**2WFF16-SB2S1**		**2WFF16-SB3S1**		**2WFF16-SB4S1**		**3WFF16-SS1**		**3WFF16-SS2**		**3WFF16-SS3**		**3WFF16-SS4**		**3WFF16-SS5**	
Sample Date:	**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Duplicate:																		
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1260	38	U	170	U	180	U	35	U	360	U	37	U	38	U	35	U	37	U
MISCELLANEOUS PARAMETERS																		
% Solids	NA		NA		NA		NA		90.4		89.3		85.8		93.3		90	
Diesel Range Organics	NA		NA		NA		NA		590	Y	270	Y	4.4	JY	2.7	JY	3.5	JY
Gasoline Range Organics	NA		NA		NA		NA		55	U	56	U	58	U	54	U	56	U
pH (s.u.)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Data Qualifiers:																		
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.																		
D -- Result was reported from a diluted analysis.																		
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).																		
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.																		
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.																		
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.																		
U -- Value is a non-detected result as reported by the laboratory.																		
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.																		
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.																		
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.																		
Y -- Laboratory qualifier not defined.																		
Z -- Laboratory qualifier denoting that positive result is presumptively present.																		
NA -- No result is available/applicable for this parameter in this sample.																		
Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOSS.DBF data retrieved on: 07/29/03																		

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	3WFF16-SS6		3WFF16-SS7		3WFF16-SS8		3WFF16-SS9		3WFF16-SS10		3WFF16-SS10-DUP		3WFF16-SS11		3WFF16-SS12		3WFF16-SS13	
Sample Date:	02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00	
Duplicate:									3WFF16-SS10-DUP		3WFF16-SS10							
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	6760		3560		3760		8280		4020		3900		3400		2850		3230	
Antimony	0.76	U	0.73	U	0.78	U	0.78	U	0.76	U	0.68	U	0.71	U	0.71	U	0.92	
Arsenic	1.1		0.98		0.63	U	1.6		0.77		0.55	U	0.58	U	0.58	U	1.4	
Barium	26.8		14.3		15		22.9		9.4		10		8.3		12.6		13.5	
Beryllium	0.2		0.1	U	0.11	U	0.15		0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Cadmium	0.11	U	0.1	U	0.11	U	0.11	U	0.11	U	0.1	U	0.1	U	0.1	U	0.1	U
Calcium	354		231		342		213		79.4		75.1		67.4		170		406	
Chromium	6.6		4		4.5		9.3		4.7		4.6		3.9		3.4		3.8	
Cobalt	1.8		1		0.84		1.3		0.68		0.65		0.6		0.71		3.2	
Copper	7.8		1.9		2.9		3.6		2.1		1.9		1.4		1.8		2.9	
Hexavalent Chromium	0.46	U	0.44	U	0.46	U	0.44	U	0.42	U	0.42	U	0.42	U	0.43	U	0.44	U
Iron	5440		2720		3130		6100		2920		3020		2340		2340		3110	
Lead	10.5		5.4		12		60.5		25.4		22		23.3		5.4		12	
Magnesium	515		269		274		507		256		253		201		176		214	
Manganese	87.6		55.5		43.2		48.5		23.9		23.1		27.7		33.8		128	
Mercury	0.06	U	0.06	U	0.06	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Nickel	3.7		1.5		2.6		4.1		2.9		2.6		1.6		1.2		1.6	
Potassium	283		204		220		437		228		221		180		149		177	
Selenium	0.21	U	0.2	U	0.2	U	0.18	U	0.19	U	0.65		0.23		0.27		0.47	
Silver	0.16		0.14	U	0.48		0.15	U	0.36		0.24		0.14	U	0.24		0.16	
Sodium	378		187		165		296		222		155		174		153		161	
Thallium	0.71	U	0.67	U	0.73	U	0.72	U	0.7	U	0.63	U	0.66	U	0.66	U	0.68	U
Vanadium	11.1		5.7		9.2		15.4		14.1		13.7		7.6		5.1		6.2	
Zinc	26.1		11		14.1		13.5		10.7		10.3		6.7		13.2		11.1	
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
4-Chloroaniline	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Benz(a)anthracene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	380	U	360	U	380	U	910		1300		1100		340	U	360	U	360	U
Benzo(b)fluoranthene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Benzo(g,h,i)perylene	380	U	360	U	380	U	430		510		590		340	U	360	U	360	U
Benzo(k)fluoranthene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Bis(2-ethylhexyl)phthalate	640		940		560		2800		920		950		1500		740		430	
Chrysene	380	U	360	U	380	U	390		400		410		230	J	360	U	360	U
Fluoranthene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	380	U	360	U	380	U	140	J	110	J	130	J	340	U	360	U	360	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Pyrene	380	U	360	U	380	U	370	U	350	U	350	U	340	U	360	U	360	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	380	U	360	U	380	U	1870		2320		2230		230		360	U	360	U
VOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
2-Hexanone	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
4-Methyl-2-pentanone	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Acetone	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Carbon Disulfide	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Chlorobenzene	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Ethylbenzene	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
m,p-xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methyl Acetate	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Methylene Chloride	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
o-xylene	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Toluene	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U
Xylene (Total)	12	U	11	U	11	U	11	U	11	U	10	U	10	U	11	U	11	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**3WFF16-SS6**		**3WFF16-SS7**		**3WFF16-SS8**		**3WFF16-SS9**		**3WFF16-SS10**		**3WFF16-SS10-DUP**		**3WFF16-SS11**		**3WFF16-SS12**		**3WFF16-SS13**	
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Duplicate:									**3WFF16-SS10-DUP**		**3WFF16-SS10**							
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1260	38	U	37	U	38	U	360	U	350	U	350	U	350	U	35	U	36	U
MISCELLANEOUS PARAMETERS																		
% Solids	86.1		90.5		87.9		90.1		94.1		94.7		96.3		92.9		91.7	
Diesel Range Organics	5.9	JY	98	Y	56	Y	520	Y	800	Y	790	Y	870	Y	17	Y	8.5	Y
Gasoline Range Organics	58	U	55	U	57	U	56	U	53	U	53	U	52	U	54	U	54	U
pH (s.u.)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Data Qualifiers:																		
B -- Positive result is considered to be																		
D -- Result was reported from a dilute																		
J -- Value is considered estimated du																		
K -- Positive result is considered biase																		
L -- Positive result is considered biase																		
R -- Positive result is considered unus																		
U -- Value is a non-detected result as																		
UJ -- Non-detected result is considere																		
UL -- Non-detected result is considere																		
UR -- Non-detected result is consider																		
Y -- Laboratory qualifier not defined.																		
Z -- Laboratory qualifier denoting that p																		
NA -- No result is available/applicable																		
Database source file: S:\RITCHIEM\W																		

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	3WFF16-SS14		3WFF16-SS15		3WFF16-SS16		3WFF16-SS17		WOD-SS-101		WOD-SS-102		WOD-SS-103		WOD-SS-104		WOD-SS-105		WOD-SS-106	
Sample Date:	02/25/00		02/25/00		02/25/00		02/25/00		02/06/03		02/06/03		02/06/03		02/06/03		02/11/03		02/10/03	
Duplicate:																				
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	7270		8490		6350		4730		5720		8190		11600		7990		8180		2860	
Antimony	0.82	U	0.7	U	0.71	U	0.73	U	0.28	B	0.19	B	0.49	B	0.6	B	0.16	UL	0.36	L
Arsenic	1.3		1.4		2.9		0.83		2.1		4.3		6.2		7.6		9.5		1.8	L
Barium	25.3		27.4		33.3		18.7		25		33.9		48.3		81.5		51.9		18.3	
Beryllium	0.12	U	0.2		0.19		0.1	U	0.32	L	0.42	L	0.6	L	0.51	L	0.34		0.19	
Cadmium	0.12	U	0.1	U	0.1	U	0.1	U	0.044		0.035	U	0.037	U	0.14	K	0.083	L	0.24	L
Calcium	633		184		374		351		434		133		323		655		398		425	
Chromium	7.8		8.2		7.4		5.2		6		8.6		11.3		11.2		12.2		3.9	
Cobalt	1.9		1.9		1.5		1.1		1.8	L	2	L	3.2	L	2.4	L	2.7		0.85	
Copper	8.3		3.6		4.3		2.6		4.9	L	3.2	J	5.1	J	6.1	J	6		4.6	
Hexavalent Chromium	0.94	U	0.91	U	0.46	U	0.47	U	NA		NA		NA		NA		NA		NA	
Iron	6810		7130		5070		3820		5420		6650		10200		7490		7160		2570	
Lead	9.2		10.2		19.1		15.2		11.1		16.8		8.4		24.6		39.4		22.4	L
Magnesium	537		646		570		357		534		526		904		832		754		247	
Manganese	72.1		80.7		105		56.5		83.3		66.2		166		161		168		45.4	
Mercury	0.05	U	0.05	U	0.06	U	0.06	U	0.038		0.036		0.052		0.081		0.13		0.03	
Nickel	4.2		4.6		3.4		2.4		3.6		4.5		6.7		5.8		5.2		1.7	
Potassium	354		358		324		252		339		229		391		350		331		140	J
Selenium	0.43		0.6		0.65		0.46		0.53	U	0.45	UL	0.47	UL	0.48	UL	0.49	UL	0.45	UL
Silver	0.16	U	0.32		0.13	U	0.28		0.12	UL	0.1	UL	0.1	UL	0.11	UL	0.38	K	0.44	
Sodium	356		334		392		260		14.8	B	4.2	UL	6.1	B	5.1	B	23.7	B	16.4	B
Thallium	0.76	U	0.65	U	0.66	U	0.68	U	0.18	U	0.15	U	0.16	U	0.16	U	0.16	U	0.15	UL
Vanadium	12		14.1		11.4		8.6		11.6	L	12.2	L	17.7	L	16.7	L	15.1		6.2	
Zinc	53.2		16.6		15.9		21.6		19.9	L	12.2	L	16	L	29.1	L	25.1		27	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4-Chloroaniline	390	U	380	U	380	U	390	U	380	UJ	360	U	380	UJ	380	U	380	U	370	U
Benz(a)anthracene	390	U	380	U	380	U	390	U	140	J	360	U	380	UJ	380	U	51	J	370	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA		NA		380	U	270	J
Benzo(a)pyrene	390	U	380	U	380	U	390	U	150	J	360	U	380	UJ	380	UJ	80	J	370	U
Benzo(b)fluoranthene	390	U	380	U	380	U	390	U	190	J	360	U	380	UJ	380	UJ	150	J	370	U
Benzo(g,h,i)perylene	390	U	200	J	380	U	390	U	95	J	360	U	380	UJ	380	UJ	380	UJ	370	U
Benzo(k)fluoranthene	390	U	380	U	380	U	390	U	100	J	360	U	380	UJ	380	UJ	61	J	370	U
Bis(2-ethylhexyl)phthalate	1800		1100		1400		980		380	UJ	360	U	380	UJ	350	J	43	J	370	U
Chrysene	390	U	180	J	380	U	390	U	150	J	360	U	380	UJ	380	U	79	J	370	U
Fluoranthene	390	U	380	U	380	U	390	U	260	J	360	U	380	UJ	380	U	55	J	370	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	390	U	380	U	380	U	390	U	82	J	360	U	380	UJ	380	UJ	380	UJ	370	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	390	U	380	U	380	U	390	U	380	UJ	360	U	380	UJ	380	U	380	U	370	U
Pyrene	390	U	380	U	380	U	390	U	260	J	360	U	380	UJ	380	U	66	J	370	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	390	U	380		380	U	390	U	1427		360	U	380	U	380	U	542		370	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trichlorobenzene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ
1,2,4-Trimethylbenzene	NA		NA		NA		NA		12	U	13	U	1	J	10	UJ	10	U	10	UJ
1,2-Dichlorobenzene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ
1,3,5-Trimethylbenzene	NA		NA		NA		NA		12	U	13	U	2	J	10	UJ	10	U	10	UJ
1,3-Dichlorobenzene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	UJ	10	U	10	UJ
1,4-Dichlorobenzene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ
2-Butanone	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
2-Hexanone	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
4-Methyl-2-pentanone	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Acetone	12	U	11	U	12	U	12	U	53	B	21	B	44	B	30	B	16	B	10	U
Carbon Disulfide	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Chlorobenzene	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Ethylbenzene	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Isopropylbenzene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	U	10	U	10	U
m,p-xylene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	U	10	U	10	U
Methyl Acetate	NA		NA		NA		NA		2	J	3	J	6	J	11		10	U	10	U
Methylene Chloride	12	U	11	U	12	U	12	U	8	B	5	B	4	B	4	B	5	B	2	B
o-xylene	NA		NA		NA		NA		12	U	13	U	11	UJ	10	U	10	U	10	U
Styrene	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Toluene	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U
Xylene (Total)	12	U	11	U	12	U	12	U	12	U	13	U	11	UJ	10	U	10	U	10	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	3WFF16-SS14		3WFF16-SS15		3WFF16-SS16		3WFF16-SS17		WOD-SS-101		WOD-SS-102		WOD-SS-103		WOD-SS-104		WOD-SS-105		WOD-SS-106	
Sample Date:	02/25/00		02/25/00		02/25/00		02/25/00		02/06/03		02/06/03		02/06/03		02/06/03		02/11/03		02/10/03	
Duplicate:																				
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1260	39	U	380	U	38	U	39	U	38	U	36	U	38	U	39	U	39	U	37	U
MISCELLANEOUS PARAMETERS																				
% Solids	84.9		87.5		86.8		84.7		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	5.6	Y	24	Y	11	Y	34	Y	NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	59	U	220	Z	63	Z	30	JZ	NA		NA		NA		NA		NA		NA	
pH (s.u.)	NA		NA		NA		NA		6.3		5.5		5.9		6.2		6.3	J	7	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA		NA		12500	J	4670	J	14300	J	26000	J	7980	J	7300	J
Data Qualifiers:																				
B -- Positive result is considered to be																				
D -- Result was reported from a dilute																				
J -- Value is considered estimated du																				
K -- Positive result is considered biase																				
L -- Positive result is considered biase																				
R -- Positive result is considered unus																				
U -- Value is a non-detected result as																				
UJ -- Non-detected result is considere																				
UL -- Non-detected result is considere																				
UR -- Non-detected result is consider																				
Y -- Laboratory qualifier not defined.																				
Z -- Laboratory qualifier denoting that p																				
NA -- No result is available/applicable																				
Database source file: S:\RITCHIEM\W																				

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-107		WOD-SS-108		WOD-SS-109		WOD-SS-109-DUP		WOD-SS-110		WOD-SS-111		WOD-SS-112		WOD-SS-113		WOD-SS-114		WOD-SS-115	
Sample Date:	02/10/03		02/10/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/12/03	
Duplicate:					WOD-SS-109-DUP		WOD-SS-109													
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	5090		3960		1640		1500		1390		959		1850		2010		2890		1320	
Antimony	0.14	UL	0.16	UL	0.14	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.17	B
Arsenic	1.9	L	1.9	L	1.4		1.3		1.4		1.1		1.2		1.5		2.9		1.2	
Barium	18.2		20.6		7.2		6.4		5.2		5.4		8.1		8		6.9		4	
Beryllium	0.24		0.25		0.064		0.054		0.053		0.051		0.058		0.073		0.065		0.094	
Cadmium	0.035	L	0.084	L	0.032	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.042	
Calcium	105		344		137		127		113		45.4		64.2		12.8	U	12.6	U	41.8	
Chromium	5.1		4.8		2.8		2.3		2.1		1.5		2.4		2.8		3.1		2.3	
Cobalt	1.2		1.3		0.48		0.42		0.55		0.61		0.77		0.81		0.82		0.32	
Copper	2.5		2.3		1		0.86		0.61		1.3		1.9		0.96		1.7		2.8	B
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	4020		3810		2060		1670		1630		1580		2090		2640		2610		1590	
Lead	5	L	7	L	3.3		3.2		2		2.5		5.2		1.8		6.3		4.7	
Magnesium	302		370		148		113		117		74.3		118		99.2		142		112	
Manganese	41.5		73.5		25.8		23.4		18.5		25		22		25		24.5		13.8	
Mercury	0.018	U	0.02		0.019	U	0.017	U	0.016	U	0.015	U	0.021		0.014	U	0.018	U	0.016	U
Nickel	2.4		2.3		0.81		0.66		0.56		0.55		0.77		0.6		1.6		0.71	
Potassium	181	J	219	J	168		124	B	105	B	81.5	B	106	B	116	B	101	B	109	
Selenium	0.41	UL	0.47	UL	0.42	U	0.48	U	0.47	U	0.47	U	0.47	U	0.48	U	0.47	U	0.41	U
Silver	0.092	U	0.11	U	0.19		0.21		0.19		0.15		0.36		0.22		0.29		0.19	
Sodium	8.1	B	8.9	B	13.2	B	6.9	B	7.8	B	4.5	B	4.9	B	4.4	U	4	U	8.2	B
Thallium	0.14	UL	0.16	UL	0.14	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.14	U
Vanadium	7.7		7.4		4.6		4.3		3.5		2.6		5.4		4.4		7		4.1	
Zinc	8.9		14.7		4.6		3.6		2.7		6.6		5.7		2.9		5.2		4.6	B
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4-Chloroaniline	360	U	380	U	360	UJ	370	UJ	360	UJ	350	UJ	370	UJ	350	U	360	UJ	360	U
Benz(a)anthracene	43	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	37	J
Benzaldehyde	360	U	380	U	360	U	68	J	360	U	350	U	56	J	350	UJ	46	J	360	UJ
Benzo(a)pyrene	47	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Benzo(b)fluoranthene	59	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	43	J
Benzo(g,h,i)perylene	360	U	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Benzo(k)fluoranthene	360	U	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Bis(2-ethylhexyl)phthalate	360	U	380	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Chrysene	41	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	37	J
Fluoranthene	65	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	77	J
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	360	U	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	360	U	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	41	J
Pyrene	86	J	390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	71	J
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	341		390	U	360	U	370	U	360	U	350	U	370	U	350	U	360	U	306	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trichlorobenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
1,2,4-Trimethylbenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dichlorobenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
1,3,5-Trimethylbenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,3-Dichlorobenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,4-Dichlorobenzene	12	U	11	UJ	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
2-Butanone	12	U	2	J	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
2-Hexanone	12	U	11	U	3	B	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
4-Methyl-2-pentanone	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Acetone	18	B	25	B	25	B	41	B	66	B	47	B	20	B	39	B	15	B	15	B
Carbon Disulfide	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Chlorobenzene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Ethylbenzene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Isopropylbenzene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
m,p-xylene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Methyl Acetate	12	U	4	J	10	U	4	J	5	J	3	J	3	J	12	U	10	U	12	U
Methylene Chloride	2	B	2	B	4	B	4	B	4	B	5	B	4	B	8	B	4	B	5	B
o-xylene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Styrene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Toluene	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Xylene (Total)	12	U	11	U	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-107		WOD-SS-108		WOD-SS-109		WOD-SS-109-DUP		WOD-SS-110		WOD-SS-111		WOD-SS-112		WOD-SS-113		WOD-SS-114		WOD-SS-115	
Sample Date:	02/10/03		02/10/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/12/03	
Duplicate:					WOD-SS-109-DUP		WOD-SS-109													
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
PESTICIDES/PCBS	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Aroclor-1260	36	U	38	U	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
MISCELLANEOUS PARAMETERS																				
% Solids	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.2		6.1		6.1	J	6.3	J	7.1	J	6.6	J	5.7	J	5.6	J	5.6	J	5.6	J
TOC By Lloyd Kahn (mg/kg)	8250	J	3920	J	3200	J	7800	J	1670	J	806	J	3690	J	984	J	4130	J	NA	
Data Qualifiers:																				
B -- Positive result is considered to be																				
D -- Result was reported from a dilute																				
J -- Value is considered estimated du																				
K -- Positive result is considered biase																				
L -- Positive result is considered biase																				
R -- Positive result is considered unus																				
U -- Value is a non-detected result as																				
UJ -- Non-detected result is considere																				
UL -- Non-detected result is considere																				
UR -- Non-detected result is consider																				
Y -- Laboratory qualifier not defined.																				
Z -- Laboratory qualifier denoting that p																				
NA -- No result is available/applicable																				
Database source file: S:\RITCHIEM\W																				

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-116		WOD-SS-117		WOD-SS-118		WOD-SS-119		WOD-SS-120		WOD-SS-121		WOD-SS-122		WOD-SS-123		WOD-SS-124		WOD-SS-125	
Sample Date:	02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/13/03		02/13/03		02/13/03		02/13/03	
Duplicate:																				
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	3940		2170		1950		8300		1710		6680		6900		7420		5110		8450	
Antimony	0.43	B	0.5	B	0.18	B	0.66	B	0.26	B	0.15	UL	0.15	UL	0.14	UL	0.18	UL	0.16	UL
Arsenic	2.5		1.9		1.6		8.5	L	1.4		1.9	L	10.7		3.1	L	2.8		7.2	
Barium	13.1		4.5		7.4		38.7		6.6		14.4		24.4		26.6		23.3		40.1	
Beryllium	0.2		0.13		0.15		0.48		0.12		0.16		0.27		0.21		0.16		0.29	
Cadmium	0.059		0.047	U	0.031	U	0.23	K	0.039	U	0.034	UL	0.035	UL	0.033	UL	0.042	U	0.038	UL
Calcium	61.3		28.2		70.4		574		62.5		11.8	U	73		150		617		732	
Chromium	4.6		2.9		2.8		11.5		2.6		6		9.6		8.5		6		11.4	
Cobalt	0.57		0.25		0.45		2.6		0.22		1.5		2		2.3		1.8		2.9	
Copper	3	B	1.6	B	0.97	B	6.5	B	2.2	B	2.7		4		3.8		3.7		7	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	3070		1830		2190		7400		1460		5520	J	5480	J	6840	J	4610	J	7440	J
Lead	13.3		6.9		2.7		33.2		7.1		5.6		10.7		26.9		9.5		25.3	
Magnesium	218		119		139		732		93.2		330		501		608		534		913	
Manganese	14.8		6.7		19.6		140		7.3		41.8	J	94.1	J	81.4	J	91.4	J	161	J
Mercury	0.032		0.022	U	0.016	U	0.063		0.032		0.018	U	0.12		0.016	U	0.038		0.075	
Nickel	2.2		1.1		0.58		5.4		1.3		3		3.6		4.3		3		5.4	
Potassium	126		83.1	B	102		279		114	B	200		277		316		323		634	
Selenium	0.5	U	0.6	U	0.4	U	0.52	UL	0.5	U	0.44	UL	0.46	UL	0.43	UL	0.54	U	0.49	UL
Silver	0.29		0.13		0.088	U	0.28	L	0.22		0.46	B	0.34	B	0.36	B	0.26	B	0.31	B
Sodium	5.3	B	5.5	U	3.7	U	15.6	B	4.6	U	12.9	B	12	B	14.3	B	11.4	B	16.5	B
Thallium	0.21		0.2	U	0.13	U	0.17	U	0.17	U	0.15	U	0.15	U	0.14	U	0.18	U	0.16	U
Vanadium	13.3		8.2		4.7		16.7		8.4		10.1		11.2		15.7		9.4		16.3	
Zinc	8.4		5	B	2.8	B	25.1		4.9	B	8.5		13.8		17.3		13.5		26.4	
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
4-Chloroaniline	380	U	490	U	360	U	390	U	430	U	360	UJ	380	UJ	1900	U	420	UJ	430	U
Benz(a)anthracene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	190	J
Benzaldehyde	58	J	87	J	360	UJ	390	UJ	430	UJ	360	U	380	U	1900	U	57	J	430	U
Benzo(a)pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	550	J	420	U	200	J
Benzo(b)fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	45	J	1900	UJ	420	U	300	J
Benzo(g,h,i)perylene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ	420	U	93	J
Benzo(k)fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ	420	U	150	J
Bis(2-ethylhexyl)phthalate	40	J	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	430	U
Chrysene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	220	J
Fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	280	J
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ	420	U	81	J
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Phenanthrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	77	J
Pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U	420	U	280	J
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	380	U	490	U	360	U	390	U	430	U	NA		45		550		420	U	1871	
VOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,2,4-Trichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ	12	UJ	11	UJ
1,2,4-Trimethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
1,2-Dichlorobenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ	12	UJ	11	UJ
1,3,5-Trimethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
1,3-Dichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ	12	UJ	11	UJ
1,4-Dichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ	12	UJ	11	UJ
2-Butanone	14	U	23	UJ	11	U	10	U	17	U	11	U	18	U	12	U	12	UJ	14	
2-Hexanone	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U	12	UJ	11	U
4-Methyl-2-pentanone	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U	12	UJ	11	U
Acetone	68	B	230	B	52	B	41	B	310	B	36	B	150	U	14	B	32	B	130	
Carbon Disulfide	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U	12	UJ	11	U
Chlorobenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
Ethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
Isopropylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
m,p-xylene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
Methyl Acetate	16	J	95	J	3	J	4	J	160	J	5	J	57	U	12	U	4	J	37	
Methylene Chloride	7	B	5	B	6	B	4	B	8	B	3	B	9	B	1	B	4	B	5	B
o-xylene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
Styrene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U
Toluene	14	U	23	UJ	11	U	10	U	2	J	11	U	14	U	12	U	12	UJ	11	U
Xylene (Total)	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U	12	UJ	11	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-116		WOD-SS-117		WOD-SS-118		WOD-SS-119		WOD-SS-120		WOD-SS-121		WOD-SS-122		WOD-SS-123		WOD-SS-124		WOD-SS-125	
Sample Date:	02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/13/03		02/13/03		02/13/03		02/13/03	
Duplicate:																				
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
PESTICIDES/PCBS	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Aroclor-1260	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U	42	U	43	U
MISCELLANEOUS PARAMETERS																				
% Solids	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	4.6	J	4.3	J	5.6	J	6.2	J	4.8	J	4.9	B	5.8		6		6.5		6.2	
TOC By Lloyd Kahn (mg/kg)	30400	J	13600	J	2090	J	9910	J	51900	J	5000	J	14500	J	13900	J	17800	J	13100	J
Data Qualifiers:																				
B -- Positive result is considered to be																				
D -- Result was reported from a dilute																				
J -- Value is considered estimated du																				
K -- Positive result is considered biase																				
L -- Positive result is considered biase																				
R -- Positive result is considered unus																				
U -- Value is a non-detected result as																				
UJ -- Non-detected result is considere																				
UL -- Non-detected result is considere																				
UR -- Non-detected result is consider																				
Y -- Laboratory qualifier not defined.																				
Z -- Laboratory qualifier denoting that p																				
NA -- No result is available/applicable																				
Database source file: S:\RITCHIEM\W																				

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126		WOD-SS-127		WOD-SS-128		WOD-SS-128-DUP		WOD-SS-129		WOD-SS-130		WOD-SS-131		WOD-SS-132		WOD-SS-133	
Sample Date:	02/21/03		02/21/03		02/21/03		02/21/03		02/19/03		02/19/03		02/19/03		02/19/03		02/19/03	
Duplicate:					WOD-SS-128-DUP		WOD-SS-128										WOD-SS-133-DUP	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	9600		5650		6250		8260		2310		917		5900		2020		8590	
Antimony	0.18	UR	0.2	UR	0.26	UR	0.29	UR	0.18	UR	0.16	UL	0.41	B	0.25	UL	0.27	UR
Arsenic	9		4.1		5.4		6.7		1.8		0.82		3.6		1.4		4.1	
Barium	57.2		44.7		23.2		24.9		6.4		3.3		9		3.6		7.7	
Beryllium	0.32		0.16		0.18		0.21		0.056		0.029		0.17		0.061		0.25	
Cadmium	0.074	L	0.046	UL	0.061	UL	0.067	UL	0.043	UR	0.036	UR	0.093	UR	0.059	UR	0.064	UR
Calcium	829		1120		632		385		111		127		338		684		686	J
Chromium	14.2		8.6		8.4		9.6		2.9		1.5		6.7		2.6		8.5	
Cobalt	3.6		2.1		2.7		2.2		0.4	K	0.14	K	0.94		0.49		1.6	
Copper	8		4.4		5.3		5.4		1.2		0.76		3.5		2.2		5.5	J
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Iron	8670		5130		7340		6500		2390		1500		3150		2030		6820	
Lead	32.8		20.8		15		16.6		5.1		2.4		23.2		9.4		18.3	
Magnesium	1080		695		1040		955		253		156		718		815		1190	
Manganese	245		312		183	J	59.1	J	12.4		2.8		13.1		20.9		32.1	
Mercury	0.089		0.064		0.4	J	0.092	J	0.021	U	0.021	U	0.045	U	0.029		0.05	
Nickel	7.2		4.4		4.4		5.4		1.3		0.62		3.2		1.6		4.5	
Potassium	568		437		446		494		178		99.8	B	442		281		607	
Selenium	0.71		0.59	U	0.79	U	0.86	U	0.55	UL	0.47	UL	1.2	UL	0.76	UL	0.82	UL
Silver	0.35	R	0.14	R	0.27	R	0.24	R	0.13	K	0.1	U	0.27	U	0.65		0.24	K
Sodium	26.9	K	20.1	K	254		224		88.9	B	149	B	484	B	583		1070	J
Thallium	0.18	U	0.2	U	0.26	U	0.29	U	0.18	U	0.16	U	0.4	U	0.25	U	0.27	U
Vanadium	21.6		14.1		14.6		18.7		6.1		3.1		14.3		7.1		21.1	
Zinc	33.2		22.9		16.6		15.6		3.1		1.2		6.6		3.9		10.9	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4-Chloroaniline	430	U	440	U	610	U	620	U	420	UJ	410	UJ	1000	UJ	550	UJ	640	UJ
Benz(a)anthracene	64	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Benzaldehyde	220	J	250	J	580	J	440	J	88	J	300	J	850	J	79	J	250	J
Benzo(a)pyrene	68	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	UJ	640	UJ
Benzo(b)fluoranthene	96	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	UJ	640	UJ
Benzo(g,h,i)perylene	430	U	440	U	610	U	620	U	420	U	410	U	1000	U	550	UJ	640	UJ
Benzo(k)fluoranthene	430	U	440	U	610	U	620	U	420	U	410	U	1000	U	550	UJ	640	UJ
Bis(2-ethylhexyl)phthalate	51	J	440	U	82	J	620	U	420	U	410	U	100	J	550	U	640	U
Chrysene	62	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Fluoranthene	100	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Hmw Pah (sediment)	NA		NA		610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Indeno(1,2,3-cd)pyrene	430	U	440	U	610	U	620	U	420	U	410	U	1000	U	550	UJ	640	UJ
Lmw Pah (sediment)	NA		NA		610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Phenanthrene	48	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Pyrene	110	J	440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Total Pah (sediment)	NA		NA		610	U	620	U	420	U	410	U	1000	U	550	U	640	U
Total Pah (soil)	548		440	U	610	U	620	U	420	U	410	U	1000	U	550	U	640	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trichlorobenzene	2	J	14	U	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
1,2,4-Trimethylbenzene	4	J	5	J	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
1,2-Dichlorobenzene	3	J	2	J	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
1,3,5-Trimethylbenzene	4	J	4	J	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
1,3-Dichlorobenzene	3	J	3	J	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
1,4-Dichlorobenzene	3	J	3	J	22	U	22	U	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ
2-Butanone	28		35		22	U	23		12	U	28		43	U	20	U	26	U
2-Hexanone	4	J	6	J	22	U	22	U	12	U	14	U	20	J	20	U	26	UJ
4-Methyl-2-pentanone	2	J	3	J	22	U	22	U	12	U	14	U	43	U	20	U	26	U
Acetone	410	B	410	B	110	B	170	B	30	B	200		79	B	36	B	140	B
Carbon Disulfide	14	U	14	U	22	U	22	U	12	U	6	J	43	U	20	U	26	U
Chlorobenzene	14	U	1	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Ethylbenzene	2	J	2	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Isopropylbenzene	2	J	2	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
m,p-xylene	4	J	4	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Methyl Acetate	8	J	30		31		48		6	J	26		43	U	4	J	19	J
Methylene Chloride	28	B	5	B	10	B	17	B	4	B	6	B	12	B	6	B	6	B
o-xylene	2	J	2	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Styrene	2	J	2	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Toluene	14	U	1	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ
Xylene (Total)	6	J	6	J	22	U	22	U	12	U	14	U	43	U	20	U	26	UJ

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126		WOD-SS-127		WOD-SS-128		WOD-SS-128-DUP		WOD-SS-129		WOD-SS-130		WOD-SS-131		WOD-SS-132		WOD-SS-133	
Sample Date:	02/21/03		02/21/03		02/21/03		02/21/03		02/19/03		02/19/03		02/19/03		02/19/03		02/19/03	
Duplicate:					WOD-SS-128-DUP		WOD-SS-128										WOD-SS-133-DUP	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
PESTICIDES/PCBS	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
Aroclor-1260	43	U	44	U	62	U	63	U	42	UJ	41	UJ	100	UJ	56	UJ	65	UJ
MISCELLANEOUS PARAMETERS																		
% Solids	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.5		5.9		6.6		6.7		6.7		6.1		6.3		6.8		6.3	
TOC By Lloyd Kahn (mg/kg)	36500	J	46900	J	63100	J	41100	J	10200	J	26600	J	39600	J	59600	J	80900	J
Data Qualifiers:																		
B -- Positive result is considered to be																		
D -- Result was reported from a dilute																		
J -- Value is considered estimated du																		
K -- Positive result is considered biase																		
L -- Positive result is considered biase																		
R -- Positive result is considered unus																		
U -- Value is a non-detected result as																		
UJ -- Non-detected result is considere																		
UL -- Non-detected result is considere																		
UR -- Non-detected result is consider																		
Y -- Laboratory qualifier not defined.																		
Z -- Laboratory qualifier denoting that p																		
NA -- No result is available/applicable																		
Database source file: S:\RITCHIEM\W																		

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-133-DUP		WOD-SS-134		WOD-SS-135		WOD-SS-136		WOD-SS-137		WOD-SS-138		WOD-SS-139	
Sample Date:	**02/19/03**		**02/26/03**		**02/26/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/21/03**	
Duplicate:	**WOD-SS-133**													
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	8210		4870		14600	J	16300		19500		5180		9150	
Antimony	0.21	UR	0.25	U	0.49	UJ	0.54	UR	0.42	UR	0.25	UR	0.23	UR
Arsenic	3.9		2.5		7.6	J	5.6		8.9		4		9.8	
Barium	6.7		11		20.9	J	49.4		50.2		8.4		50.4	
Beryllium	0.21		0.13		0.45	J	0.45		0.49		0.11		0.33	
Cadmium	0.049	UR	0.058	U	0.11	UJ	0.12	UR	0.098	UR	0.058	UR	0.053	UR
Calcium	410	J	755		3060	J	3880		926		145		442	
Chromium	8.2		5.4		20.9	J	19.8		20.1		6.1		16.4	
Cobalt	1.2		2.1		3.2	J	3.2		3		0.81	K	3.9	
Copper	3	J	3.9		21.1	J	10.7		11.7		2.5		11	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	5950		5180		11000	J	10300		14200		7040		10200	
Lead	12.4		9.9		59.6	J	51.9		71		14.3		35.7	
Magnesium	899		1040		4170	J	2840		1550		293		1190	
Manganese	21.7		16.1		54	J	45.3		38.6		11.2		214	
Mercury	0.037		0.052		0.19	J	0.16		0.13		0.044		0.33	
Nickel	3.8		3.7		14.2	J	12.2		10.2		2.5		6.8	
Potassium	457		308		1170	J	811		747		263		517	
Selenium	0.63	UL	0.75	U	1.5	J	1.6	UL	1.3	UL	0.78	L	0.69	U
Silver	0.14	K	0.4		1.6	J	2.3		1.1	K	0.19	K	0.38	R
Sodium	634	J	645		3820	J	426	B	94.4	B	13.7	B	123	
Thallium	0.21	U	0.25	U	0.49	UJ	0.54	U	0.42	U	0.25	U	0.23	U
Vanadium	17.8		12.9		70.7	J	48.4		42.8		14.8		23.5	
Zinc	8.2		12.6		48.1	J	34.5		28.5		6.4		31.7	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4-Chloroaniline	540	UJ	620	U	1200	UJ	1300	U	970	UJ	550	UJ	540	U
Benz(a)anthracene	540	U	620	U	1200	UJ	1300	U	970	U	550	U	210	J
Benzaldehyde	140	J	180	J	1500	J	710	J	810	J	110	J	540	UJ
Benzo(a)pyrene	540	UJ	620	U	1200	UJ	1300	U	970	UJ	550	U	360	J
Benzo(b)fluoranthene	540	UJ	620	U	180	J	1300	U	970	UJ	550	U	430	J
Benzo(g,h,i)perylene	540	UJ	620	U	1200	UJ	1300	U	970	UJ	550	U	540	U
Benzo(k)fluoranthene	540	UJ	620	U	1200	UJ	1300	U	970	UJ	550	U	180	J
Bis(2-ethylhexyl)phthalate	540	U	70	J	170	J	1300	U	970	U	550	U	540	U
Chrysene	540	U	620	U	1200	UJ	1300	U	970	U	550	U	270	J
Fluoranthene	540	U	620	U	160	J	1300	U	970	U	550	U	210	J
Hmw Pah (sediment)	540	U	620	U	330		1300	U	970	U	550	U	1300	
Indeno(1,2,3-cd)pyrene	540	UJ	620	U	1200	UJ	1300	U	970	UJ	550	U	230	J
Lmw Pah (sediment)	540	U	620	U	1200	U	1300	U	970	U	550	U	63	
Phenanthrene	540	U	620	U	1200	UJ	1300	U	970	U	550	U	63	J
Pyrene	540	U	620	U	170	J	1300	U	970	U	550	U	250	J
Total Pah (sediment)	540	U	620	U	330		1300	U	970	U	550	U	1363	
Total Pah (soil)	540	U	620	U	510		1300	U	970	U	550	U	2203	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trichlorobenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
1,2,4-Trimethylbenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
1,2-Dichlorobenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
1,3,5-Trimethylbenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
1,3-Dichlorobenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
1,4-Dichlorobenzene	25	UJ	23	UJ	74	UJ	64	UJ	43	UJ	21	UJ	16	U
2-Butanone	22	J	23	U	74	UJ	100		43	U	21	U	21	
2-Hexanone	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
4-Methyl-2-pentanone	25	U	23	U	74	UJ	64	U	43	U	21	U	16	U
Acetone	210		71	B	320	B	920		270		160		180	
Carbon Disulfide	25	U	6	J	13	J	64	U	43	U	21	U	16	U
Chlorobenzene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
Ethylbenzene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
Isopropylbenzene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
m,p-xylene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
Methyl Acetate	38		23	U	69	J	210		36	J	39		39	
Methylene Chloride	13	B	5	B	25	B	19	B	12	B	13	B	19	B
o-xylene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
Styrene	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U
Toluene	25	U	23	U	74	UJ	64	U	43	U	21	U	16	U
Xylene (Total)	25	U	23	UJ	74	UJ	64	U	43	U	21	U	16	U

TABLE 5.1
SUMMARY OF SURFACE SOIL SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-133-DUP		WOD-SS-134		WOD-SS-135		WOD-SS-136		WOD-SS-137		WOD-SS-138		WOD-SS-139	
Sample Date:	**02/19/03**		**02/26/03**		**02/26/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/21/03**	
Duplicate:	**WOD-SS-133**													
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1260	54	UJ	62	U	220	J	180	J	96	UJ	56	UJ	56	U
MISCELLANEOUS PARAMETERS														
% Solids	NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.3		6.8		6.7		6.2		5.3		4.7		6.4	
TOC By Lloyd Kahn (mg/kg)	8490	J	51500	J	175000	J	191700	J	143300	J	69100	J	42100	J
Data Qualifiers:														
B -- Positive result is considered to be														
D -- Result was reported from a dilute														
J -- Value is considered estimated du														
K -- Positive result is considered biase														
L -- Positive result is considered biase														
R -- Positive result is considered unus														
U -- Value is a non-detected result as														
UJ -- Non-detected result is considere														
UL -- Non-detected result is considere														
UR -- Non-detected result is consider														
Y -- Laboratory qualifier not defined.														
Z -- Laboratory qualifier denoting that p														
NA -- No result is available/applicable														
Database source file: S:\RITCHIEM\W														

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	2WFF16-SB1S2-DUP		2WFF16-SB1S2		2WFF16-SB2S2		2WFF16-SB3S2		2WFF16-SB4S2		WOD-SU-101-1315		WOD-SU-102-1517	
Sample Date:	**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**02/06/03**		**02/06/03**	
Duplicate:	**2WFF16-SB1S2**		**2WFF16-SB1S2-DUP**											
Top Depth:	**23.0**		**23.0**		**23.0**		**18.0**		**17.0**		**13.0**		**15.0**	
Bottom Depth:	**24.0**		**24.0**		**24.0**		**20.0**		**19.0**		**15.0**		**17.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	2930	J	917		1070		2180		1220	J	5080		2200	
Antimony	0.33	U	0.31	U	0.3	U	0.32	U	0.32	U	0.66	B	0.14	UL
Arsenic	0.38	U	0.37	U	0.35	U	0.37	U	0.38	U	2		1.1	
Barium	5.9		2.9		2.8		4.1		3.7		21.5		8.9	
Beryllium	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.25	L	0.13	L
Cadmium	0.06	U	0.05	U	0.05	U	0.06	U	0.06	U	0.033	U	0.032	U
Calcium	148		32.5	B	23.4	B	102		99.9		219		72.3	
Chromium	3.1		1.4		1.3		2.2		1.9		9.5		2.3	
Cobalt	0.11	U	0.11	U	0.13		0.13		0.11	U	1.6	L	0.24	B
Copper	0.24	B	0.22	U	0.24	B	0.22	B	0.23	U	2	B	0.48	B
Cyanide	0.44	U	0.42	U	0.39	U	0.59		0.48	U	NA		NA	
Hexavalent Chromium	0.22	R	0.23	R	0.21	R	0.21	R	0.23	R	NA		NA	
Iron	1520		516		500		1690		828	J	2710		1100	
Lead	4.4		2.6	B	4.9		2	B	2.3	B	1.9		6.7	
Magnesium	167		43.2		43.4		100		68.6		219		57.7	
Manganese	7.8		4.7		2.3		4.7		3.9		96.2		21	
Mercury	0.06	U	0.04	U	0.05	U	0.05	U	0.06	U	0.017	U	0.014	U
Nickel	0.19	U	0.18	U	0.18	U	0.19	U	0.19	U	1.7		0.53	B
Potassium	168		85.8	B	100	B	136		107	B	201		70.9	B
Selenium	0.33	U	0.31	U	0.35	K	0.32	U	0.34	K	0.42	U	0.41	U
Silver	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.093	UL	0.091	UL
Sodium	250		109		70.2		132		83		16.3	B	3.8	U
Thallium	0.31	U	0.29	U	0.28	U	0.3	U	0.3	U	0.14	U	0.14	U
Vanadium	5.4		1.8		2		3.4		2.7		5.5	L	3.7	L
Zinc	1.2	B	0.41	B	0.56	B	0.87	B	0.78	B	3.7	L	0.87	B
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
2-Methylnaphthalene	22000	J	16000	J	29000	J	370	UJ	310	J	360	U	330	U
4-Chloroaniline	390	UJ	380	UJ	3700	UJ	370	UJ	400	R	360	U	330	U
Acenaphthene	390	UJ	380	UJ	1800	J	370	UJ	54	J	360	U	330	U
Benz(a)anthracene	390	UJ	380	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	390	UJ	380	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzo(b)fluoranthene	390	UJ	380	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Bis(2-ethylhexyl)phthalate	4600	B	2900	B	5500	B	360	B	940	B	360	U	330	U
Chrysene	390	UJ	380	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Dibenzofuran	390	UJ	380	UJ	1100	J	370	UJ	400	UJ	360	U	330	U
Fluoranthene	390	UJ	380	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Fluorene	2100	J	380	UJ	2800	J	370	UJ	100	J	360	U	330	U
Naphthalene	390	UJ	2900	J	7700	J	370	UJ	400	UJ	360	U	330	U
Phenanthrene	5700	J	4100	J	7800	J	43	J	290	J	360	U	330	U
Pyrene	290	J	230	J	580	J	370	UJ	400	UJ	360	U	330	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		12	U	42	
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		12	U	93	
2-Butanone	120	U	110	U	110	UJ	11	U	120	U	12	U	11	U
2-Hexanone	120	U	110	U	110	UJ	11	U	120	U	12	U	11	U
Acetone	120	U	110	U	110	UJ	11	U	120	U	15	B	15	B
Benzene	120	U	110	U	110	UJ	11	U	120	U	12	U	11	U
Carbon Disulfide	120	U	110	U	110	UJ	11	U	120	U	12	U	11	U
Chloroethane	120	U	56	K	110	J	11	U	120	U	12	U	13	
Ethylbenzene	1000		1200	J	2200	J	11	U	120	U	12	U	11	U
m,p-xylene	NA		NA		NA		NA		NA		12	U	10	J

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**2WFF16-SB1S2-DUP**		**2WFF16-SB1S2**		**2WFF16-SB2S2**		**2WFF16-SB3S2**		**2WFF16-SB4S2**		**WOD-SU-101-1315**		**WOD-SU-102-1517**	
Sample Date:	**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**02/06/03**		**02/06/03**	
Duplicate:	**2WFF16-SB1S2**		**2WFF16-SB1S2-DUP**											
Top Depth:	**23.0**		**23.0**		**23.0**		**18.0**		**17.0**		**13.0**		**15.0**	
Bottom Depth:	**24.0**		**24.0**		**24.0**		**20.0**		**19.0**		**15.0**		**17.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Methyl Acetate	NA		NA		NA		NA		NA		12	U	11	U
Methylene Chloride	120	U	110	U	110	UJ	11	U	120	U	4	B	8	B
o-xylene	NA		NA		NA		NA		NA		12	U	9	J
Tetrachloroethene	81	J	320		110	UJ	11	U	120	U	12	U	3	J
Toluene	320		1400		1700	J	11	U	120	U	12	U	11	U
Xylene (Total)	6600	J	9200	J	13000	J	11	U	64	J	12	U	20	
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1254	39	U	38	U	37	U	38	U	40	U	37	U	34	U
Data Qualifiers:														
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.														
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).														
JN														
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.														
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.														
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.														
U -- Value is a non-detected result as reported by the laboratory.														
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.														
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.														
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.														
NA -- No result is available/applicable for this parameter in this sample.														
Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOSB.DBF data retrieved on: 07/29/03														

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SU-103-1113		WOD-SU-104-1012		WOD-SU-105-0507		WOD-SU-106-0608		WOD-SU-107-0608		WOD-SU-108-0608		WOD-SU-109-0608	
Sample Date:	02/06/03		02/06/03		02/11/03		02/10/03		02/10/03		02/10/03		02/11/03	
Duplicate:														
Top Depth:	11.0		10.0		5.0		6.0		6.0		6.0		6.0	
Bottom Depth:	13.0		12.0		7.0		8.0		8.0		8.0		8.0	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	3180		1300		11700		2100		2060		1470		968	
Antimony	0.4	B	0.13	UL	0.16	UL	0.15	UL	0.15	UL	0.15	UL	0.15	U
Arsenic	1.1		0.81		2.8	L	1.1	L	1.3	L	1.3	L	0.87	
Barium	12.3		8.8		27.5		16		8.9		20.6		4.7	
Beryllium	0.2	L	0.13	L	0.24		0.098		0.12		0.12		0.029	
Cadmium	0.034	U	0.031	U	0.037	UL	0.034	UL	0.036	UL	0.034	UL	0.034	U
Calcium	29.2	B	31.8	B	116		77.5		56.6		70.6		1000	
Chromium	3.1		1.7		9.2		1.6		2.5		2.3		1.2	
Cobalt	2	L	0.3	L	3.2	K	0.25		0.26		0.1		0.087	
Copper	1.2	B	0.37	B	2.8		0.6	B	0.61	B	0.6	B	0.2	U
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	2090		760		6640		1210		1460		1670		606	
Lead	1.4		0.87		3.7		0.57	L	0.8	L	0.93	L	0.45	
Magnesium	234		75.9		572		58.9		78.3		43.7		51.7	
Manganese	44.5		4		64.2		8.1		13		7.4		5.7	
Mercury	0.017	U	0.017	U	0.018	U	0.014	U	0.018	U	0.018	U	0.016	U
Nickel	2		0.62		5.5		0.72		0.8		0.44		0.43	
Potassium	137		57.3	B	327		66.1	B	73.4	B	43.3	B	60.1	B
Selenium	0.44	U	0.39	U	0.48	UL	0.44	UL	0.46	UL	0.44	UL	0.44	U
Silver	0.098	UL	0.088	UL	0.35	K	0.098	U	0.1	U	0.098	U	0.098	U
Sodium	4.8	B	3.6	U	25	B	8.7	B	4.9	B	4.1	U	39.6	B
Thallium	0.15	U	0.13	U	0.16	U	0.15	UL	0.15	UL	0.18	L	0.15	U
Vanadium	4.4	L	2.2	L	12.9		2		3.1		2.1		1.2	
Zinc	3.4	L	1.1	B	8.4	L	1.9		1.6		1.1		0.76	
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
2-Methylnaphthalene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
4-Chloroaniline	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Acenaphthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benz(a)anthracene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzaldehyde	NA		NA		360	UJ	340	U	360	U	350	U	350	UJ
Benzo(a)pyrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzo(b)fluoranthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Bis(2-ethylhexyl)phthalate	360	UJ	37	J	360	U	340	U	360	U	350	U	350	U
Chrysene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Dibenzofuran	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Fluoranthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Fluorene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Naphthalene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Phenanthrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Pyrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
VOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,2,4-Trimethylbenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,3,5-Trimethylbenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
2-Butanone	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
2-Hexanone	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Acetone	12	B	18	B	8	B	10	U	12	U	16	B	11	B
Benzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Carbon Disulfide	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Chloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Ethylbenzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
m,p-xylene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-SU-103-1113**		**WOD-SU-104-1012**		**WOD-SU-105-0507**		**WOD-SU-106-0608**		**WOD-SU-107-0608**		**WOD-SU-108-0608**		**WOD-SU-109-0608**	
Sample Date:	**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**		**02/11/03**	
Duplicate:														
Top Depth:	**11.0**		**10.0**		**5.0**		**6.0**		**6.0**		**6.0**		**6.0**	
Bottom Depth:	**13.0**		**12.0**		**7.0**		**8.0**		**8.0**		**8.0**		**8.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Methyl Acetate	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Methylene Chloride	3	B	5	B	2	B	2	B	4	B	6	B	4	B
o-xylene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Tetrachloroethene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Toluene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Xylene (Total)	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1254	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Data Qualifiers:														
B -- Positive result is considered to b														
J -- Value is considered estimated du														
JN														
K -- Positive result is considered bias														
L -- Positive result is considered bias														
R -- Positive result is considered unu														
U -- Value is a non-detected result as														
UJ -- Non-detected result is consider														
UL -- Non-detected result is consider														
UR -- Non-detected result is consider														
NA -- No result is available/applicable														
Database source file: S:\RITCHIEM\W														

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SU-110-0204		WOD-SU-111-0507		WOD-SU-112-0204		WOD-SU-113-0406		WOD-SU-114-0406		WOD-SU-115-0305		WOD-SU-116-0204	
Sample Date:	02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/12/03		02/12/03	
Duplicate:														
Top Depth:	2.0		5.0		2.0		4.0		4.0		3.0		2.0	
Bottom Depth:	4.0		7.0		4.0		6.0		6.0		5.0		4.0	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	4100		47600		1230		613		1980		1160		4870	
Antimony	0.15	U	18.3	L	0.14	U	0.14	U	0.13	U	0.24	B	0.17	UL
Arsenic	2.1		11.9	L	0.9		0.46		1.3		2.2		2	
Barium	13.3		983		3.4		4.1		4.2		7.9		20.9	
Beryllium	0.11		0.12		0.034		0.024	U	0.058		0.12		0.2	
Cadmium	0.035	U	23.4	L	0.033	U	0.033	U	0.031	U	0.54		0.039	U
Calcium	12	U	55400		22.4		11.3	U	10.8	U	24.4		53.8	
Chromium	3.9		78.6		1.9		0.78		2		2.9		3.1	
Cobalt	0.73		6.3	K	0.62		0.22		0.29		0.24		4.5	
Copper	1.1		3040		0.73		0.31		1.1		1.5	B	1.6	B
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	2570		127000		1030		672		3000		1700		2030	
Lead	2.4		1100		3		0.78		2.6		1		2.6	
Magnesium	197		3470		89.8		42.8		74.5		49.5		156	
Manganese	30.4		1100		30.3		5		6.7		9.3		341	
Mercury	0.016	U	0.18		0.017	U	0.018	U	0.019	U	0.016	U	0.019	U
Nickel	1.3		56.8		0.59		0.3	B	0.49		0.43		1.7	
Potassium	161	B	1830	K	70.6	B	59.5	B	106	B	45.9	B	126	
Selenium	0.45	U	0.5	UL	0.42	U	0.42	U	0.4	U	0.41	U	0.5	U
Silver	0.2		389		0.11		0.094	U	0.18		0.091	U	0.11	U
Sodium	8	B	1060	K	3.9	U	3.9	U	3.7	U	6	B	5.9	B
Thallium	0.15	U	3.5	K	0.14	U	0.14	U	0.13	U	0.14	U	0.17	U
Vanadium	5.7		92		2.7		1.1		6.1		2.6		4.5	
Zinc	4.2		3550		2.7		0.75		1.5		2.6	B	5	B
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
2-Methylnaphthalene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
4-Chloroaniline	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Acenaphthene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Benz(a)anthracene	350	U	45	J	340	U	350	U	360	U	350	U	390	U
Benzaldehyde	350	UJ	45	J	340	UJ	350	UJ	360	UJ	350	UJ	380	UJ
Benzo(a)pyrene	350	U	55	J	340	U	350	UJ	360	U	350	U	390	U
Benzo(b)fluoranthene	350	U	88	J	340	U	350	UJ	360	U	350	U	390	U
Bis(2-ethylhexyl)phthalate	350	U	78	J	340	U	350	U	360	U	350	U	380	U
Chrysene	350	U	73	J	340	U	350	U	360	U	350	U	390	U
Dibenzofuran	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Fluoranthene	350	U	45	J	340	U	350	U	360	U	350	U	40	J
Fluorene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Naphthalene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Phenanthrene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
Pyrene	350	U	93	J	340	U	350	U	360	U	350	U	390	U
VOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,2,4-Trimethylbenzene	12	U	4	J	11	U	12	U	10	U	9	U	14	U
1,3,5-Trimethylbenzene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
2-Butanone	12	U	25	J	11	U	12	U	10	U	9	U	14	U
2-Hexanone	12	U	14	UJ	11	U	12	U	10	U	9	U	3	B
Acetone	17	B	140	J	68	B	7	B	13	B	13	B	10	B
Benzene	12	U	42	J	11	U	12	U	10	U	9	U	14	U
Carbon Disulfide	12	U	4	J	11	U	12	U	10	U	9	U	14	U
Chloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Ethylbenzene	12	U	2	J	11	U	12	U	10	U	9	U	14	U
m,p-xylene	12	U	4	J	11	U	12	U	10	U	9	U	14	U

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-SU-110-0204**		**WOD-SU-111-0507**		**WOD-SU-112-0204**		**WOD-SU-113-0406**		**WOD-SU-114-0406**		**WOD-SU-115-0305**		**WOD-SU-116-0204**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**		**02/12/03**	
Duplicate:														
Top Depth:	**2.0**		**5.0**		**2.0**		**4.0**		**4.0**		**3.0**		**2.0**	
Bottom Depth:	**4.0**		**7.0**		**4.0**		**6.0**		**6.0**		**5.0**		**4.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Methyl Acetate	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Methylene Chloride	2	B	11	B	10	B	7	B	7	B	5	B	5	B
o-xylene	12	U	1	J	11	U	12	U	10	U	9	U	14	U
Tetrachloroethene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Toluene	12	U	10	J	11	U	12	U	10	U	9	U	14	U
Xylene (Total)	12	U	5	J	11	U	12	U	10	U	9	U	14	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1254	36	U	150	R	35	U	35	U	37	U	35	U	40	U
Data Qualifiers:														
B -- Positive result is considered to b														
J -- Value is considered estimated du														
JN														
K -- Positive result is considered bias														
L -- Positive result is considered bias														
R -- Positive result is considered unu														
U -- Value is a non-detected result as														
UJ -- Non-detected result is consider														
UL -- Non-detected result is consider														
UR -- Non-detected result is consider														
NA -- No result is available/applicable														
Database source file: S:\RITCHIEM\V														

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SU-117-0102		WOD-SU-118-0406-DUP		WOD-SU-118-0406		WOD-SU-119-0507		WOD-SU-120-0406		WOD-SU-121-1012		WOD-SU-122-1012-DUP	
Sample Date:	02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/13/03		02/13/03	
Duplicate:			WOD-SU-118-0406		WOD-SU-118-0406-DUP								WOD-SU-122-1012	
Top Depth:	1.0		4.0		4.0		5.0		4.0		10.0		10.0	
Bottom Depth:	2.0		6.0		6.0		7.0		6.0		12.0		12.0	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3520		2600		3820		8190		3920		6050		8280	
Antimony	0.19	B	0.22	B	0.21	B	0.31	B	0.2	B	0.15	UL	0.14	UL
Arsenic	0.79		2.3		2.7		2	L	1.3		1.5		1.6	
Barium	11.6		12.2		17.5		24.1		18.1		18.5		30.4	
Beryllium	0.2		0.18		0.21		0.37		0.27		0.19		0.23	
Cadmium	0.034	U	0.033	U	0.032	U	0.062	K	0.034		0.034	UL	0.034	UL
Calcium	51.3		43.7		50.9		98.2		99.7		11.8	U	27.4	B
Chromium	3		3.9		3.3		6.5		4.3		4.5		7.9	
Cobalt	0.68		0.42		0.33		2		1.2		0.55		0.86	
Copper	0.97	B	1	B	1.5	B	2.5	B	1.2	B	1.2	B	1.3	B
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	2470		2220		2210		5740		2820		2680	J	3110	J
Lead	2.9		1.4		1.3		3.9		3.8		1.6		2.1	
Magnesium	252		144		131		433		308		278		389	
Manganese	11.9		23		15.3		48.7		37.9		21.3	J	47.9	J
Mercury	0.017	U	0.017	U	0.018	U	0.015	U	0.019	U	0.019	U	0.017	U
Nickel	1.9		0.94		1.1		4.1		2.2		1.4		1.7	
Potassium	80.8	B	95.5	B	87.7	B	162		112		211		347	
Selenium	0.44	U	0.43	U	0.41	U	0.44	UL	0.43	U	0.44	UL	0.43	UL
Silver	0.11		0.095	U	0.091	U	0.21	L	0.095	U	0.26	B	0.18	B
Sodium	6.1	B	3.9	U	4.5	B	6.7	B	4	U	14.1	B	12.9	B
Thallium	0.15	U	0.14	U	0.14	U	0.15	U	0.14	U	0.15	U	0.14	U
Vanadium	4.6		4.3		4.2		10.2		5.8		6.3		7.7	
Zinc	6		2.8	B	3.3	B	8.1		6.6		3.3		3.5	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
2-Methylnaphthalene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
4-Chloroaniline	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Acenaphthene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Benz(a)anthracene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Benzaldehyde	370	UJ	360	UJ	360	UJ	350	UJ	370	UJ	370	U	360	U
Benzo(a)pyrene	370	U	360	U	360	U	350	U	370	UJ	370	U	360	U
Benzo(b)fluoranthene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Bis(2-ethylhexyl)phthalate	370	U	360	U	360	U	350	U	66	J	370	U	360	U
Chrysene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Dibenzofuran	370	U	360	U	360	U	350	U	370	UJ	370	U	360	U
Fluoranthene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Fluorene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Naphthalene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
Phenanthrene	370	U	360	U	360	U	350	U	370	UJ	370	U	360	U
Pyrene	370	U	360	U	360	U	350	U	370	U	370	U	360	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,2,4-Trimethylbenzene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
1,3,5-Trimethylbenzene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
2-Butanone	15	U	9	U	10	U	12	U	10	U	12	U	11	U
2-Hexanone	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Acetone	22	B	12	B	10	B	22	B	27	B	9	B	8	B
Benzene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Carbon Disulfide	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Chloroethane	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Ethylbenzene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
m,p-xylene	15	U	9	U	10	U	12	U	10	U	12	U	11	U

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-SU-117-0102**		**WOD-SU-118-0406-DUP**		**WOD-SU-118-0406**		**WOD-SU-119-0507**		**WOD-SU-120-0406**		**WOD-SU-121-1012**		**WOD-SU-122-1012-DUP**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**		**02/13/03**	
Duplicate:			**WOD-SU-118-0406**		**WOD-SU-118-0406-DUP**								**WOD-SU-122-1012**	
Top Depth:	**1.0**		**4.0**		**4.0**		**5.0**		**4.0**		**10.0**		**10.0**	
Bottom Depth:	**2.0**		**6.0**		**6.0**		**7.0**		**6.0**		**12.0**		**12.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Methyl Acetate	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Methylene Chloride	5	B	3	B	3	B	3	B	5	B	4	B	2	B
o-xylene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Tetrachloroethene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Toluene	15	U	9	U	10	U	12	U	10	U	12	U	11	U
Xylene (Total)	15	U	9	U	10	U	12	U	10	U	12	U	11	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1254	38	U	36	U	36	U	36	U	37	U	37	U	36	U
Data Qualifiers:														
B -- Positive result is considered to b														
J -- Value is considered estimated du														
JN														
K -- Positive result is considered bias														
L -- Positive result is considered bias														
R -- Positive result is considered unu														
U -- Value is a non-detected result as														
UJ -- Non-detected result is consider														
UL -- Non-detected result is consider														
UR -- Non-detected result is consider														
NA -- No result is available/applicable														
Database source file: S:\RITCHIEM\W														

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SU-122-1012		WOD-SU-123-1012		WOD-SU-124-0203		WOD-SU-125-0203		WOD-SU-126-0203		WOD-SU-127-0203	
Sample Date:	02/13/03		02/13/03		02/13/03		02/13/03		02/26/03		02/25/03	
Duplicate:	WOD-SU-122-1012-DUP											
Top Depth:	10.0		10.0		2.0		2.0		2.0		2.0	
Bottom Depth:	12.0		12.0		3.0		3.0		3.0		3.0	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	11400		4190		2750		6570		11100		5140	
Antimony	0.16	UL	0.14	UL	0.14	UL	0.14	UL	0.17	UL	0.15	U
Arsenic	3.2		1.4		1.4		5		2.8		2.6	
Barium	46.8		10.9		10.8		113		27.1		19.9	
Beryllium	0.35		0.13		0.088		0.25		0.21		0.14	
Cadmium	0.038	UL	0.033	U	0.032	U	0.032	UL	0.039	UL	0.035	U
Calcium	26	B	22.8	B	166		861		13.4	U	47.8	
Chromium	9.8		3.5		3.1		8.7		9.6		5.6	
Cobalt	1.1		0.38		0.76		2.2		2.4		1.7	
Copper	2		0.77	B	1.1	B	4.9		3.2		1.9	
Cyanide	NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA	
Iron	5270	J	1680	J	2170	J	5700	J	8540		4200	
Lead	2.6	K	1.1		2.7		23.2		4.4		3.4	
Magnesium	603		221		185		576		622		387	
Manganese	85.8	J	25.7	J	23.5	J	93	J	37.7		68.9	
Mercury	0.018	U	0.018	U	0.016	U	0.028		0.019	U	0.015	U
Nickel	2.6		0.83		1.3		4.2		5.4		3.1	
Potassium	515		167		110		258		284		180	
Selenium	0.49	UL	0.42	U	0.41	U	0.41	UL	0.5	U	0.45	U
Silver	0.33	B	0.16	B	0.15	B	0.26	B	0.46		0.24	
Sodium	17.6	B	7.2	B	4	B	14.8	B	20.5	K	12.4	
Thallium	0.16	U	0.14	U	0.14	U	0.14	U	0.17	U	0.15	U
Vanadium	12.6		4.4		4.5		13.7		15		8.4	
Zinc	5.6		2.3		4.6		22.7		10.6		8.9	
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
2-Methylnaphthalene	390	U	360	U	350	U	360	U	380	U	360	U
4-Chloroaniline	390	U	360	U	350	U	360	U	380	U	360	U
Acenaphthene	390	U	360	U	350	U	360	U	380	U	360	U
Benz(a)anthracene	390	U	360	U	350	U	360	U	380	U	360	U
Benzaldehyde	390	U	360	U	350	U	360	U	380	UJ	360	UJ
Benzo(a)pyrene	390	U	360	U	350	U	360	U	380	U	360	U
Benzo(b)fluoranthene	390	U	360	U	350	U	56	J	380	U	360	U
Bis(2-ethylhexyl)phthalate	390	U	360	U	350	U	360	U	63	J	190	J
Chrysene	390	U	360	U	350	U	39	J	380	U	360	U
Dibenzofuran	390	U	360	U	350	U	360	U	380	U	360	U
Fluoranthene	390	U	360	U	350	U	43	J	380	U	360	U
Fluorene	390	U	360	U	350	U	360	U	380	U	360	U
Naphthalene	390	U	360	U	350	U	360	U	380	U	360	U
Phenanthrene	390	U	360	U	350	U	360	U	380	U	360	U
Pyrene	390	U	360	U	350	U	47	J	380	U	360	U
VOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,2,4-Trimethylbenzene	12	U	12	U	10	UJ	1	J	9	U	9	U
1,3,5-Trimethylbenzene	12	U	12	U	10	UJ	1	J	9	U	9	U
2-Butanone	12	U	12	U	10	UJ	10	U	9	U	9	U
2-Hexanone	12	U	3	B	10	UJ	3	B	9	U	9	U
Acetone	19	B	11	B	27	B	20	B	20	B	8	J
Benzene	12	U	12	U	10	UJ	10	U	9	U	9	U
Carbon Disulfide	12	U	12	U	10	UJ	10	U	9	U	9	U
Chloroethane	12	U	12	U	10	UJ	10	U	9	U	9	U
Ethylbenzene	12	U	12	U	10	UJ	10	U	9	U	9	U
m,p-xylene	12	U	12	U	10	UJ	1	J	9	U	9	U

TABLE 5.2
SUMMARY OF SUBSURFACE SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-SU-122-1012**		**WOD-SU-123-1012**		**WOD-SU-124-0203**		**WOD-SU-125-0203**		**WOD-SU-126-0203**		**WOD-SU-127-0203**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/26/03**		**02/25/03**	
Duplicate:	**WOD-SU-122-1012-DUP**											
Top Depth:	**10.0**		**10.0**		**2.0**		**2.0**		**2.0**		**2.0**	
Bottom Depth:	**12.0**		**12.0**		**3.0**		**3.0**		**3.0**		**3.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Methyl Acetate	12	U	12	U	5	J	10	U	9	U	9	U
Methylene Chloride	6	B	7	B	5	B	5	B	6	B	5	B
o-xylene	12	U	12	U	10	UJ	10	U	9	U	9	U
Tetrachloroethene	12	U	12	U	10	UJ	10	U	9	U	9	U
Toluene	12	U	12	U	10	UJ	10	U	9	U	9	U
Xylene (Total)	12	U	12	U	10	UJ	1	J	9	U	9	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
Aroclor-1254	39	U	36	U	35	U	37	U	39	U	36	U
Data Qualifiers:												
B -- Positive result is considered to b												
J -- Value is considered estimated du												
JN												
K -- Positive result is considered bias												
L -- Positive result is considered bias												
R -- Positive result is considered unu												
U -- Value is a non-detected result as												
UJ -- Non-detected result is consider												
UL -- Non-detected result is consider												
UR -- Non-detected result is consider												
NA -- No result is available/applicable												
Database source file: S:\RITCHIEM\W												

TABLE 5.3
SUMMARY OF GROUNDWATER SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLPS ISLAND, VIRGINIA

Sample ID:	MW3R-20030220		MW3R-20030312		WOD-MW4		WOD-WFF15-GW1		WOD-WFF15-GW2		WOD-WFF15-GW7		WOD-WFF16-GW1		WOD-WFF16-GW2D	
Sample Date:	02/20/03		03/12/03		03/17/03		03/12/03		03/12/03		03/14/03		03/18/03		03/12/03	
Upgradient Well (Y/N):	Y		Y		N		N		N		N		N		N	
Duplicate:																
INORGANICS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	297		376	J	8220		831	J	2410	J	116	B	17.4	B	155	B
Antimony	3	U	4.1	B	3	U	4.5	B	3.6	B	3	U	3	U	4	B
Arsenic	3	U	3	U	4.6	B	3	U	4.4	B	15.6	B	3	U	21.4	
Barium	21.6		21.8	B	52.4		33.4		32.4		68.1		71.3		47.2	
Beryllium	0.5	U	0.5	U	1.1	B	0.5	U	0.5	U	0.66	B	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.92	K
Calcium	6740		11600		5940		9240		4740		4130		28000		6980	
Chromium	0.6	U	2.7	B	6.1		1.3	B	3.2	B	0.88	B	147		2.7	B
Cobalt	0.9	U	2.4	B	3.4	B	3.9	B	3.5	B	4.1	B	1.2	B	1.8	B
Copper	4	U	12.6	B	31.9	B	15.3	B	10.7	B	15.2	B	8.1	B	8.8	B
Iron	148	B	203		2210		1990		6810		16400		516		21700	
Lead	4	U	4	U	5.1		4	U	4	U	68.6		4	U	4	U
Magnesium	4970		4350		1690		9330		2840		4350		4610		6040	
Manganese	13.4		6.8	B	18.8		220	J	15.2	J	641		32.6		97.1	J
Nickel	0.8	U	2.3	B	5.2	B	1.9	B	3.1	B	2.8	B	40.2		1.6	B
Potassium	1880		1460		2980		1160		1610		1900		5180		2140	
Silver	2	U	2.3		2.9		2	U	2.8		2	U	8.3	B	3.1	K
Sodium	4190		3250		9370		3390		12700		7290		6600		7630	
Vanadium	1.5		1.1	B	9.9		0.7	U	3.9	B	2.4	B	2.2	B	0.7	UL
Zinc	7	U	48.4	B	62.3	B	44.3	B	46.4	B	37	B	7	U	37.1	B
SEMIVOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2-Methylnaphthalene	5	U	5	U	5	U	5	U	5	U	130		5	U	5	UJ
4-Methylphenol	5	U	5	U	5	U	5	U	42		5	U	5	U	5	UR
Acenaphthene	5	U	5	U	5	U	5	U	5	U	9		5	U	5	UJ
Bis(2-ethylhexyl)phthalate	5	U	5	U	5	U	5	U	5	U	4	J	5	U	5	UJ
Dibenzofuran	5	U	5	U	5	U	5	U	5	U	4	J	5	U	5	UJ
Fluorene	5	U	5	U	5	U	2	J	5	U	12		5	U	5	UJ
Naphthalene	5	U	5	U	5	U	5	U	5	U	130		5	U	5	UJ
Phenanthrene	5	U	5	U	5	U	2	J	5	U	15		5	U	5	UJ
VOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	170		1	U	1	U
1,2-Dichloroethene (cis)	1	U	1	U	1	U	3		1	U	1		1	U	2	
1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	74		1	U	1	U
2-Butanone	5	U	5	U	5	U	5	U	6		5	U	5	U	5	U
Acetone	5	U	5	U	5	U	5	B	4	B	44	B	5	UR	5	U
Benzene	1	U	1	U	1	U	1	U	1	U	11		1	U	8	
Ethylbenzene	1	U	1	U	1	U	1	U	1	U	68		1	U	8	
Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	6		1	U	1	
m,p-xylene	1	U	1	U	1	U	1	U	1	U	370		1	U	1	U
Methylcyclohexane	1	U	1	U	1	U	1	U	1	U	18		1	U	1	U
Methylene Chloride	1	B	2	U	2	U	2	B	2	U	2	U	2	U	2	U
o-xylene	1	U	1	U	1	U	1	U	1	U	170		1	U	1	U
Styrene	1	U	1	U	1	U	1	U	1	U	5		1	U	1	U
Tetrachloroethene	1	U	1	U	1	U	1	U	1	U	5		1	U	1	U
Toluene	1	U	1	U	1	U	1	U	2		120		1	U	1	U
Xylene (Total)	1	U	1	U	1	U	1	U	1	U	540		1	U	1	U
MISCELLANEOUS PARAMETERS																
Carbon Dioxide (mg/L)	NA		17.7		51		93.6		35.4		222.8		75.9		74.1	

TABLE 5.3
SUMMARY OF GROUNDWATER SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLPS ISLAND, VIRGINIA

Sample ID:	**MW3R-20030220**		**MW3R-20030312**		**WOD-MW4**		**WOD-WFF15-GW1**		**WOD-WFF15-GW2**		**WOD-WFF15-GW7**		**WOD-WFF16-GW1**		**WOD-WFF16-GW2D**	
Sample Date:	**02/20/03**		**03/12/03**		**03/17/03**		**03/12/03**		**03/12/03**		**03/14/03**		**03/18/03**		**03/12/03**	
Upgradient Well (Y/N):	**Y**		**Y**		**N**		**N**		**N**		**N**		**N**		**N**	
Duplicate:																
Chloride (mg/L)	NA		4.6		5.6		4.4		25		8.1		7.3		4	
Ethane (ug/L)	NA		0.01	U	0.01	U	0.08		0.01	U	1.15		0.01	U	0.5	
Ethene (ug/L)	NA		0.01	U	0.01		0.01	U	0.04		0.06		0.01	U	0.04	
Hydrogen (nm/L as gas)	NA		2		2.4		2.5		2.2		2.7		4.8		14	
Methane (ug/L)	NA		26.2		0.2	U	444.2		168.4		529.7		2.9		876.3	
Nitrate (mg/L)	NA		0.38	J	0.74		0.072	J	0.1	UJ	0.033	J	2.5		0.1	UJ
Nitrogen (mg/L)	NA		6.7		14.3		9.2		10.7		10.2		9.1		8.1	
Oxygen (mg/L)	NA		3.43		2.89		0.15	U	0.15	U	0.18		3.86		0.15	U
Sulfate (mg/L)	NA		16		9.1		6.3		13		6.4		21		7.2	
Total Organic Carbon (mg/L)	NA		6	U	6	U	6	U	8.2		13		6	U	6	U
Data Qualifiers:																
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.																
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).																
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.																
U -- Value is a non-detected result as reported by the laboratory.																
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.																
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.																
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.																
NA -- No result is available/applicable for this parameter in this sample.																
Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOGW.DBF data retrieved on: 07/08/03																

TABLE 5.3
SUMMARY OF GROUNDWATER SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW2S		WOD-WFF16-GW3		WOD-WFF16-GW4		WOD-WFF16-GW5		WOD-WFF16-GW6		WOD-WFF16-GW7		WOD-WFF16-GW7-DUP	
Sample Date:	03/12/03		03/18/03		03/14/03		03/13/03		03/17/03		03/18/03		03/18/03	
Upgradient Well (Y/N):	N		N		N		N		N		N		N	
Duplicate:											WOD-WFF16-GW7-DUP		WOD-WFF16-GW7	
INORGANICS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	211	B	117	B	1530		927		109	B	510	B	258	B
Antimony	5.3	B	3	U	3	U	3	B	3	U	3	UL	3	UL
Arsenic	12.5	B	3	U	3	U	3	U	3	U	3	UL	3	UL
Barium	117		16.1	B	37.1		38.5		44.7		70.5		63.8	
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.62	B	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Calcium	30800		1690		1230		26600		40500		10600		10300	
Chromium	0.91	B	124		2.2	B	1.5	B	0.99	B	2.3	B	3.4	B
Cobalt	2.8	B	1.4	B	2	B	2	B	2.3	B	5.3	B	4.8	B
Copper	23.9	B	9.1	B	14.4	B	14.9	B	21.2	B	14.8	B	45.2	B
Iron	5970		596		1570		662		50.6		49900		47400	
Lead	4	U	4	U	4	U	4	U	4	U	4	U	4	U
Magnesium	10300		2280		1520		19900		6590		11200		10900	
Manganese	44.1	J	15		15.5		30.6		17.3		310		306	
Nickel	1.8	B	49.1		3.6	B	2.1	B	3.2	B	0.8	U	0.8	U
Potassium	2390		1280		1160		10900		1590		2640		2530	
Silver	2	U	12.3	B	2	U	2	U	2		18.6	B	7.2	B
Sodium	3160		4460		2810		3920		8710		29200		30200	
Vanadium	0.72	B	2.2	B	4.3	B	1.7	B	0.88	B	5.9	B	5.2	B
Zinc	44.8	B	12.9	B	37.3	B	36.8	B	42.6	B	15.3	B	36.7	B
SEMIVOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2-Methylnaphthalene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methylphenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acenaphthene	1	J	5	U	5	U	5	U	5	U	5	U	5	U
Bis(2-ethylhexyl)phthalate	2	J	5	U	5	U	5	U	5	U	5	U	18	
Dibenzofuran	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Fluorene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Naphthalene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Phenanthrene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
VOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)	1		1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	4	B	5	UR	5	UR	5	U	5	U	5	UR	4	B
Benzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
m,p-xylene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	2	U	2	U	2	U	2	U	2	U	2	U	2	U
o-xylene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	1	U	1	U	1	U	1		1	U	1	U	1	U
Tetrachloroethene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Xylene (Total)	1	U	1	U	1	U	1	U	1	U	1	U	1	U
MISCELLANEOUS PARAMETERS														
Carbon Dioxide (mg/L)	43.3		10.6		5.4		60.5		139.3		211.7		223.2	

TABLE 5.3
SUMMARY OF GROUNDWATER SAMPLE RESULTS
WOD RI REPORT
NASA WFF - WALLPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF16-GW2S**		**WOD-WFF16-GW3**		**WOD-WFF16-GW4**		**WOD-WFF16-GW5**		**WOD-WFF16-GW6**		**WOD-WFF16-GW7**		**WOD-WFF16-GW7-DUP**	
Sample Date:	**03/12/03**		**03/18/03**		**03/14/03**		**03/13/03**		**03/17/03**		**03/18/03**		**03/18/03**	
Upgradient Well (Y/N):	**N**		**N**		**N**		**N**		**N**		**N**		**N**	
Duplicate:											**WOD-WFF16-GW7-DUP**		**WOD-WFF16-GW7**	
Chloride (mg/L)	5.7		8.6		4.2		3.4		12		24		24	
Ethane (ug/L)	0.05		0.01	U	0.01	U	0.01	U	0.01		0.01	U	0.01	U
Ethene (ug/L)	0.01		0.01	U	0.01	U	0.01	U	0.01	U	0.01	U	0.01	U
Hydrogen (nm/L as gas)	10.2		1.9		39.2		NA		3.1		2.6		2	
Methane (ug/L)	495.5		10.6		1		8.1		0.2	U	9521.8		10263.8	
Nitrate (mg/L)	0.03	J	1.5		0.23	J	0.22		12		0.41		0.38	
Nitrogen (mg/L)	7.6		7		13.7		13		12.8		2.2		2.7	
Oxygen (mg/L)	0.82		3.21		7.16		0.45		0.86		0.15	U	0.15	U
Sulfate (mg/L)	6.2		4.4		4.7		26		38		28		27	
Total Organic Carbon (mg/L)	10		6	U	6	U	6	U	7.5		17		17	
Data Qualifiers:														
B -- Positive result is considered to b														
J -- Value is considered estimated du														
K -- Positive result is considered bias														
U -- Value is a non-detected result as														
UJ -- Non-detected result is consider														
UL -- Non-detected result is consider														
UR -- Non-detected result is consider														
NA -- No result is available/applicable														
Database source file: S:\RITCHIEM\W														

TABLE 5.4
SUMMARY OF FILTERED GROUNDWATER RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	MW3RF-20030220		MW3RF-20030312		WOD-MW4F		WOD-WFF15-GW1F		WOD-WFF15-GW2F		WOD-WFF15-GW7F		WOD-WFF16-GW1F		WOD-WFF16-GW2DF	
Sample Date:	**02/20/03**		**03/12/03**		**03/17/03**		**03/12/03**		**03/12/03**		**03/14/03**		**03/18/03**		**03/12/03**	
Duplicate:																
Upgradient Well (Y/N):	**Y**		**Y**		**N**		**N**		**N**		**N**		**N**		**N**	
INORGANICS	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	17	U	20.5	B	3470		51.2	B	1370	J	20.8	B	17	U	45.2	B
Antimony	3		3	U	3	U	3.6	B	3.3	B	3	U	3	U	4.6	B
Arsenic	3	U	3	U	3.4	B	3	U	3.4	B	15.1	B	3	U	19.5	
Barium	20.6		19.7	B	25.2		29.1	B	29.1	B	70.6		72.8		45.6	
Beryllium	0.5	U	0.5	U	0.66	B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.78	K
Calcium	6610		12100		5360		9290		4430		4880		28800		6950	
Chromium	0.6	U	6.5		3.1	B	0.64	B	2.2	B	0.63	B	43.5		1.1	B
Cobalt	0.9	U	1.5	B	2.6	B	3.6	B	3.6	B	5	B	1.4	B	1.6	B
Copper	4	U	13.1	B	16.4	B	5.4	B	9.1	B	7.1	B	26.2	B	7	B
Iron	26	U	68.5	B	951		1690		6680		17700		64.6	B	21400	
Lead	4	U	4	U	4	U	4	U	4	U	54.7		4	U	4	U
Magnesium	5090		4240		1440		8500		2640		4760		4620		6030	
Manganese	12.8	B	6.2	B	11	B	214	J	14.5	J	663		21.8		97.3	J
Mercury	0.14	U	0.13	U	0.13	U	0.13	U	0.13	U	0.14	UL	0.13	U	0.13	U
Nickel	0.8	U	1.7	B	4	B	1.4	B	3.4	B	3.3	B	0.8	U	0.98	B
Potassium	1850		1390		2810		1230		1600		1930		5160		2120	
Selenium	9	U	9	U	9	U	9	U	9	U	9	U	9	U	9	UL
Silver	2	U	2	U	2		2	U	2	U	2	U	6.9	B	2	K
Sodium	4300		3200		9520		3230		11900		7660		6700		7560	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	1.1		0.7	U	4.6	B	0.7	U	2.6	B	1.6	B	1.5	B	0.7	UL
Zinc	7	U	42.6	B	38.6	B	25.9	B	37.8	B	26.1	B	26.2	B	31.2	B

TABLE 5.4
SUMMARY OF FILTERED GROUNDWATER RESULTS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW2SF		WOD-WFF16-GW3F		WOD-WFF16-GW4F		WOD-WFF16-GW5F		WOD-WFF16-GW6F		WOD-WFF16-GW7F		WOD-WFF16-GW7F-DUP	
Sample Date:	03/12/03		03/18/03		03/14/03		03/13/03		03/17/03		03/18/03		03/18/03	
Duplicate:											WOD-WFF16-GW7F-DUP		WOD-WFF16-GW7F	
Upgradient Well (Y/N):	N		N		N		N		N		N		N	
INORGANICS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	38.2	B	37	B	40.8	B	85.2	B	41.5	B	107	B	40.8	B
Antimony	3	B	3	U	3	U	3	U	3	U	3	UL	3	UL
Arsenic	9.5	B	3	U	3	U	3	U	3	U	3	UL	3	UL
Barium	110		14.5	B	22	B	31.3		42		57.2		57.7	
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Calcium	32500		1720		1140		26400		41000		9580		9450	
Chromium	0.67	B	0.94	B	0.71	B	0.89	B	0.69	B	3.8	B	1.2	B
Cobalt	2.4	B	1.2	B	1.9	B	2.2	B	2.2	B	5.8	B	5.5	B
Copper	5.2	B	13.8	B	6.3	B	6.5	B	12.5	B	22.5	B	6.9	B
Iron	5300		51.6	B	26	U	267		26	U	42000		40700	
Lead	4	U	4	U	4	U	4	U	4	U	4	U	4	U
Magnesium	10900		2210		1390		19300		6630		10500		10200	
Manganese	41.8	J	3.9	B	13.6		29.8		17.7		314		309	
Mercury	0.14	U	0.15	U	0.14	UL	0.13	U	0.13	U	0.13	U	0.13	U
Nickel	1.3	B	0.8	U	3	B	1.5	B	2.9	B	0.8	U	0.8	U
Potassium	2420		1260		1020		10700		1640		2410		2370	
Selenium	9	U	9	U	9	U	9	U	9	U	9	U	9	U
Silver	2	U	10	B	2	U	2	U	2	U	15	B	6.5	B
Sodium	3010		4390		2910		3790		8560		28400		31800	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	0.7	U	1.2	B	0.7	U	0.7	U	0.74	B	4.7	B	4.3	B
Zinc	20.9	B	19.3	B	19.7	B	27.8	B	28.6	B	23.9	B	9.4	B

Data Qualifiers:

B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

K -- Positive result is considered biased high due to exceedance of technical quality control criteria.

U -- Value is a non-detected result as reported by the laboratory.

UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOGW.DBF data retrieved on: 07/07/03

TABLE 5.5
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test:		Detection Freq: Z or Fisher				95 % Upper Tolerance Limit (UTL)							Upper Ranks				Mann-Whitney/Gehan				Student's or Satterthwaite T-test					Bartlett's Test for Equal Standard Deviations						
Question Posed:		Site Freq. > Back.Freq.?				Site Maximum > UTL for Background Data ?							Majority are site?				Ranks of Site > Back?				Site Mean > Back. Mean ?					Site Standard Deviation =Background Std.Dev.?						
Assumptions Valid:		#ND & Pos.>=5 or use Fisher				Back. lognorm. or norm. If not, #b>18 for Quantile Test							# Site (s) in Top r				<40% ND or use Gehan				#s>2,#b>2,>=85% Pos; both norm/log					#s>2,#b>2, site & back both normal or both lognorm.						
Test Criterion:		P value <= 0.05 ?				Max >95% UTL (parametric). Or, Max >95% Quantile							P<=0.05 that #s>=k				P value <=0.05 ?				t-Value > t-Table					F-Value<=F-Table (Students T). If not, Satterthwaite						
Conclusion: Site > Back?	YN	Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev.	F	F	YN
Substance		Freq.	Freq.	Value		Mean[@]	Back.[@]	Value	Q	UTL	Max.				Value		Value				Mean[@]	Mean[@]	Value	Table		Distrib.	Distrib.	Back.[@]	Site[@]	Value	Table	
Aluminum	N	10/10	60/60		NA	9460	4230	2.9110	N*	21800	19500	NA	3	3	0.6251	N	0.9927			N	9460	5880			NA	normal	nonpar.					NA
Antimony	NA	0/2	2/40		NA						0.92	NA	1	1	0.9524	N				NA		0.239			NA							NA
Arsenic	N	10/10	57/60	1.0000	N	1.16	0.781	2.9110	L*	30.9	10.7	NA	13	12	0.4037	N	0.9325			N	4.2	3.03			NA	lognor.	nonpar.					NA
Barium	N	10/10	60/60		NA	72.1	33.2	2.9110	N*	169	81.5	NA	49	40	0.9793	N	1.0000			N	72.1	21.5			NA	normal	lognor.					NA
Beryllium	N	9/10	46/56	0.8614	N	0.641	0.354	2.9110	N*	1.67	0.6	NA	43	34	0.9909	N	0.9999			N	0.641	0.185			NA	normal	nonpar.					NA
Cadmium	N	6/10	10/51		NA	0.209					0.24	NA	4	2	0.9879	N	0.9999	Gehan	Test	N	0.209	0.0484			NA	lognor.	nonpar.					NA
Calcium	N	9/9	57/60	1.0000	N	6.19	0.635	3.0310	L*	3350	3880	NA	16	14	0.6548	N	0.9789			N	591	416			NA	lognor.	nonpar.					NA
Chromium	N	10/10	60/60		NA	9.57	4.72	2.9110	N*	23.3	20.9	NA	3	3	0.6251	N	0.9617			N	2.11	1.76			NA	lognor.	lognor.					NA
Cobalt	N	10/10	60/60		NA	3.6	1.97	2.9110	N*	9.34	3.9	NA	49	40	0.9793	N	0.9994			N	3.6	1.53			NA	normal	nonpar.					NA
Copper	N	9/9	53/53		NA	1.78	0.868	3.0310	L*	82.8	21.1	NA	13	11	0.7205	N	0.9737			N	1.78	1.19			NA	lognor.	lognor.					NA
Iron	N	10/10	60/60		NA	7590	2990	2.9110	N*	16300	14200	NA	2	2	0.7329	N	0.9927			N	7590	5080			NA	normal	nonpar.					NA
Lead	N	10/10	60/60		NA	30.6					71	NA	24	22	0.2585	N	0.7849			N	30.6	17.7			NA	nonpar.	lognor.					NA
Magnesium	N	10/10	60/60		NA	968	434	2.9110	N*	2230	4170	NA	3	3	0.6251	N	0.9980			N	968	580			NA	normal	lognor.					NA
Manganese	N	10/10	60/60		NA	368	237	2.9110	N*	1060	312	NA	49	40	0.9793	N	0.9999			N	368	66.2			NA	normal	lognor.					NA
Mercury	N	9/10	25/59		NA	-3.03	0.907	2.9110	L*	0.675	0.4	NA	8	7	0.6732	N	0.9673	Gehan	Test	N	0.0688	0.0478			NA	lognor.	nonpar.					NA
Nickel	N	10/10	60/60		NA	6.14	2.81	2.9110	N*	14.3	14.2	NA	2	2	0.7329	N	0.9980			N	6.14	3.47			NA	normal	nonpar.					NA
Potassium	N	10/10	52/52		NA	394	202	2.9110	N*	983	1170	NA	31	26	0.6343	N	0.8644			N	5.82	5.68			NA	lognor.	lognor.					NA
Selenium	N	4/6	15/59		NA	0.645					1.5	NA				NA	0.9994	Gehan	Test	N	0.645	0.334			NA	lognor.	nonpar.					NA
Silver	NA	2/6	28/51	0.2853	N	0.112					2.3	NA	10	10	0.2959	N	0.1027	Gehan	Test	N	0.112	0.261			NA	lognor.	nonpar.					NA
Sodium	Y	6/6	29/35	1.0000	N	21.6	6.99	2.0150	N	36.8	3820	NA	27	27	0.0007	Y	0.0091			Y	21.6	334			NA	normal	nonpar.					NA
Thallium	N	4/6	1/60		NA	0.581					0.21	NA				NA	1.0000	Gehan	Test	N	0.581	0.177			NA	lognor.	nonpar.					NA
Vanadium	N	10/10	60/60		NA	16.9	7.82	2.9110	N*	39.6	70.7	NA	3	3	0.6251	N	0.9797			N	16.9	13.1			NA	normal	nonpar.					NA
Zinc	N	10/10	56/56		NA	3.05	0.844	2.9110	L*	247	53.2	NA	15	13	0.5938	N	0.9625			N	29.4	15.9			NA	lognor.	nonpar.					NA
Aroclor-1260	NA	0/11	2/60		NA						220	NA	2	2	0.7123	N				NA		42.9			NA							NA
1,2-Dichlorobenzene	NA	0/0	2/39		NA						3	NA				NA				NA		8.83			NA							NA
1,3-Dichlorobenzene	NA	0/15	2/38		NA						3	NA				NA				NA		8.79			NA							NA
1,4-Dichlorobenzene	NA	0/0	2/38		NA						3	NA				NA				NA		8.79			NA							NA
Benz(a)anthracene	N	1/26	7/60		NA	210					210	NA				NA	0.6221	Gehan	Test	N	210	284			NA	nonpar.	nonpar.					NA
Benzaldehyde	NA	0/0	20/35		NA						1500	NA				NA				NA		289			NA							NA
Benzo(a)pyrene	N	2/26	9/60		NA	199			Q	344	1300	NA				NA	0.1502	Gehan	Test	N	199	312			NA	nonpar.	nonpar.					NA
Benzo(b)fluoranthene	N	2/26	9/60		NA	209			Q	493	430	NA				NA	0.2345	Gehan	Test	N	209	283			NA	nonpar.	nonpar.					NA
Benzo(g,h,i)perylene	NA	0/26	6/60		NA						590	NA				NA				NA		301			NA							NA
Benzo(k)fluoranthene	NA	1/26	4/60		NA	200					180	NA				NA	0.5333	Gehan	Test	N	200	289			NA	nonpar.	nonpar.					NA
Bis(2-ethylhexyl) Phthalate	Y	2/26	25/59		NA	206			Q	331	2800	NA	1	1	0.6941	N	0.0038	Gehan	Test	Y	206	575			NA	nonpar.	nonpar.					NA
Chrysene	N	2/26	12/60		NA	208			Q	487	410	NA				NA	0.1234	Gehan	Test	N	208	292			NA	nonpar.	nonpar.					NA
Fluoranthene	N	2/26	8/60		NA	223			Q	727	280	NA				NA	0.3192	Gehan	Test	N	223	281			NA	nonpar.	nonpar.					NA
Indeno(1,2,3-cd)pyrene	NA	0/26	5/60		NA						230	NA				NA				NA		289			NA							NA
Phenanthrene	NA	1/26	4/60		NA	220					77	NA				NA	0.9376	Gehan	Test	N	220	284			NA	nonpar.	nonpar.					NA
Pyrene	N	2/26	8/60		NA	220			Q	656	280	NA				NA	0.3711	Gehan	Test	N	220	283			NA	nonpar.	nonpar.					NA

TABLE 5.5
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test:		Detection Freq: Z or Fisher				95 % Upper Tolerance Limit (UTL)							Upper Ranks				Mann-Whitney/Gehan				Student's or Satterthwaite T-test					Bartlett's Test for Equal Standard Deviations						
Question Posed:		Site Freq. > Back.Freq.?				Site Maximum > UTL for Background Data ?							Majority are site?				Ranks of Site > Back?				Site Mean > Back. Mean ?					Site Standard Deviation =Background Std.Dev.?						
Assumptions Valid:		#ND & Pos.>=5 or use Fisher				Back. lognorm. or norm. If not, #b>18 for Quantile Test							# Site (s) in Top r				<40% ND or use Gehan				#s>2,#b>2,>=85% Pos; both norm/log					#s>2,#b>2, site & back both normal or both lognorm.						
Test Criterion:		P value <= 0.05 ?				Max >95% UTL (parametric). Or, Max >95% Quantile							P<=0.05 that #s>=k				P value <=0.05 ?				t-Value > t-Table					F-Value<=F-Table (Students T). If not, Satterthwaite						
Conclusion: Site > Back?	YN	Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev.	F	F	YN
Substance		Freq.	Freq.	Value		Mean@	Back.@	Value	Q	UTL	Max.				Value		Value				Mean@	Mean@	Value	Table		Distrib.	Distrib.	Back.@	Site@	Value	Table	
1,2,4-Trichlorobenzene	NA	0/0	1/38		NA						2	NA				NA				NA		8.87			NA							NA
1,2,4-Trimethylbenzene	NA	0/0	3/39		NA						5	NA				NA				NA		8.82			NA							NA
1,3,5-Trimethylbenzene	NA	0/0	3/39		NA						4	NA				NA				NA		8.82			NA							NA
2-Butanone	N	0/7	9/60		NA						100	NA	4	4	0.6362	N				NA		10.7			NA							NA
2-Hexanone	NA	0/7	3/60		NA						20	NA				NA				NA		7.75			NA							NA
4-Methyl-2-pentanone	NA	0/7	2/60		NA						3	NA				NA				NA		7.69			NA							NA
Acetone	N	0/7	7/30		NA						920	NA	7	7	0.1977	N				NA		75.6			NA							NA
Carbon Disulfide	NA	0/7	3/60		NA						13	NA				NA				NA		7.33			NA							NA
Chlorobenzene	NA	0/7	1/60		NA						1	NA				NA				NA		7.74			NA							NA
Ethylbenzene	NA	0/7	2/60		NA						2	NA				NA				NA		7.67			NA							NA
Isopropylbenzene	NA	0/0	2/39		NA						2	NA				NA				NA		8.81			NA							NA
M,p-xylene	NA	0/0	2/39		NA						4	NA				NA				NA		8.91			NA							NA
Methyl Acetate	NA	0/0	29/39		NA						210	NA				NA				NA		25.7			NA							NA
O-xylene	NA	0/0	2/39		NA						2	NA				NA				NA		8.81			NA							NA
Styrene	NA	0/7	2/60		NA						2	NA				NA				NA		7.67			NA							NA
Toluene	NA	0/7	2/60		NA						2	NA				NA				NA		7.63			NA							NA
Xylene (Total)	NA	0/7	2/60		NA						6	NA				NA				NA		7.8			NA							NA

Notes: Units are mg/kg for inorganics, ug/kg for organics.
A statistical significance level (P value) of 0.05 is used for all tests that directly compare site to background. A two-sided significance level of 0.1 is used for Bartlett's test for equal variance.
UTL is the expected value for the upper 95 % quantile of the background population; there is an equal chance of the population's true 95 % quantile being either below or above this estimate.
For each test, a YES or NO decision is presented only if all assumptions are met. The overall decision (is site > background) for each chemical appears at the left and is based on four criteria:
(1) Overall decision is YES if any one of the Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is YES, regardless of other test results.
(2) Overall decision is NO if at least one of Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is NO, and none of the aforementioned tests are YES.
(3) Overall decision is YES/NO if Z/Fisher Test is YES/NO, respectively, and other tests are NA. Z-test is treated as lowest priority since it relies on detection frequency, not magnitude of results.
(4) Overall decision is NA if all tests are NA. (Chemicals assigned NA are still included in human health risk-based screening and/or risk assessment.)

Abbreviations:

# NDs or # Pos.	Number of non-detected (ND) or positive (Pos.) results in data set, not including rejected data or blank-qualified data.
# s or # b	Number of site (s) or background (b) samples, not including rejected data or blank-qualified data.
s = b	Standard deviation of site results must not be different from the standard deviation of background results.
P value	Probability or significance level is defined as the chance of a false positive. If P <= 0.05 then test determines site > background with 95 % confidence.
L, N, or Q	UTL is based on 95 % upper limit (using t-value) when data are lognormal (L) or normal (N). Otherwise, an upper 95 % quantile (Q) is used if there are > 18 back. points.
% ND	Mann-Whitney test used if < 40% of data Non-Detected and detect. limits uniformly below the range of positive values. If not, the Gehan Test is used.
@	Mean and standard deviations are shown of log-transformed data when distributions are of this type; ie., if an (L) code appears for the UTL test or if site and background distributions both match lognormal. (Arithmetic mean and normal standard deviation are shown only for illustration in the event that these tests are NA.)
r,k	The upper ranks test calculates the probability that k or more samples from the top r ranks of the combined site and background data set are comprised of site data if both populations are in fact equal.

TABLE 5.6
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test:		Detection Freq: Z or Fisher				95 % Upper Tolerance Limit (UTL)							Upper Ranks				Mann-Whitney/Gehan				Student's or Satterthwaite T-test					Bartlett's Test for Equal Standard Deviations						
Question Posed:		Site Freq. > Back.Freq.?				Site Maximum > UTL for Background Data ?							Majority are site?				Ranks of Site > Back?				Site Mean > Back. Mean ?					Site Standard Deviation =Background Std.Dev.?						
Assumptions Valid:		#ND & Pos.>=5 or use Fisher				Back. lognorm. or norm. If not, #b>18 for Quantile Test							# Site (s) in Top r				<40% ND or use Gehan				#s>2,#b>2,>=85% Pos; both norm/log					#s>2,#b>2, site & back both normal or both lognorm.						
Test Criterion:		P value <= 0.05 ?				Max >95% UTL (parametric). Or, Max >95% Quantile							P<=0.05 that #s>=k				P value <=0.05 ?				t-Value > t-Table					F-Value<=F-Table (Students T). If not, Satterthwaite						
Conclusion: Site > Back?	YN	Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev.	F	F	YN
Substance		Freq.	Freq.	Value		Mean[@]	Back.[@]	Value	Q	UTL	Max.				Value		Value				Mean[@]	Mean[@]	Value	Table		Distrib.	Distrib.	Back.[@]	Site[@]	Value	Table	
Aluminum	N	11/11	31/31		NA	14100	4700	2.8150	N*	27300	47600	NA	1	1	0.7381	N	1.0000			N	9.49	8.06			NA	lognor.	lognor.					NA
Antimony	NA	0/1	1/24		NA						18.3	NA	1	1	0.9600	N				NA		0.847			NA							NA
Arsenic	N	11/11	27/31	1.0000	N	3.55	1.42	2.8150	N*	7.53	11.9	NA	1	1	0.7381	N	0.9993			N	3.55	1.86			NA	normal	nonpar.					NA
Barium	N	11/11	31/31		NA	48.6	20.9	2.8150	N*	107	983	NA	2	2	0.5401	N	0.9999			N	48.6	48			NA	normal	nonpar.					NA
Beryllium	N	10/11	26/31		NA	0.345	0.142	2.8150	N*	0.745	0.37	NA	14	6	0.9998	N	1.0000	Gehan	Test	N	0.345	0.141			NA	normal	normal					NA
Cadmium	NA	5/10	4/31		NA	0.191					23.4	NA	1	1	0.7561	N	0.9981	Gehan	Test	N	0.191	0.792			NA	normal	nonpar.					NA
Calcium	N	9/9	21/26	1.0000	N	243	117	3.0310	N*	596	55400	NA	3	3	0.3972	N	0.9979	Gehan	Test	N	243	2260			NA	normal	nonpar.					NA
Chromium	N	11/11	31/31		NA	12.6	4.47	2.8150	N*	25.2	78.6	NA	1	1	0.7381	N	1.0000			N	12.6	6.31			NA	normal	nonpar.					NA
Cobalt	N	11/11	28/30	1.0000	N	1.24	0.653	2.8150	L*	21.8	6.3	NA	3	1	0.9845	N	0.9999			N	1.24	-0.601			NA	lognor.	lognor.					NA
Copper	N	10/10	10/13	1.0000	N	7.04	2.87	2.9110	N*	15.4	3040	NA	1	1	0.5652	N	0.9989	Gehan	Test	N	7.04	235			NA	normal	nonpar.					NA
Cyanide	NA	0/1	1/4		NA						0.59	NA				NA				NA		0.31			NA							NA
Iron	N	11/11	31/31		NA	10800	5380	2.8150	N*	25900	127000	NA	1	1	0.7381	N	1.0000			N	10800	6540			NA	normal	nonpar.					NA
Lead	N	11/11	29/29		NA	7.7	3.08	2.8150	N*	16.4	1100	NA	2	2	0.5205	N	0.9997			N	7.7	41			NA	normal	nonpar.					NA
Magnesium	N	11/11	31/31		NA	949	417	2.8150	N*	2120	3470	NA	1	1	0.7381	N	1.0000			N	949	312			NA	normal	nonpar.					NA
Manganese	N	11/11	31/31		NA	97.7	58.6	2.8150	N*	263	1100	NA	2	2	0.5401	N	0.9992			N	4.38	3.08			NA	lognor.	lognor.					NA
Mercury	N	9/11	2/31		NA	0.0298					0.18	NA	1	1	0.7381	N	0.9999	Gehan	Test	N	0.0298	0.017			NA	lognor.	nonpar.					NA
Nickel	N	11/11	25/29	1.0000	N	7.05	2.66	2.8150	N*	14.5	56.8	NA	1	1	0.7250	N	1.0000			N	1.87	0.0613			NA	lognor.	lognor.					NA
Potassium	N	10/11	16/16	0.4074	N	454	207	2.8150	N*	1040	1830	NA	1	1	0.5926	N	0.9964			N	454	303			NA	normal	nonpar.					NA
Selenium	NA	3/6	2/31	0.9989	N	0.398					0.35	NA				NA	0.9993	Gehan	Test	N	0.398	0.224			NA	nonpar.	nonpar.					NA
Silver	NA	4/5	9/26		NA	0.229					389	NA	1	1	0.8387	N	0.9590	Gehan	Test	N	0.229	15.1			NA	nonpar.	nonpar.					NA
Sodium	N	6/6	7/15	1.0000	N	34.3	11.9	2.0150	N	60.2	1060	NA	5	5	0.1476	N	0.8678	Gehan	Test	N	34.3	105			NA	normal	nonpar.					NA
Thallium	NA	3/7	2/31	0.9978	N	0.216					3.5	NA	1	1	0.8158	N	0.9975	Gehan	Test	N	0.216	0.197			NA	lognor.	nonpar.					NA
Vanadium	N	11/11	31/31		NA	20	8.22	2.8150	N*	43.2	92	NA	1	1	0.7381	N	1.0000			N	20	8.09			NA	normal	nonpar.					NA
Zinc	N	10/10	22/22		NA	16.7	5.57	2.9110	N*	33	3550	NA	1	1	0.6875	N	0.9998			N	16.7	166			NA	normal	nonpar.					NA
2-Methylnaphthalene	NA	0/15	3/31	0.2961	N						29000	NA	3	3	0.2961	N				NA		1720			NA							NA
Acenaphthene	NA	0/20	2/31	0.3647	N						1800	NA	1	1	0.6078	N				NA		228			NA							NA
Benz(a)anthracene	NA	0/22	1/31		NA						45	NA				NA				NA		230			NA							NA
Benzaldehyde	NA	0/0	1/23		NA						45	NA				NA				NA		174			NA							NA
Benzo(a)pyrene	NA	0/22	1/31		NA						55	NA				NA				NA		230			NA							NA
Benzo(b)fluoranthene	NA	0/22	2/31		NA						88	NA				NA				NA		227			NA							NA
Bis(2-ethylhexyl) Phthalate	N	3/22	5/27	0.4755	N	175					190	NA	1	1	0.5510	N	0.1771	Gehan	Test	N	175	161			NA	nonpar.	nonpar.					NA
Chrysene	NA	0/22	2/31		NA						73	NA				NA				NA		226			NA							NA
Dibenzofuran	NA	0/15	1/31	0.6739	N						1100	NA	1	1	0.6739	N				NA		210			NA							NA
Fluoranthene	NA	0/22	3/31		NA						45	NA				NA				NA		220			NA							NA
Fluorene	NA	0/20	3/31	0.2158	N						2800	NA	2	2	0.3647	N				NA		293			NA							NA
Naphthalene	NA	0/20	2/31	0.3647	N						7700	NA	2	2	0.3647	N				NA		467			NA							NA
Phenanthrene	NA	0/22	4/31	0.1075	N						7800	NA	3	3	0.1919	N				NA		577			NA							NA
Pyrene	NA	0/22	4/31	0.1075	N						580	NA	2	2	0.3374	N				NA		188			NA							NA
1,2,4-Trimethylbenzene	NA	0/0	3/26		NA						42	NA				NA				NA		6.77			NA							NA

TABLE 5.6
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test:		Detection Freq: Z or Fisher				95 % Upper Tolerance Limit (UTL)							Upper Ranks				Mann-Whitney/Gehan				Student's or Satterthwaite T-test					Bartlett's Test for Equal Standard Deviations						
Question Posed:		Site Freq. > Back.Freq.?				Site Maximum > UTL for Background Data ?							Majority are site?				Ranks of Site > Back?				Site Mean > Back. Mean ?					Site Standard Deviation =Background Std.Dev.?						
Assumptions Valid:		#ND & Pos.>=5 or use Fisher				Back. lognorm. or norm. If not, #b>18 for Quantile Test							# Site (s) in Top r				<40% ND or use Gehan				#s>2,#b>2,>=85% Pos; both norm/log					#s>2,#b>2, site & back both normal or both lognorm.						
Test Criterion:		P value <= 0.05 ?				Max >95% UTL (parametric). Or, Max >95% Quantile							P<=0.05 that #s>=k				P value <=0.05 ?				t-Value > t-Table					F-Value<=F-Table (Students T). If not, Satterthwaite						
Conclusion: Site > Back?	YN	Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev.	F	F	YN
Substance		Freq.	Freq.	Value		Mean[@]	Back.[@]	Value	Q	UTL	Max.				Value		Value				Mean[@]	Mean[@]	Value	Table		Distrib.	Distrib.	Back.[@]	Site[@]	Value	Table	
1,3,5-Trimethylbenzene	NA	0/0	2/26		NA						93	NA				NA				NA		8.85			NA							NA
2-Butanone	NA	0/3	1/31		NA						25	NA				NA				NA		11.2			NA							NA
Acetone	NA	0/0	2/8		NA						140	NA				NA				NA		42.1			NA							NA
Benzene	NA	0/0	1/31		NA						42	NA				NA				NA		11.8			NA							NA
Carbon Disulfide	NA	0/0	1/31		NA						4	NA				NA				NA		10.5			NA							NA
Chloroethane	NA	0/0	3/31		NA						110	NA				NA				NA		12.6			NA							NA
Ethylbenzene	NA	0/3	3/31		NA						2200	NA	2	2	0.8289	N				NA		113			NA							NA
M,p-xylene	NA	0/0	3/27		NA						10	NA				NA				NA		5.54			NA							NA
Methyl Acetate	NA	0/0	1/27		NA						5	NA				NA				NA		5.63			NA							NA
O-xylene	NA	0/0	2/27		NA						9	NA				NA				NA		5.54			NA							NA
Tetrachloroethene	NA	0/0	2/31		NA						320	NA				NA				NA		15.2			NA							NA
Toluene	NA	0/3	3/31		NA						1700	NA	2	2	0.8289	N				NA		89.7			NA							NA
Xylene (Total)	NA	0/3	6/31	0.5475	N						13000	NA	5	5	0.6106	N				NA		682			NA							NA

Notes: Units are mg/kg for inorganics, ug/kg for organics.
A statistical significance level (P value) of 0.05 is used for all tests that directly compare site to background. A two-sided significance level of 0.1 is used for Bartlett's test for equal variance.
UTL is the expected value for the upper 95 % quantile of the background population; there is an equal chance of the population's true 95 % quantile being either below or above this estimate.
For each test, a YES or NO decision is presented only if all assumptions are met. The overall decision (is site > background) for each chemical appears at the left and is based on four criteria:
(1) Overall decision is YES if any one of the Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is YES, regardless of other test results.
(2) Overall decision is NO if at least one of Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is NO, and none of the aforementioned tests are YES.
(3) Overall decision is YES/NO if Z/Fisher Test is YES/NO, respectively, and other tests are NA. Z-test is treated as lowest priority since it relies on detection frequency, not magnitude of results.
(4) Overall decision is NA if all tests are NA. (Chemicals assigned NA are still included in human health risk-based screening and/or risk assessment.)

Abbreviations:

# NDs or # Pos.	Number of non-detected (ND) or positive (Pos.) results in data set, not including rejected data or blank-qualified data.
# s or # b	Number of site (s) or background (b) samples, not including rejected data or blank-qualified data.
s = b	Standard deviation of site results must not be different from the standard deviation of background results.
P value	Probability or significance level is defined as the chance of a false positive. If P <= 0.05 then test determines site > background with 95 % confidence.
L, N, or Q	UTL is based on 95 % upper limit (using t-value) when data are lognormal (L) or normal (N). Otherwise, an upper 95 % quantile (Q) is used if there are > 18 back. points.
% ND	Mann-Whitney test used if < 40% of data Non-Detected and detect. limits uniformly below the range of positive values. If not, the Gehan Test is used.
@	Mean and standard deviations are shown of log-transformed data when distributions are of this type; ie., if an (L) code appears for the UTL test or if site and background distributions both match lognormal. (Arithmetic mean and normal standard deviation are shown only for illustration in the event that these tests are NA.)
r,k	The upper ranks test calculates the probability that k or more samples from the top r ranks of the combined site and background data set are comprised of site data if both populations are in fact equal.

TABLE 5.7

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN WASTE OIL DUMP SURFACE SOIL

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

	Background Data				Site-Related Data				
Substance	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Average of Detections	Sampling Round and Location of Maximum
Diesel Range Organics	6/7	5.8 J	73	20.6	1WFFMB-BGSS4	17/17	2.7 JY	870 Y	195	195	3WFF16-SS11
Gasoline Range Organics	3/7	0.084	0.53	0.148	1WFFMB-BGSS6	3/17	30 JZ	220 Z	41.3	104	3WFF16-SS15
Aluminum	10/10	1870	13900	9460	SS-BG-109	60/60	917	19500	5880	5880	WOD-SS-137
Antimony	0/2					2/40	0.36 L	0.92	0.239	0.64	3WFF16-SS13
Arsenic	10/10	0.78	14.2	4.2	SS-BG-108	57/60	0.74	10.7	3.03	3.18	WOD-SS-122
Barium	10/10	9.7	114	72.1	SS-BG-101	60/60	3.3	81.5	21.5	21.5	WOD-SS-104
Beryllium	9/10	0.26	1.2	0.641	SS-BG-105	46/56	0.029	0.6 L	0.185	0.214	WOD-SS-103
Cadmium	6/10	0.11 K	0.84	0.209	SS-BG-108	10/51	0.035 L	0.24 L	0.0484	0.103	WOD-SS-106
Calcium	9/9	184	1390 J	591	SS-BG-110	57/60	28.2	3880	416	438	WOD-SS-136
Chromium	10/10	1.9	18.4	9.57	SS-BG-110	60/60	1.5	20.9 J	7.04	7.04	WOD-SS-135
Cobalt	10/10	0.35	7.3	3.6	SS-BG-109	60/60	0.14 K	3.9	1.53	1.53	WOD-SS-139
Copper	9/9	2.1	33	8.91	SS-BG-108	53/53	0.61	21.1 J	4.26	4.26	WOD-SS-135
Iron	10/10	1740	10900 J	7590	SS-BG-109	60/60	1460	14200	5080	5080	WOD-SS-137
Lead	10/10	4.9	124	30.6	SS-BG-108	60/60	1.8	71	17.7	17.7	WOD-SS-137
Magnesium	10/10	143	1450	968	SS-BG-110	60/60	74.3	4170 J	580	580	WOD-SS-135
Manganese	10/10	8.4	781	368	SS-BG-105	60/60	2.8	312	66.2	66.2	WOD-SS-127
Mercury	9/10	0.025	0.25	0.0688	SS-BG-108	25/59	0.02	0.4 J	0.0478	0.0858	WOD-SS-128
Nickel	10/10	0.95	10.6	6.14	SS-BG-110	60/60	0.55	14.2 J	3.47	3.47	WOD-SS-135
Potassium	10/10	73.7	756 J	394	SS-BG-110	52/52	102	1170 J	336	336	WOD-SS-135
Selenium	4/6	0.58 K	1.4 K	0.645	SS-BG-105	15/59	0.23	1.5 J	0.334	0.55	WOD-SS-135
Silver	2/6	0.15 L	0.3 L	0.112	SS-BG-110	28/51	0.13 K	2.3	0.261	0.423	WOD-SS-136
Sodium	6/6	12.4	31.1	21.6	SS-BG-105	29/35	20.1 K	3820 J	334	402	WOD-SS-135
Thallium	4/6	0.32	1.6	0.581	SS-BG-105	1/60		0.21	0.177	0.21	WOD-SS-116
Vanadium	10/10	3.5	28.5	16.9	SS-BG-110	60/60	2.6	70.7 J	13.1	13.1	WOD-SS-135
Zinc	10/10	4.5	104	29.4	SS-BG-110	56/56	1.2	53.2	15.9	15.9	3WFF16-SS14
Aroclor-1260	0/11					2/60	180 J	220 J	42.9	200	WOD-SS-135
1,2-Dichlorobenzene	0/0					2/39	2 J	3 J	8.83	2.5	WOD-SS-126
1,3-Dichlorobenzene	0/15					2/38	3 J	3 J	8.79	3	WOD-SS-126
1,4-Dichlorobenzene	0/0					2/38	3 J	3 J	8.79	3	WOD-SS-126
Benz(a)anthracene	1/26		550 J	210	SS-BG-108	7/60	37 J	210 J	284	105	WOD-SS-139
Benzaldehyde	0/0					20/35	46 J	1500 J	289	322	WOD-SS-135
Benzo(a)pyrene	2/26	46 J	410 J	199	SS-BG-108	9/60	47 J	1300	312	396	3WFF16-SS10
Benzo(b)fluoranthene	2/26	76 J	640 J	209	SS-BG-108	9/60	43 J	430 J	283	166	WOD-SS-139
Benzo(g,h,i)perylene	0/26					6/60	83 J	590	301	242	3WFF16-SS10-DUP
Benzo(k)fluoranthene	1/26		290 J	200	SS-BG-108	4/60	61 J	180 J	289	123	WOD-SS-139
Bis(2-ethylhexyl) Phthalate	2/26	210 J	390	206	ME-2S	25/59	40 J	2800	575	882	3WFF16-SS9
Chrysene	2/26	67 J	630 J	208	SS-BG-108	12/60	37 J	410	292	179	3WFF16-SS10-DUP
Fluoranthene	2/26	87 J	1000 J	223	SS-BG-108	8/60	55 J	280 J	281	151	WOD-SS-125
HMW PAH (sediment)	not calc'd					2/12	330	1300	429	815	WOD-SS-139
Indeno(1,2,3-cd)pyrene	0/26					5/60	81 J	230 J	289	131	WOD-SS-139
LMW PAH (sediment)	not calc'd					1/12		63	348	63	WOD-SS-139
Phenanthrene	1/26		790 J	220	SS-BG-108	4/60	41 J	77 J	284	57.3	WOD-SS-125
Pyrene	2/26	120 J	890 J	220	SS-BG-108	8/60	66 J	280 J	283	162	WOD-SS-125
Total PAH (sediment)	not calc'd					2/12	330	1363	434	847	WOD-SS-139
Total PAH (soil)	not calc'd					15/59	45	2320	453	884	3WFF16-SS10
1,2,4-Trichlorobenzene	0/0					1/38		2 J	8.87	2	WOD-SS-126
1,2,4-Trimethylbenzene	0/0					3/39	1 J	5 J	8.82	3.33	WOD-SS-127
1,3,5-Trimethylbenzene	0/0					3/39	2 J	4 J	8.82	3.33	WOD-SS-126
2-Butanone	0/7					9/60	2 J	100	10.7	29.2	WOD-SS-136
2-Hexanone	0/7					3/60	4 J	20 J	7.75	10	WOD-SS-131
4-Methyl-2-pentanone	0/7					2/60	2 J	3 J	7.69	2.5	WOD-SS-127
Acetone	0/7					7/30	130	920	75.6	296	WOD-SS-136

TABLE 5.7

OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN WASTE OIL DUMP SURFACE SOIL

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

	Background Data					Site-Related Data					
Substance	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Average of Detections	Sampling Round and Location of Maximum
Carbon Disulfide	0/7					3/60	6 J	13 J	7.33	8.33	WOD-SS-135
Chlorobenzene	0/7					1/60		1 J	7.74	1	WOD-SS-127
Ethylbenzene	0/7					2/60	2 J	2 J	7.67	2	WOD-SS-126
Isopropylbenzene	0/0					2/39	2 J	2 J	8.81	2	WOD-SS-126
M,p-xylene	0/0					2/39	4 J	4 J	8.91	4	WOD-SS-126
Methyl Acetate	0/0					29/39	2 J	210	25.7	31	WOD-SS-136
O-xylene	0/0					2/39	2 J	2 J	8.81	2	WOD-SS-126
Styrene	0/7					2/60	2 J	2 J	7.67	2	WOD-SS-126
Toluene	0/7					2/60	1 J	2 J	7.63	1.5	WOD-SS-120
Xylene (Total)	0/7					2/60	6 J	6 J	7.8	6	WOD-SS-126

Notes:

Units are in mg/kg for inorganics and ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
The determination of representative concentrations is based on comparison of maximum to the 95 % UCL, which is presented in a separate table.
Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.
Number of samples may vary based on the number of usable results.

TABLE 5.8
OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN WASTE OIL DUMP SUBSURFACE SOILS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

	Background Data				Site-Related Data				
Substance	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Representative Concentration
Aluminum	11/11	5380	22400	14100	SB-BG-101-0305	31/31	613	47600	5240	WOD-SU-111-0507	7080
Antimony	0/1					1/24	18.3 L	18.3 L	0.847	WOD-SU-111-0507	0.381
Arsenic	11/11	1.1	5.3	3.55	SB-BG-101-0305	27/31	0.46	11.9 L	1.86	WOD-SU-111-0507	2.96
Barium	11/11	16	88.5	48.6	SB-BG-108-0305	31/31	2.8	983	48	WOD-SU-111-0507	44.8
Beryllium	10/11	0.15	0.57	0.345	SB-BG-102-0305	26/31	0.029	0.37	0.141	WOD-SU-119-0507	0.17
Cadmium	5/10	0.19	0.36	0.191	SB-BG-107-0305	4/31	0.034	23.4 L	0.792	WOD-SU-111-0507	0.161
Calcium	9/9	85.9 J	471 J	243	SB-BG-101-0305	21/26	22.4	55400	2260	WOD-SU-111-0507	2140
Chromium	11/11	5.7	21	12.6	SB-BG-101-0305	31/31	0.78	78.6	6.31	WOD-SU-111-0507	7.31
Cobalt	11/11	1.2	14 J	4.14	SB-BG-112-0305	28/30	0.087	6.3 K	1.14	WOD-SU-111-0507	2.54
Copper	10/10	1.6	10.9	7.04	SB-BG-102-0305	10/13	0.31	3040	235	WOD-SU-111-0507	3040
Cyanide	0/1					1/4	0.59	0.59	0.31	2WFF16-SB3S2	0.59
Iron	11/11	3040	17900	10800	SB-BG-107-0305	31/31	500	127000	6540	WOD-SU-111-0507	6110
Lead	11/11	1.7	12.2	7.7	SB-BG-108-0305	29/29	0.45	1100	41	WOD-SU-111-0507	41
Magnesium	11/11	279	1780	949	SB-BG-107-0305	31/31	42.8	3470	312	WOD-SU-111-0507	434
Manganese	11/11	18.4	213	97.7	SB-BG-102-0305	31/31	2.3	1100	72.9	WOD-SU-111-0507	115
Mercury	9/11	0.019	0.048	0.0298	SB-BG-104-0305	2/31	0.028	0.18	0.017	WOD-SU-111-0507	0.0182
Nickel	11/11	2.8	11.2	7.05	SB-BG-101-0305	25/29	0.43	56.8	3.5	WOD-SU-111-0507	6.44
Potassium	10/11	196	853 J	454	SB-BG-101-0305	16/16	110	1830 K	303	WOD-SU-111-0507	407
Selenium	3/6	0.23	0.89 K	0.398	SB-BG-105-0305	2/31	0.34 K	0.35 K	0.224	2WFF16-SB2S2	0.235
Silver	4/5	0.17 L	0.22 L	0.229	SB-BG-110-0305	9/26	0.11	389	15.1	WOD-SU-111-0507	2.15
Sodium	6/6	14.1	49.3 K	34.3	SB-BG-102-0305	7/15	12.4	1060 K	105	WOD-SU-111-0507	1060
Thallium	3/7	0.22	0.53	0.216	SB-BG-102-0305	2/31	0.18 L	3.5 K	0.197	WOD-SU-111-0507	0.162
Vanadium	11/11	6.2	31.1	20	SB-BG-101-0305	31/31	1.1	92	8.09	WOD-SU-111-0507	9.74
Zinc	10/10	8.4	26.3	16.7	SB-BG-107-0305	22/22	0.75	3550	166	WOD-SU-111-0507	81.1
2-Methylnaphthalene	0/15					3/31	310 J	29000 J	1720	2WFF16-SB2S2	957
Acenaphthene	0/20					2/31	54 J	1800 J	228	2WFF16-SB2S2	246
Benz(a)anthracene	0/22					1/31	45 J	45 J	230	WOD-SU-111-0507	45
Benzaldehyde	0/0					1/23	45 J	45 J	174	WOD-SU-111-0507	45
Benzo(a)pyrene	0/22					1/31	55 J	55 J	230	WOD-SU-111-0507	55
Benzo(b)fluoranthene	0/22					2/31	56 J	88 J	227	WOD-SU-111-0507	88
Bis(2-ethylhexyl) Phthalate	3/22	37 J	110 J	175	WFF2-SB1F	5/27	37 J	190 J	161	WOD-SU-127-0203	190
Chrysene	0/22					2/31	39 J	73 J	226	WOD-SU-111-0507	73
Dibenzofuran	0/15					1/31	1100 J	1100 J	210	2WFF16-SB2S2	225
Fluoranthene	0/22					3/31	40 J	45 J	220	WOD-SU-111-0507	45
Fluorene	0/20					3/31	100 J	2800 J	293	2WFF16-SB2S2	305
Naphthalene	0/20					2/31	2900 J	7700 J	467	2WFF16-SB2S2	397
Phenanthrene	0/22					4/31	43 J	7800 J	577	2WFF16-SB2S2	506
Pyrene	0/22					4/31	47 J	580 J	188	2WFF16-SB2S2	212
1,2,4-Trimethylbenzene	0/0					3/26	1 J	42	6.77	WOD-SU-102-1517	8.05
1,3,5-Trimethylbenzene	0/0					2/26	1 J	93	8.85	WOD-SU-102-1517	9.74
2-Butanone	0/3					1/31	25 J	25 J	11.2	WOD-SU-111-0507	12.9
Acetone	0/0					2/8	8 J	140 J	42.1	WOD-SU-111-0507	140
Benzene	0/0					1/31	42 J	42 J	11.8	WOD-SU-111-0507	13.7
Carbon Disulfide	0/0					1/31	4 J	4 J	10.5	WOD-SU-111-0507	4
Chloroethane	0/0					3/31	13	110 J	12.6	2WFF16-SB2S2	13.8
Ethylbenzene	0/3					3/31	2 J	2200 J	113	2WFF16-SB2S2	56.9
M,p-xylene	0/0					3/27	1 J	10 J	5.54	WOD-SU-102-1517	6.49
Methyl Acetate	0/0					1/27	5 J	5 J	5.63	WOD-SU-124-0203	5
O-xylene	0/0					2/27	1 J	9 J	5.54	WOD-SU-102-1517	6.47
Tetrachloroethene	0/0					2/31	3 J	320	15.2	2WFF16-SB1S2	15
Toluene	0/3					3/31	10 J	1700 J	89.7	2WFF16-SB2S2	48.5
Xylene (Total)	0/3					6/31	1 J	13000 J	682	2WFF16-SB2S2	247

Notes:

Units are mg/kg for inorganics and ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
The determination of representative concentrations is based on comparison of maximum to the 95 % UCL, which is presented in a separate table.
Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.
Number of samples may vary based on the number of usable results.

TABLE 5.9
OCCURRENCE AND DISTRIBUTION OF ORGANICS AND INORGANICS IN WASTE OIL DUMP GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

	Background Data					Site-Related Data				
Substance	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Freq. of Detection	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of All Data	Sampling Round and Location of Maximum	Representative Concentration
Aluminum	2/2	297	376 J	337	MW3R-20030312	5/5	831 J	8220	2780	WOD-MW4	8220
Arsenic	0/2	-				1/8	21.4	21.4	3.99	WOD-WFF16-GW2D	10.4
Barium	1/1	21.6	21.6	21.6	MW3R-20030220	11/11	32.4	117	55.4	WOD-WFF16-GW2S	71.6
Cadmium	0/2	-				1/12	0.92 K	0.92 K	0.398	WOD-WFF16-GW2D	0.463
Calcium	2/2	6740	11600	9170	MW3R-20030312	12/12	1230	40500	14200	WOD-WFF16-GW6	40500
Chromium	0/1	-				3/3	6.1	147	92.4	WOD-WFF16-GW1	147
Iron	1/1	203	203	203	MW3R-20030312	12/12	50.6	49900	8930	WOD-WFF16-GW7	49900
Lead	0/2	-				2/12	5.1	68.6	7.81	WOD-WFF15-GW7	7.81
Magnesium	2/2	4350	4970	4660	MW3R-20030220	12/12	1520	19900	6710	WOD-WFF16-GW5	13100
Manganese	1/1	13.4	13.4	13.4	MW3R-20030220	12/12	15	641	121	WOD-WFF15-GW7	483
Nickel	0/1	-				2/3	40.2	49.1	29.9	WOD-WFF16-GW3	49.1
Potassium	2/2	1460	1880	1670	MW3R-20030220	12/12	1160	10900	2910	WOD-WFF16-GW5	4480
Silver	1/2	2.3	2.3	1.65	MW3R-20030312	4/9	2	3.1 K	1.76	WOD-WFF16-GW2D	2.75
Sodium	2/2	3250	4190	3720	MW3R-20030220	12/12	2810	30200	8310	WOD-WFF16-GW7-DUP	13400
Vanadium	1/1	1.5	1.5	1.5	MW3R-20030220	1/3	9.9	9.9	3.53	WOD-MW4	9.9
2-Methylnaphthalene	0/2	-				1/12	130	130	13.1	WOD-WFF15-GW7	19.9
4-Methylphenol	0/2	-				1/11	42	42	6.09	WOD-WFF15-GW2	9.65
Acenaphthene	0/2	-				2/12	1 J	9	2.92	WOD-WFF15-GW7	3.9
Bis(2-ethylhexyl) Phthalate	0/2	-				3/12	2 J	18	3.23	WOD-WFF16-GW7-DUP	4.11
Dibenzofuran	0/2	-				1/12	4 J	4 J	2.63	WOD-WFF15-GW7	2.82
Fluorene	0/2	-				2/12	2 J	12	3.25	WOD-WFF15-GW7	4.17
Naphthalene	0/2	-				1/12	130	130	13.1	WOD-WFF15-GW7	19.9
Phenanthrene	0/2	-				2/12	2 J	15	3.5	WOD-WFF15-GW7	4.62
1,2,4-Trimethylbenzene	0/2	-				1/12	170	170	14.6	WOD-WFF15-GW7	29.3
1,2-Dichloroethene (cis)	0/2	-				4/12	1	3	0.917	WOD-WFF15-GW1	1.38
1,3,5-Trimethylbenzene	0/2	-				1/12	74	74	6.63	WOD-WFF15-GW7	11.1
2-Butanone	0/2	-				1/12	6	6	2.79	WOD-WFF15-GW2	3.21
Benzene	0/2	-				2/12	8	11	2	WOD-WFF15-GW7	4.69
Ethylbenzene	0/2	-				2/12	8	68	6.75	WOD-WFF15-GW7	21.5
Isopropylbenzene	0/2	-				2/12	1	6	1	WOD-WFF15-GW7	1.45
M,p-xylene	0/2	-				1/12	370	370	31.3	WOD-WFF15-GW7	82.5
Methylcyclohexane	0/2	-				1/12	18	18	1.96	WOD-WFF15-GW7	2.91
O-xylene	0/2	-				1/12	170	170	14.6	WOD-WFF15-GW7	29.3
Styrene	0/2	-				2/12	1	5	0.917	WOD-WFF15-GW7	1.31
Tetrachloroethene	0/2	-				1/12	5	5	0.875	WOD-WFF15-GW7	1.21
Toluene	0/2	-				2/12	2	120	10.6	WOD-WFF15-GW7	22.8
Xylene (Total)	0/2	-				1/12	540	540	45.5	WOD-WFF15-GW7	143

Notes:

Units are ug/L.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result.
Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.
The determination of representative concentrations is based on comparison of maximum to the 95 % UCL, which is presented in a separate table.
Frequency of detection refers to number of times compound was detected among all samples versus total number of samples.
Number of samples may vary based on the number of usable results.

TABLE 6.1
SUMMARY OF PHYSICAL AND CHEMICAL DATA FOR DETECTED ORGANIC CHEMICALS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical Of Concern	Molecular Weight	Solubility (mg/L)	Log Kow	Vapor Pressure (mmHg, 20C)	Henry's Law Constant (atm cu. m/mol)	Specific Gravity	Koc
Volatiles							
1,2-dichloroethene (cis)*	96.94	3500 (25C)	2	201 (25C)	4.08E-03	-	-
1,2,4-trimethylbenzene	120.19	57	3.63	1.00E+00	6.16E-03	-	-
1,3,5-trimethylbenzene	120.19	48.2	3.42	2.48 (25C)	8.77E-03	-	-
benzene	78.12	1800	2.12	9.52E+01	5.50E-03	0.879	4.05
tetrachloroethene	165.83	200	3.4	1.40E+01	0.0153	1.626	5.9
toluene	92.13	560	2.73	2.81E+01	6.10E-03	0.867	4.88
m,p-xylene	106.17	106 (25C)	3.16	7.99 (25C)	6.63E-03	-	-
o-xylene	106.17	178 (25C)	3.12	6.61 (25C)	5.18E-03	-	-
xylene (total)	106.16	190	3.26	8.36E+00	6.00E-03	0.86	6.77
Semivolatiles							
2-methylnaphthalene	142.20	24.6 (25C)	3.72	.055 (25C)	5.18E-03	-	5.80E+03
4-methylphenol	108.14	4400	1.92	4.00E-03	1.29E-06	1.0347	3.19
benz(a)anthracene	228.28	0.0057	5.61	2.20E-08	1.00E-06	-	2.00E+05
benzo(a)pyrene	252.30	0.0038 (25C)	5.98	5.60E-09	4.90E-07	-	5.50E+06
benzo(b)fluoranthene	252.30	0.0014 (25C)	6.57	5.00E-07	1.22E-05	-	5.50E+05
benzo(k)fluoranthene	252.30	0.043 (25C)	6.84	5.00E-07	3.87E-05	-	5.50E+05
bis(2-ethylhexyl)phthalate	390.62	0.4	5.61	6.46E-06	8.30E-06	0.99	11.37
chrysene	228.30	0.0018 (25C)	5.61	6.3E-09 (25C)	1.05E-06	1.274	2.00E+05
dibenzofuran	168.20	10	4.12	0.00248 (25C)	2.13E-04	-	8.13E+03
fluoranthene	202.30	0.26 (25C)	5.33	5.0E-06 (25C)	6.50E-06	1.252	3.80E+04
indeno(1,2,3-cd)pyrene	276.30	0.00053 (25C)	7.66	1.00E-10	6.95E-08	-	1.60E+06
naphthalene	128.19	31	3.3	9.12E-02	4.80E-04	1.152	6.86
pyrene	202.30	0.13 (25C)	5.18	2.5E-06 (25C)	5.10E-06	-	3.80E+04
Pesticides/PCBs							
Aroclor-1260	375.70	0.08 (25C)	7.15	4.0E-05 (25C)	4.60E-03	-	6.70E+06

- = Value Not Applicable or Not Located
* Values for 1,2-dichloroethene (total) were used as a surrogate for 1,2-dichloroethene (cis).

TABLE 6.2
SUMMARY OF PHYSICAL AND CHEMICAL DATA FOR INORGANIC CHEMICALS
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical Of Concern	Molecular Weight	K_d*
aluminum	26.98	-
antimony	121.75	-
arsenic	74.92	25 - 31
barium	137.34	12 - 52
beryllium	9.01	26 - 100,000
cadmium	112.40	17 - 4,300
calcium	40.08	93 - 51,900
chromium, trivalent	52.00	1,900 - 4,300,000
chromium, hexavalent	52.00	14 - 31
cobalt	58.93	0.2 - 3,800
copper	63.54	1.4 - 333
iron	55.85	1.4 - 1,000
lead	207.19	4.5 - 7,640
magnesium	24.31	1.6 - 13.5
manganese	54.94	0.2 - 10,000
mercury	200.59	0.06 - 200
nickel	58.71	18 - 1,900
potassium	39.10	2.0 - 9.0
selenium	78.96	2.2 - 17
silver	107.87	0.13 - 110
sodium	22.99	-
thallium	204.37	45 - 96
vanadium	50.94	-
zinc	65.37	18 - 530

* = K_d values are fromTable C-4 in EPA Soil Screening Guidance: User's Guide. 9
K_d values are for pH range of 5.0 to 8.0.

TABLE 6.3
CLASSES OF SUBSTANCES EVALUATED FOR PERSISTENCE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

CLASS	SUBSTANCE	MEDIA	
		Groundwater	Soil
Metals	Antimony		X
	Arsenic	X	
	Chromium	X	
	Iron	X	
	Lead	X	
	Manganese	X	
	Silver		X
Halogenated Aliphatics	1,2-DCE(cis)	X	
	PCE	X	X
	1,2,4-Trimethylbenzene	X	X
	1,3,5-Trimethylbenzene	X	X
Monocyclic Aromatics	Benzene	X	X
	Toluene	X	X
	M, P-Xylene	X	X
	O-Xylene	X	X
	Xylene (Total)	X	X
	1,2,4-Trimethylbenzene	X	X
	1,3,5-Trimethylbenzene	X	X
Polyaromatic Hydrocarbons	Benz(a)anthracene		X
	Benzo(a)pyrene		X
	Benzo(b)fluoranthene		X
	Benzo(k)fluoranthene		X
	Chrysene		X
	Dibenzofuran		X
	Fluoranthene		X
	Pyrene		X
	2-Methylnapthalene	X	X
	Napthalene	X	X
Pesticides and PCBs	Aroclor 1260		X

TABLE 6.4
SUMMARY OF POTENTIAL CONTAMINANT FATE PROCESSES
WOD RI REPORT
NASA WFF – WALLOPS ISLAND, VIRGINIA

	PROCESS					
CONTAMINANT	**SORPTION**	**VOLATILIZATION**	**BIODEGRADATION**	**PHOTOLYSIS**	**HYDROLYSIS**	**BIOACCUMULATION**
VOCs		+	+	+		
PAHs	+			+		
Pesticides and PCBs	+		+	+		+
Phthalate Esters and Other SVOCs	+			+		
Aluminum						
Antimony						
Arsenic	+				+	+
Barium						
Beryllium						
Cadmium						
Chromium	+				+	+
Cobalt						
Copper						+
Iron						
Lead	+			+		+
Manganese						
Mercury	+	+		+		+
Nickel	+				+	+
Selenium						
Silver						
Thallium	+					+
Vanadium						
Zinc	+				+	+

TABLE 6.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF SOIL-TO-GROUNDWATER CHEMICALS OF POTENTIAL CONCERN
WOD RI REPORT
NASA WFF - WALLOPS ISLAND VIRGINIA

Scenario Timeframe: Current/Future
Medium: Total Soil
Exposure Medium: Soil-to-Groundwater
Exposure Point: Ingestion or Dermal Contact

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision		Soil to Groundwater Screening Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
											SS	SB				
7429-90-5	Aluminum	613		47600		mg/kg	WOD-SU-111-0507	91/91	N/A	47600	N	N	NA	N	N	NSV
7440-36-0	Antimony	0.36	L	18.3	L	mg/kg	WOD-SU-111-0507	3/64	0.13-0.82	18.3	NA	NA	NA	N	N	NGC
7440-38-2	Arsenic	0.46		11.9	L	mg/kg	WOD-SU-111-0507	84/91	0.35-0.63	11.9	N	N	5.8	C	N	ASL
7440-39-3	Barium	2.8		983		mg/kg	WOD-SU-111-0507	91/91	N/A	983	N	N	NA	N	N	NGC
7440-41-7	Beryllium	0.029		0.6	L	mg/kg	WOD-SS-103	72/87	0.024-0.12	0.6	N	N	NA	N	N	NGC
7440-43-9	Cadmium	0.034		23.4	L	mg/kg	WOD-SU-111-0507	14/82	0.031-0.12	23.4	N	NA	NA	N	N	NGC
7440-70-2	Calcium	22.4		55400		mg/kg	WOD-SU-111-0507	78/86	10.8-13.4	55400	N	N	NA	N	N	NGC
7440-47-3	Chromium	0.78		78.6		mg/kg	WOD-SU-111-0507	91/91	N/A	78.6	N	N	42	N	N	ASL
7440-48-4	Cobalt	0.087		6.3	K	mg/kg	WOD-SU-111-0507	88/90	0.11-0.11	6.3	N	N	NA	N	N	NGC
7440-50-8	Copper	0.31		3040		mg/kg	WOD-SU-111-0507	63/66	0.2-0.23	3040	N	N	NA	N	N	NGC
57-12-5	Cyanide	0.59		0.59		mg/kg	2WFF16-SB3S2	1/25	0.27-0.54	0.59	ND	NA	NA	N	N	NGC
7439-89-6	Iron	500		127000		mg/kg	WOD-SU-111-0507	91/91	N/A	127000	N	N	NA	N	N	NSV
7439-92-1	Lead	0.45		1100		mg/kg	WOD-SU-111-0507	89/89	N/A	1100	N	N	NA	C	N	NSV
7439-95-4	Magnesium	42.8		4170	J	mg/kg	WOD-SS-135	91/91	N/A	4170	N	N	NA	N	N	NGC
7439-96-5	Manganese	2.3		1100		mg/kg	WOD-SU-111-0507	91/91	N/A	1100	N	N	2200	N	N	BSL
7439-97-6	Mercury	0.02		0.4	J	mg/kg	WOD-SS-128	27/90	0.014-0.06	0.4	N	N	NA	N	N	NGC
7440-02-0	Nickel	0.43		56.8		mg/kg	WOD-SU-111-0507	85/89	0.18-0.19	56.8	N	N	NA	N	N	NGC
7440-09-7	Potassium	102		1830	K	mg/kg	WOD-SU-111-0507	68/68	N/A	1830	N	N	NA	N	N	NGC
7782-49-2	Selenium	0.23		1.5	J	mg/kg	WOD-SS-135	17/90	0.18-1.6	1.5	N	NA	NA	N	N	NGC
7440-22-4	Silver	0.11		389		mg/kg	WOD-SU-111-0507	37/77	0.088-0.27	389	NA	NA	NA	N	N	NGC
7440-23-5	Sodium	12.4		3820	J	mg/kg	WOD-SS-135	36/50	3.6-5.5	3820	Y	N	NA	N	N	NGC
7440-28-0	Thallium	0.18	L	3.5	K	mg/kg	WOD-SU-111-0507	3/91	0.13-0.76	3.5	N	NA	NA	N	N	NGC
7440-62-2	Vanadium	1.1		92		mg/kg	WOD-SU-111-0507	91/91	N/A	92	N	N	NA	N	N	NGC
7440-66-6	Zinc	0.75		3550		mg/kg	WOD-SU-111-0507	78/78	N/A	3550	N	N	NA	N	N	NGC
11096-82-5	Aroclor-1260	180	J	220	J	ug/kg	WOD-SS-135	2/91	34-380	220	NA	ND	NA	C	N	NGC
95-50-1	1,2-Dichlorobenzene	2	J	3	J	ug/kg	WOD-SS-126	2/65	9-74	3	NA	ND	NA	N	N	NGC
541-73-1	1,3-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/64	9-74	3	NA	ND	NA	N	N	NGC
106-46-7	1,4-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/64	9-74	3	NA	ND	NA	C	N	NGC
91-57-6	2-Methylnaphthalene	310	J	29000	J	ug/kg	2WFF16-SB2S2	3/91	330-7400	29000	ND	NA	NA	N	N	NSV
83-32-9	Acenaphthene	54	J	1800	J	ug/kg	2WFF16-SB2S2	2/91	330-7400	1800	ND	NA	NA	N	N	NGC
56-55-3	Benz(a)anthracene	37	J	210	J	ug/kg	WOD-SS-139	8/91	330-7400	210	N	NA	NA	C	N	NGC
100527	Benzaldehyde	45	J	1500	J	ug/kg	WOD-SS-135	21/58	340-1900	1500	NA	NA	NA	N	N	NGC
50-32-8	Benzo(a)pyrene	47	J	1300		ug/kg	3WFF16-SS10	10/91	330-7400	1300	N	NA	NA	C	N	NGC
205-99-2	Benzo(b)fluoranthene	43	J	430	J	ug/kg	WOD-SS-139	11/91	330-7400	430	N	NA	NA	C	N	NGC
191-24-2	Benzo(g,h,i)perylene	83	J	590		ug/kg	3WFF16-SS10-DUP	6/91	330-7400	590	NA	ND	NA	N	N	NGC
207-08-9	Benzo(k)fluoranthene	61	J	180	J	ug/kg	WOD-SS-139	4/91	330-7400	180	NA	ND	NA	C	N	NGC
117-81-7	Bis(2-ethylhexyl) Phthalate	37	J	2800		ug/kg	3WFF16-SS9	30/86	330-7400	2800	Y	N	NA	C	N	NGC
218-01-9	Chrysene	37	J	410		ug/kg	3WFF16-SS10-DUP	14/91	330-7400	410	N	NA	NA	C	N	NGC
132-64-9	Dibenzofuran	1100	J	1100	J	ug/kg	2WFF16-SB2S2	1/91	330-7400	1100	ND	NA	48000	N	N	BSL
206-44-0	Fluoranthene	40	J	280	J	ug/kg	WOD-SS-125	11/91	330-7400	280	N	NA	NA	N	N	NGC
86-73-7	Fluorene	100	J	2800	J	ug/kg	2WFF16-SB2S2	3/91	330-7400	2800	ND	NA	NA	N	N	NGC
193-39-5	Indeno(1,2,3-cd)pyrene	81	J	230	J	ug/kg	WOD-SS-139	5/91	330-7400	230	NA	ND	NA	C	N	NGC

TABLE 6.5
OCCURRENCE, DISTRIBUTION AND SELECTION OF SOIL-TO-GROUNDWATER CHEMICALS OF POTENTIAL CONCERN
WOD RI REPORT
NASA WFF - WALLOPS ISLAND VIRGINIA

Scenario Timeframe: Current/Future
Medium: Total Soil
Exposure Medium: Soil-to-Groundwater
Exposure Point: Ingestion or Dermal Contact

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision		Soil to Groundwater Screening Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
											SS	SB				
91-20-3	Naphthalene	2900	J	7700	J	ug/kg	2WFF16-SB2S2	2/91	330-7400	7700	ND	NA	61000	N	N	BSL
85-01-8	Phenanthrene	41	J	7800	J	ug/kg	2WFF16-SB2S2	8/91	330-7400	7800	NA	NA	NA	N	N	NGC
129-00-0	Pyrene	47	J	580	J	ug/kg	2WFF16-SB2S2	12/91	330-7400	580	N	NA	NA	N	N	NGC
120-82-1	1,2,4-Trichlorobenzene	2	J	2	J	ug/kg	WOD-SS-126	1/64	9-74	2	NA	ND	NA	N	N	NGC
95636	1,2,4-Trimethylbenzene	1	J	42		ug/kg	WOD-SU-102-1517	6/65	9-74	42	NA	NA	280000	N	N	BSL
108678	1,3,5-Trimethylbenzene	1	J	93		ug/kg	WOD-SU-102-1517	5/65	9-74	93	NA	NA	NA	N	N	NGC
78-93-3	2-Butanone	2	J	100		ug/kg	WOD-SS-136	10/91	9-120	100	N	NA	NA	N	N	NGC
591-78-6	2-Hexanone	4	J	20	J	ug/kg	WOD-SS-131	3/88	9-120	20	NA	ND	NA	N	N	NGC
108-10-1	4-Methyl-2-pentanone	2	J	3	J	ug/kg	WOD-SS-127	2/91	9-120	3	NA	ND	NA	N	N	NGC
67-64-1	Acetone	8	J	920		ug/kg	WOD-SS-136	9/38	10-150	920	N	NA	NA	N	N	NGC
71-43-2	Benzene	42	J	42	J	ug/kg	WOD-SU-111-0507	1/91	9-120	42	ND	NA	34	C	N	BSL
75-15-0	Carbon Disulfide	4	J	13	J	ug/kg	WOD-SS-135	4/91	9-120	13	NA	NA	NA	N	N	NGC
108-90-7	Chlorobenzene	1	J	1	J	ug/kg	WOD-SS-127	1/91	9-120	1	NA	ND	NA	C	N	NGC
75-00-3	Chloroethane	13		110	J	ug/kg	2WFF16-SB2S2	3/91	9-120	110	ND	NA	NA	C	N	NGC
100-41-4	Ethylbenzene	2	J	2200	J	ug/kg	2WFF16-SB2S2	5/91	9-120	2200	NA	NA	NA	N	N	NGC
98-82-8	Isopropylbenzene	2	J	2	J	ug/kg	WOD-SS-126	2/66	9-74	2	NA	ND	NA	N	N	NGC
1330207	M,p-xylene	1	J	10	J	ug/kg	WOD-SU-102-1517	5/66	9-74	10	NA	NA	210000	N	N	BSL
79209	Methyl Acetate	2	J	210		ug/kg	WOD-SS-136	30/66	9-57	210	NA	NA	NA	N	N	NGC
95-47-6	O-xylene	1	J	9	J	ug/kg	WOD-SU-102-1517	4/66	9-74	9	NA	NA	190000	N	N	BSL
100-42-5	Styrene	2	J	2	J	ug/kg	WOD-SS-126	2/91	9-120	2	NA	ND	NA	N	N	NGC
127-18-4	Tetrachloroethene	3	J	320		ug/kg	2WFF16-SB1S2	2/91	9-120	320	ND	NA	NA	C	N	NGC
108-88-3	Toluene	1	J	1700	J	ug/kg	2WFF16-SB2S2	5/91	9-120	1700	NA	NA	12000	N	N	BSL
1330-20-7	Xylene (Total)	1	J	13000	J	ug/kg	2WFF16-SB2S2	8/91	9-74	13000	NA	NA	1400000	N	N	BSL

(1) Minimum/maximum detected concentration.
(2) SS/SB - Separate columns show background tests for surface/subsurface soil. Results of statistics: Y - greater than background; N - not great
NA - insufficient samples to conclude not greater than background. ND - not detected. Metals not greater than background in SS and SB were eliminated as COPCs.
(3) EPA soil to groundwater screening criteria under default parameters and DF=20 obtained from online calculator: http://risk.lsd.ornl.gov/epa/ssl
(4) Rationale Codes Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Screening Value (NSV)
Below Screening Level (BSL)
Not a Groundwater COPC (NGC)

Definitions:
N/A = Not Applicable
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
J = Estimated Value
K = Biased High Value
L = Biased Low Value
C = Carcinogenic
N = Non-Carcinogenic

TABLE 7.1 (RAGS D 2)
SELECTION OF CHEMICALS OF POTENTIAL CONCERN, SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision	Screening Toxicity Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
7429-90-5	Aluminum	917		19500		mg/kg	WOD-SS-137	60/60	N/A	19500	N	7800	N	N	BKG
7440-36-0	Antimony	0.36	L	0.92		mg/kg	3WFF16-SS13	2/40	0.14-0.82	0.92	NA	3.1	N	N	BSL
7440-38-2	Arsenic	0.74		10.7		mg/kg	WOD-SS-122	57/60	0.55-0.63	10.7	N	0.43	C	N	BKG
7440-39-3	Barium	3.3		81.5		mg/kg	WOD-SS-104	60/60	N/A	81.5	N	550	N	N	BSL
7440-41-7	Beryllium	0.029		0.6	L	mg/kg	WOD-SS-103	46/56	0.1-0.12	0.6	N	16	N	N	BSL
7440-43-9	Cadmium	0.035	L	0.24	L	mg/kg	WOD-SS-106	10/51	0.031-0.12	0.24	N	3.9	N	N	BSL
7440-70-2	Calcium	28.2		3880		mg/kg	WOD-SS-136	57/60	11.8-12.8	3880	N		N	N	NUT
7440-47-3	Chromium	1.5		20.9	J	mg/kg	WOD-SS-135	60/60	N/A	20.9	N	23	N	N	BSL
7440-48-4	Cobalt	0.14	K	3.9		mg/kg	WOD-SS-139	60/60	N/A	3.9	N	160	N	N	BSL
7440-50-8	Copper	0.61		21.1	J	mg/kg	WOD-SS-135	53/53	N/A	21.1	N	310	N	N	BSL
7439-89-6	Iron	1460		14200		mg/kg	WOD-SS-137	60/60	N/A	14200	N	2300	N	N	BKG
7439-92-1	Lead	1.8		71		mg/kg	WOD-SS-137	60/60	N/A	71	N	400	C	N	BSL
7439-95-4	Magnesium	74.3		4170	J	mg/kg	WOD-SS-135	60/60	N/A	4170	N		N	N	NUT
7439-96-5	Manganese	2.8		312		mg/kg	WOD-SS-127	60/60	N/A	312	N	160	N	N	BKG
7439-97-6	Mercury	0.02		0.4	J	mg/kg	WOD-SS-128	25/59	0.014-0.06	0.4	N	0.78	N	N	BSL
7440-02-0	Nickel	0.55		14.2	J	mg/kg	WOD-SS-135	60/60	N/A	14.2	N	160	N	N	BSL
7440-09-7	Potassium	102		1170	J	mg/kg	WOD-SS-135	52/52	N/A	1170	N		N	N	NUT
7782-49-2	Selenium	0.23		1.5	J	mg/kg	WOD-SS-135	15/59	0.18-1.6	1.5	N	39	N	N	BSL
7440-22-4	Silver	0.13	K	2.3		mg/kg	WOD-SS-136	28/51	0.088-0.27	2.3	NA	39	N	N	BSL
7440-23-5	Sodium	20.1	K	3820	J	mg/kg	WOD-SS-135	29/35	3.7-5.5	3820	Y		N	N	NUT
7440-28-0	Thallium	0.21		0.21		mg/kg	WOD-SS-116	1/60	0.13-0.76	0.21	N	0.55	N	N	BSL
7440-62-2	Vanadium	2.6		70.7	J	mg/kg	WOD-SS-135	60/60	N/A	70.7	N	55	N	N	BKG
7440-66-6	Zinc	1.2		53.2		mg/kg	3WFF16-SS14	56/56	N/A	53.2	N	2300	N	N	BSL
11096-82-5	Aroclor-1260	180	J	220	J	ug/kg	WOD-SS-135	2/60	35-380	220	NA	320	C	N	BSL
95-50-1	1,2-Dichlorobenzene	2	J	3	J	ug/kg	WOD-SS-126	2/39	10-74	3	NA	700000	N	N	BSL
541-73-1	1,3-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/38	10-74	3	NA	230000	N	N	BSL
106-46-7	1,4-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/38	10-74	3	NA	27000	C	N	BSL
56-55-3	Benz(a)anthracene	37	J	210	J	ug/kg	WOD-SS-139	7/60	340-7400	210	N	870	C	N	BSL
100527	Benzaldehyde	46	J	1500	J	ug/kg	WOD-SS-135	20/35	350-1900	1500	NA	780000	N	N	BSL
50-32-8	Benzo(a)pyrene	47	J	1300		ug/kg	3WFF16-SS10	9/60	340-7400	1300	N	87	C	Y	ASL
205-99-2	Benzo(b)fluoranthene	43	J	430	J	ug/kg	WOD-SS-139	9/60	340-7400	430	N	870	C	N	BSL
191-24-2	Benzo(g,h,i)perylene	83	J	590		ug/kg	3WFF16-SS10-DUP	6/60	340-7400	590	NA	230000	N	N	BSL
207-08-9	Benzo(k)fluoranthene	61	J	180	J	ug/kg	WOD-SS-139	4/60	340-7400	180	NA	8700	C	N	BSL
117-81-7	Bis(2-ethylhexyl) Phthalate	40	J	2800		ug/kg	3WFF16-SS9	25/59	340-7400	2800	Y	46000	C	N	BSL
218-01-9	Chrysene	37	J	410		ug/kg	3WFF16-SS10-DUP	12/60	350-7400	410	N	87000	C	N	BSL
206-44-0	Fluoranthene	55	J	280	J	ug/kg	WOD-SS-125	8/60	340-7400	280	N	310000	N	N	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	81	J	230	J	ug/kg	WOD-SS-139	5/60	340-7400	230	NA	870	C	N	BSL
85-01-8	Phenanthrene	41	J	77	J	ug/kg	WOD-SS-125	4/60	340-7400	77	NA	230000	N	N	BSL
129-00-0	Pyrene	66	J	280	J	ug/kg	WOD-SS-125	8/60	340-7400	280	N	230000	N	N	BSL
120-82-1	1,2,4-Trichlorobenzene	2	J	2	J	ug/kg	WOD-SS-126	1/38	10-74	2	NA	78000	N	N	BSL
95636	1,2,4-Trimethylbenzene	1	J	5	J	ug/kg	WOD-SS-127	3/39	10-74	5	NA	390000	N	N	BSL
108678	1,3,5-Trimethylbenzene	2	J	4	J	ug/kg	WOD-SS-126	3/39	10-74	4	NA	390000	N	N	BSL
78-93-3	2-Butanone	2	J	100		ug/kg	WOD-SS-136	9/60	10-74	100	N	4700000	N	N	BSL
591-78-6	2-Hexanone	4	J	20	J	ug/kg	WOD-SS-131	3/60	10-74	20	NA	310000	N	N	BSL
108-10-1	4-Methyl-2-pentanone	2	J	3	J	ug/kg	WOD-SS-127	2/60	10-74	3	NA	630000	N	N	BSL

TABLE 7.1 (RAGS D 2)
SELECTION OF CHEMICALS OF POTENTIAL CONCERN, SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision	Screening Toxicity Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
67-64-1	Acetone	130		920		ug/kg	WOD-SS-136	7/30	10-150	920	N	780000	N	N	BSL
75-15-0	Carbon Disulfide	6	J	13	J	ug/kg	WOD-SS-135	3/60	10-64	13	NA	780000	N	N	BSL
108-90-7	Chlorobenzene	1	J	1	J	ug/kg	WOD-SS-127	1/60	10-74	1	NA	1600000	C	N	BSL
100-41-4	Ethylbenzene	2	J	2	J	ug/kg	WOD-SS-126	2/60	10-74	2	NA	780000	N	N	BSL
98-82-8	Isopropylbenzene	2	J	2	J	ug/kg	WOD-SS-126	2/39	10-74	2	NA	780000	N	N	BSL
1330207	M,p-xylene	4	J	4	J	ug/kg	WOD-SS-126	2/39	10-74	4	NA	1600000	N	N	BSL
79209	Methyl Acetate	2	J	210		ug/kg	WOD-SS-136	29/39	10-57	210	NA	7800000	N	N	BSL
95-47-6	O-xylene	2	J	2	J	ug/kg	WOD-SS-126	2/39	10-74	2	NA	1600000	N	N	BSL
100-42-5	Styrene	2	J	2	J	ug/kg	WOD-SS-126	2/60	10-74	2	NA	1600000	N	N	BSL
108-88-3	Toluene	1	J	2	J	ug/kg	WOD-SS-120	2/60	10-74	2	NA	1600000	N	N	BSL
1330-20-7	Xylene (Total)	6	J	6	J	ug/kg	WOD-SS-126	2/60	10-74	6	NA	1600000	N	N	BSL

(1) Minimum/maximum detected concentration.
(2) Overall decision from multiple statistical background tests: Y - greater than background; N - not greater than background;
NA - insufficient samples to conclude not greater than background. Metals not greater than background were eliminated as COPCs.
(3) Region 3 residential soil RBC used for all substances except lead. RBCs based on noncancer (footnoted "N") were adjusted to a HQ of 1.0
(4) Rationale Codes Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Background Levels (BKG)
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
J = Estimated Value
K = Biased High Value
L = Biased Low Value
C = Carcinogenic
N = Non-Carcinogenic

TABLE 7.2 (RAGS D 2)
SELECTION OF CHEMICALS OF POTENTIAL CONCERN, SOIL* (SURFACE AND SUBSURFACE SOIL)
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision		Screening Toxicity Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
											SS	SB				
7429-90-5	Aluminum	613		47600		mg/kg	WOD-SU-111-0507	86/86	N/A	47600	N	N	7800	N	N	BKG
7440-36-0	Antimony	0.36	L	18.3	L	mg/kg	WOD-SU-111-0507	3/59	0.13-0.82	18.3	NA	NA	3.1	N	Y	ASL
7440-38-2	Arsenic	0.46		11.9	L	mg/kg	WOD-SU-111-0507	83/86	0.55-0.63	11.9	N	N	0.43	C	N	BKG
7440-39-3	Barium	3.3		983		mg/kg	WOD-SU-111-0507	86/86	N/A	983	N	N	550	N	N	BKG
7440-41-7	Beryllium	0.029		0.6	L	mg/kg	WOD-SS-103	71/82	0.024-0.12	0.6	N	N	16	N	N	BSL
7440-43-9	Cadmium	0.034		23.4	L	mg/kg	WOD-SU-111-0507	14/77	0.031-0.12	23.4	N	NA	3.9	N	N	BKG
7440-70-2	Calcium	22.4		55400		mg/kg	WOD-SU-111-0507	74/82	10.8-13.4	55400	N	N		N	N	NUT
7440-47-3	Chromium	0.78		78.6		mg/kg	WOD-SU-111-0507	86/86	N/A	78.6	N	N	23	N	N	BKG
7440-48-4	Cobalt	0.087		6.3	K	mg/kg	WOD-SU-111-0507	86/86	N/A	6.3	N	N	160	N	N	BSL
7440-50-8	Copper	0.31		3040		mg/kg	WOD-SU-111-0507	63/64	0.2-0.2	3040	N	N	310	N	N	BKG
7439-89-6	Iron	606		127000		mg/kg	WOD-SU-111-0507	86/86	N/A	127000	N	N	2300	N	N	BKG
7439-92-1	Lead	0.45		1100		mg/kg	WOD-SU-111-0507	86/86	N/A	1100	N	N	400	C	N	BKG
7439-95-4	Magnesium	42.8		4170	J	mg/kg	WOD-SS-135	86/86	N/A	4170	N	N		N	N	NUT
7439-96-5	Manganese	2.8		1100		mg/kg	WOD-SU-111-0507	86/86	N/A	1100	N	N	160	N	N	BKG
7439-97-6	Mercury	0.02		0.4	J	mg/kg	WOD-SS-128	27/85	0.014-0.06	0.4	N	N	0.78	N	N	BSL
7440-02-0	Nickel	0.43		56.8		mg/kg	WOD-SU-111-0507	85/85	N/A	56.8	N	N	160	N	N	BSL
7440-09-7	Potassium	102		1830	K	mg/kg	WOD-SU-111-0507	66/66	N/A	1830	N	N		N	N	NUT
7782-49-2	Selenium	0.23		1.5	J	mg/kg	WOD-SS-135	15/85	0.18-1.6	1.5	N	ND	39	N	N	BSL
7440-22-4	Silver	0.11		389		mg/kg	WOD-SU-111-0507	37/72	0.088-0.27	389	NA	NA	39	N	Y	ASL
7440-23-5	Sodium	12.4		3820	J	mg/kg	WOD-SS-135	32/45	3.6-5.5	3820	Y	N		N	N	NUT
7440-28-0	Thallium	0.18	L	3.5	K	mg/kg	WOD-SU-111-0507	3/86	0.13-0.76	3.5	N	NA	0.55	N	N	BKG
7440-62-2	Vanadium	1.1		92		mg/kg	WOD-SU-111-0507	86/86	N/A	92	N	N	55	N	N	BKG
7440-66-6	Zinc	0.75		3550		mg/kg	WOD-SU-111-0507	78/78	N/A	3550	N	N	2300	N	N	BKG
11096-82-5	Aroclor-1260	180	J	220	J	ug/kg	WOD-SS-135	2/86	35-380	220	NA	ND	320	C	N	BSL
95-50-1	1,2-Dichlorobenzene	2	J	3	J	ug/kg	WOD-SS-126	2/64	9-74	3	NA	ND	700000	N	N	BSL
541-73-1	1,3-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/63	9-74	3	NA	ND	230000	N	N	BSL
106-46-7	1,4-Dichlorobenzene	3	J	3	J	ug/kg	WOD-SS-126	2/63	9-74	3	NA	ND	27000	C	N	BSL
56-55-3	Benz(a)anthracene	37	J	210	J	ug/kg	WOD-SS-139	8/86	340-7400	210	N	NA	870	C	N	BSL
100527	Benzaldehyde	45	J	1500	J	ug/kg	WOD-SS-135	21/58	340-1900	1500	NA	NA	780000	N	N	BSL
50-32-8	Benzo(a)pyrene	47	J	1300		ug/kg	3WFF16-SS10	10/86	340-7400	1300	N	NA	87	C	Y	ASL
205-99-2	Benzo(b)fluoranthene	43	J	430	J	ug/kg	WOD-SS-139	11/86	340-7400	430	N	NA	870	C	N	BSL
191-24-2	Benzo(g,h,i)perylene	83	J	590		ug/kg	3WFF16-SS10-DUP	6/86	340-7400	590	NA	ND	230000	N	N	BSL
207-08-9	Benzo(k)fluoranthene	61	J	180	J	ug/kg	WOD-SS-139	4/86	340-7400	180	NA	ND	8700	C	N	BSL
117-81-7	Bis(2-ethylhexyl) Phthalate	37	J	2800		ug/kg	3WFF16-SS9	30/85	340-7400	2800	Y	N	46000	C	N	BSL
218-01-9	Chrysene	37	J	410		ug/kg	3WFF16-SS10-DUP	14/86	340-7400	410	N	NA	87000	C	N	BSL
206-44-0	Fluoranthene	40	J	280	J	ug/kg	WOD-SS-125	11/86	340-7400	280	N	NA	310000	N	N	BSL
193-39-5	Indeno(1,2,3-cd)pyrene	81	J	230	J	ug/kg	WOD-SS-139	5/86	340-7400	230	NA	ND	870	C	N	BSL
85-01-8	Phenanthrene	41	J	77	J	ug/kg	WOD-SS-125	4/86	340-7400	77	NA	ND	230000	N	N	BSL
129-00-0	Pyrene	47	J	280	J	ug/kg	WOD-SS-125	10/86	340-7400	280	N	NA	230000	N	N	BSL
120-82-1	1,2,4-Trichlorobenzene	2	J	2	J	ug/kg	WOD-SS-126	1/63	9-74	2	NA	ND	78000	N	N	BSL
95-63-6	1,2,4-Trimethylbenzene	1	J	5	J	ug/kg	WOD-SS-127	5/64	9-74	5	NA	NA	390000	N	N	BSL
108-678	1,3,5-Trimethylbenzene	1	J	4	J	ug/kg	WOD-SS-126	4/64	9-74	4	NA	NA	390000	N	N	BSL
78-93-3	2-Butanone	2	J	100		ug/kg	WOD-SS-136	10/86	9-74	100	N	NA	4700000	N	N	BSL
591-78-6	2-Hexanone	4	J	20	J	ug/kg	WOD-SS-131	3/83	9-74	20	NA	ND	310000	N	N	BSL
108-10-1	4-Methyl-2-pentanone	2	J	3	J	ug/kg	WOD-SS-127	2/86	9-74	3	NA	ND	630000	N	N	BSL
67-64-1	Acetone	8	J	920		ug/kg	WOD-SS-136	9/34	10-150	920	N	NA	780000	N	N	BSL
71-43-2	Benzene	42	J	42	J	ug/kg	WOD-SU-111-0507	1/86	9-74	42	ND	NA	12000	C	N	BSL
75-15-0	Carbon Disulfide	4	J	13	J	ug/kg	WOD-SS-135	4/86	9-64	13	NA	NA	780000	N	N	BSL
108-90-7	Chlorobenzene	1	J	1	J	ug/kg	WOD-SS-127	1/86	9-74	1	NA	ND	1600000	C	N	BSL

TABLE 7.2 (RAGS D 2)
SELECTION OF CHEMICALS OF POTENTIAL CONCERN, SOIL* (SURFACE AND SUBSURFACE SOIL)
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background (2) Decision		Screening Toxicity Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
											SS	SB				
100-41-4	Ethylbenzene	2	J	2	J	ug/kg	WOD-SS-126	3/86	9-74	2	NA	NA	780000	N	N	BSL
98-82-8	Isopropylbenzene	2	J	2	J	ug/kg	WOD-SS-126	2/65	9-74	2	NA	ND	780000	N	N	BSL
1330207	M,p-xylene	1	J	4	J	ug/kg	WOD-SS-126	4/65	9-74	4	NA	NA	1600000	N	N	BSL
79209	Methyl Acetate	2	J	210		ug/kg	WOD-SS-136	30/65	9-57	210	NA	NA	7800000	N	N	BSL
95-47-6	O-xylene	1	J	2	J	ug/kg	WOD-SS-126	3/65	9-74	2	NA	NA	1600000	N	N	BSL
100-42-5	Styrene	2	J	2	J	ug/kg	WOD-SS-126	2/86	9-74	2	NA	ND	1600000	N	N	BSL
108-88-3	Toluene	1	J	10	J	ug/kg	WOD-SU-111-0507	3/86	9-74	10	NA	NA	1600000	N	N	BSL
1330-20-7	Xylene (Total)	1	J	6	J	ug/kg	WOD-SS-126	4/86	9-74	6	NA	NA	1600000	N	N	BSL

(1) Minimum/maximum detected concentration.
(2) SS/SB - Separate columns show background tests for surface/subsurface soil. Results of statistics: Y - greater than background; N - not great
NA - insufficient samples to conclude not greater than background. ND - not detected. Metals not greater than background in SS and SB were eliminated as COPCs.
(3) Region 3 RBCs for residential exposure listed for COPCs except lead. RBCs based on noncancer (footnoted "N") were adjusted to a HQ of 1
(4) Rationale Codes Selection Reason: Above Screening Levels (ASL)
Deletion Reason: Background Levels (BKG) not exceeded in surface soil or subsurface soil.
No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions:
N/A = Not Applicable
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
J = Estimated Value
K = Biased High Value
L = Biased Low Value
C = Carcinogenic
N = Non-Carcinogenic

TABLE 7.3 (RAGS D 2)
SELECTION OF CHEMICALS OF POTENTIAL CONCERN, GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Ingestion, Dermal Contact, or Inhalation

CAS Number	Chemical	Minimum Concentration (1)	Minimum Qualifier	Maximum Concentration (1)	Maximum Qualifier	Units	Location of Maximum Concentration	Detection Frequency	Range of Detection Limits	Concentration Used for Screening	Background Value (2)		Screening Toxicity Value (3)		COPC Flag	Rationale for Contaminant Deletion or Selection (4)
7429-90-5	Aluminum	831	J	8220		ug/L	WOD-MW4	5/5	N/A	8220	N/A	NA	3700	N	Y	ASL
7440-38-2	Arsenic	21.4		21.4		ug/L	WOD-WFF16-GW2D	1/8	3-3	21.4	N/A	NA	0.045	C	Y	ASL
7440-39-3	Barium	32.4		117		ug/L	WOD-WFF16-GW2S	11/11	N/A	117	N/A	NA	260	N	N	BSL
7440-43-9	Cadmium	0.92	K	0.92	K	ug/L	WOD-WFF16-GW2D	1/12	0.7-0.7	0.92	N/A	NA	1.8	N	N	BSL
7440-70-2	Calcium	1230		40500		ug/L	WOD-WFF16-GW6	12/12	N/A	40500	N/A	NA		N	N	NUT
7440-47-3	Chromium	6.1		147		ug/L	WOD-WFF16-GW1	3/3	N/A	147	N/A	NA	11	N	Y	ASL
7439-89-6	Iron	50.6		49900		ug/L	WOD-WFF16-GW7	12/12	N/A	49900	N/A	NA	1100	N	Y	ASL
7439-92-1	Lead	5.1		68.6		ug/L	WOD-WFF15-GW7	2/12	4-4	68.6	N/A	NA	15	C	Y	ASL
7439-95-4	Magnesium	1520		19900		ug/L	WOD-WFF16-GW5	12/12	N/A	19900	N/A	NA		N	N	NUT
7439-96-5	Manganese	15		641		ug/L	WOD-WFF15-GW7	12/12	N/A	641	N/A	NA	73	N	Y	ASL
7440-02-0	Nickel	40.2		49.1		ug/L	WOD-WFF16-GW3	2/3	0.8-0.8	49.1	N/A	NA	73	N	N	BSL
7440-09-7	Potassium	1160		10900		ug/L	WOD-WFF16-GW5	12/12	N/A	10900	N/A	NA		N	N	NUT
7440-22-4	Silver	2		3.1	K	ug/L	WOD-WFF16-GW2D	4/9	2-2	3.1	N/A	NA	18	N	N	BSL
7440-23-5	Sodium	2810		30200		ug/L	WOD-WFF16-GW7-DUP	12/12	N/A	30200	N/A	NA		N	N	NUT
7440-62-2	Vanadium	9.9		9.9		ug/L	WOD-MW4	1/3	0.7-0.7	9.9	N/A	NA	26	N	N	BSL
91-57-6	2-Methylnaphthalene	130		130		ug/L	WOD-WFF15-GW7	1/12	5-5	130	N/A	NA	12	N	Y	ASL
106-44-5	4-Methylphenol	42		42		ug/L	WOD-WFF15-GW2	1/11	5-5	42	N/A	NA	18	N	Y	ASL
83-32-9	Acenaphthene	1	J	9		ug/L	WOD-WFF15-GW7	2/12	5-5	9	N/A	NA	37	N	N	BSL
117-81-7	Bis(2-ethylhexyl) Phtha	2	J	18		ug/L	WOD-WFF16-GW7-DUP	3/12	5-5	18	N/A	NA	4.8	C	Y	ASL
132-64-9	Dibenzofuran	4	J	4	J	ug/L	WOD-WFF15-GW7	1/12	5-5	4	N/A	NA	1.2	N	Y	ASL
86-73-7	Fluorene	2	J	12		ug/L	WOD-WFF15-GW7	2/12	5-5	12	N/A	NA	24	N	N	BSL
91-20-3	Naphthalene	130		130		ug/L	WOD-WFF15-GW7	1/12	5-5	130	N/A	NA	0.65	N	Y	ASL
85-01-8	Phenanthrene	2	J	15		ug/L	WOD-WFF15-GW7	2/12	5-5	15	N/A	NA	18	N	N	BSL
95636	1,2,4-Trimethylbenzene	170		170		ug/L	WOD-WFF15-GW7	1/12	1-1	170	N/A	NA	1.2	N	Y	ASL
156-59-4	1,2-Dichloroethene (cis	1		3		ug/L	WOD-WFF15-GW1	4/12	1-1	3	N/A	NA	6.1	N	N	BSL
108678	1,3,5-Trimethylbenzene	74		74		ug/L	WOD-WFF15-GW7	1/12	1-1	74	N/A	NA	1.2	N	Y	ASL
78-93-3	2-Butanone	6		6		ug/L	WOD-WFF15-GW2	1/12	5-5	6	N/A	NA	190	N	N	BSL
71-43-2	Benzene	8		11		ug/L	WOD-WFF15-GW7	2/12	1-1	11	N/A	NA	0.34	C	Y	ASL
100-41-4	Ethylbenzene	8		68		ug/L	WOD-WFF15-GW7	2/12	1-1	68	N/A	NA	130	N	N	BSL
98-82-8	Isopropylbenzene	1		6		ug/L	WOD-WFF15-GW7	2/12	1-1	6	N/A	NA	66	N	N	BSL
108-88-3	Toluene	2		120		ug/L	WOD-WFF15-GW7	2/12	1-1	120	N/A	NA	75	N	Y	ASL
108872	Methylcyclohexane	18		18		ug/L	WOD-WFF15-GW7	1/12	1-1	18	N/A	NA	630	N	N	BSL
127-18-4	Tetrachloroethene	5		5		ug/L	WOD-WFF15-GW7	1/12	1-1	5	N/A	NA	0.1	C	Y	ASL
100-42-5	Styrene	1		5		ug/L	WOD-WFF15-GW7	2/12	1-1	5	N/A	NA	160	N	N	BSL
1330207	M,p-xylene	370		370		ug/L	WOD-WFF15-GW7	1/12	1-1	370	N/A	NA	21	N	Y	ASL
95-47-6	O-xylene	170		170		ug/L	WOD-WFF15-GW7	1/12	1-1	170	N/A	NA	21	N	Y	ASL
1330-20-7	Xylene (Total)	540		540		ug/L	WOD-WFF15-GW7	1/12	1-1	540	N/A	NA	21	N	Y	ASL

(1) Minimum/maximum detected concentration.
(2) N/A - Refer to supporting information for background discussion.
Background statistical analysis did not include sufficient samples for adequate statistical power.
(3) Region 3 RBC for residential tap water exposure. RBCs based on noncancer (footnoted "N") were adjusted to a HQ of 1.0
(4) Rationale Codes Selection Reason: Above Screening Levels (ASL)
Deletion Reason: No Toxicity Information (NTX)
Essential Nutrient (NUT)
Below Screening Level (BSL)

Definitions: N/A = Not Applicable
SQL = Sample Quantitation Limit
COPC = Chemical of Potential Concern
L = Biased High Value
C = Carcinogenic
N = Non-Carcinogenic

TABLE 7.4 (RAGS D 3)
MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY, SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Benzo(a)pyrene	ug/kg	312	5.91E+02	1.30E+03		ug/kg	591	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	591	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N);
Mean of Normal Data (Mean-N); 99% UCL of Chebychev minimum variance (99% UCL-Chebmv); 95% UCL of Chebychev minimum variance (95% UCL-Chebmv);
95% UCL of H-distribution (95% UCL-H); 95% UCL of nonparametric Chebychev (95% UCL-Cheby); 97.5% UCL of nonparametric Chebychev (97.5% UCL-Cheby).
Rationale: Log Standard Deviation (lgsd); Shapiro Wilk's normal test statistic (Wno); Shapiro Wilk's table (critical) value (Wt); Shapiro Wilk's lognormal test statistic (Wlg); Number of samples in dataset (N).
Integrated Exposure Uptake Biokinetic Model (IEUBK); Arithmetic mean (AVG).
-- - Statistical UCL (t, H-, chebychev) does not apply because distributional shape uncertain for small n.

TABLE 7.5 (RAGS D 3)

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY, SOIL*

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future

Medium: Soil*

Exposure Medium: Soil*

Exposure Point: Ingestion, Dermal Contact, or Particulate Inhalation

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Antimony	mg/kg	0.467	1.74	18.3	L	mg/kg	1.74	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	1.74	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd
Silver	mg/kg	5.26	37.2	389		mg/kg	37.2	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	37.2	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
Benzo(a)pyrene	ug/kg	284	4.86E+02	1.30E+03		ug/kg	486	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	486	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N);
Mean of Normal Data (Mean-N); 99% UCL of Chebychev minimum variance (99% UCL-Chebmv); 95% UCL of Chebychev minimum variance (95% UCL-Chebmv);
95% UCL of H-distribution (95% UCL-H); 95% UCL of nonparametric Chebychev (95% UCL-Cheby); 97.5% UCL of nonparametric Chebychev (97.5% UCL-Cheby).

Rationale: Log Standard Deviation (lgsd); Shapiro Wilk's normal test statistic (Wno); Shapiro Wilk's table (critical) value (Wt); Shapiro Wilk's lognormal test statistic (Wlg); Number of samples in dataset (N).
Integrated Exposure Uptake Biokinetic Model (IEUBK); Arithmetic mean (AVG).

-- - Statistical UCL (t, H-, chebychev) does not apply because distributional shape uncertain for small n.

L - Value biased low based on data validation.

TABLE 7.6 (RAGS D 3)

MEDIUM-SPECIFIC EXPOSURE POINT CONCENTRATION SUMMARY, GROUNDWATER

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current/Future

Medium: Groundwater

Exposure Medium: Groundwater

Exposure Point: Ingestion, Dermal Contact, or Inhalation

Chemical of Potential Concern	Units	Arithmetic Mean	95% UCL of Normal Data	Maximum Detected Concentration	Maximum Qualifier	EPC Units	Reasonable Maximum Exposure			Central Tendency		
							Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale	Medium EPC Value	Medium EPC Statistic	Medium EPC Rationale
Aluminum	ug/L	2780	2.4E+04	8.2E+03		ug/L	8220	Max	Max<95%UCL-H	8220	Max	Max<95%UCL-H
Arsenic	ug/L	3.99	1.5E+01	2.1E+01		ug/L	15.1	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	15.1	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd
Chromium	ug/L	92.4	0.0E+00	1.5E+02		ug/L	147	Max	n<5,use Max	147	Max	n<5,use Max
Iron	ug/L	11300	9.4E+04	5.0E+04		ug/L	49900	Max	Max<99%UCL-Chebmv	49900	Max	Max<99%UCL-Chebmv
Lead	ug/L	7.81	1.8E+01	6.9E+01		ug/L	7.81	Mean-N	IEUBK Uses AVG	7.81	Mean-N	IEUBK Uses AVG
Manganese	ug/L	121	4.7E+02	6.4E+02		ug/L	466	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	466	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
2-Methylnaphthalene	ug/L	13.1	8.0E+01	1.3E+02		ug/L	80.3	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	80.3	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
4-Methylphenol	ug/L	6.09	2.2E+01	4.2E+01		ug/L	22.1	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	22.1	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd
Bis(2-ethylhexyl) Phthalate	ug/L	3.23	4.4E+00	1.8E+01		ug/L	4.4	95%UCL-N	lgsd<0.5,use normal	4.4	95%UCL-N	lgsd<0.5,use normal
Dibenzofuran	ug/L	2.63	2.9E+00	4.0E+00	J	ug/L	2.85	95%UCL-N	lgsd<0.5,use normal	2.85	95%UCL-N	lgsd<0.5,use normal
Naphthalene	ug/L	13.1	8.0E+01	1.3E+02		ug/L	80.3	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	80.3	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
1,2,4-Trimethylbenzene	ug/L	14.6	1.0E+02	1.7E+02		ug/L	104	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	104	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
1,3,5-Trimethylbenzene	ug/L	6.63	4.5E+01	7.4E+01		ug/L	45.4	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	45.4	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
Benzene	ug/L	2	8.5E+00	1.1E+01		ug/L	8.5	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	8.5	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
Tetrachloroethene	ug/L	0.875	2.6E+00	5.0E+00		ug/L	2.55	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	2.55	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd
Toluene	ug/L	10.6	7.4E+01	1.2E+02		ug/L	73.5	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	73.5	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2
Xylene (Total)	ug/L	45.5	5.0E+02	5.4E+02		ug/L	495	99%UCL-Cheby	Wt>Wno&Wlg,2<=lgsd<3	495	99%UCL-Cheby	Wt>Wno&Wlg,2<=lgsd<3

Statistics: Maximum Detected Value (Max); 95% UCL of Normal Data (95% UCL-N);
Mean of Normal Data (Mean-N); 99% UCL of Chebychev minimum variance (99% UCL-Chebmv); 95% UCL of Chebychev minimum variance (95% UCL-Chebmv);
95% UCL of H-distribution (95% UCL-H); 95% UCL of nonparametric Chebychev (95% UCL-Cheby); 97.5% UCL of nonparametric Chebychev (97.5% UCL-Cheby).

Rationale: Log Standard Deviation (lgsd); Shapiro Wilk's normal test statistic (Wno); Shapiro Wilk's table (critical) value (Wt); Shapiro Wilk's lognormal test statistic (Wlg); Number of samples in dataset (N).
Integrated Exposure Uptake Biokinetic Model (IEUBK); Arithmetic mean (AVG).

-- - Statistical UCL (t, H-, chebychev) does not apply because distributional shape uncertain for small n.

J - Estimated Value.

TABLE 7.7 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL CHILD CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	1.29	EPA, 1997	0.74	EPA, 1997	CW x IR-W x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested from Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	350	EPA, 1997	
	ED	Exposure Duration	years	6	EPA, 1997	2	EPA, 1993	
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	
	BW	Body Weight	kg	14.4	EPA, 1997	14.4	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	EPA, 1989	730	EPA, 1989	

Notes/Sources:

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.8 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL CHILD CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm2	6600	(a)	6600	(a)	CW x SA x KP x Function(ET) x EF x ED x CF1 x
	KP	Permeability Constant (Dermal for Liquids)	cm/hr	Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	CF2 x 1/(BW x AT)
	FA	Fraction absorbed (unitless)		Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	
	ET	Exposure Time	hr/day	1	EPA, 1997	0.33	EPA, 2001	Where: Function(ET) = ET for inorganics, or
	EF	Exposure Frequency	days/year	350	EPA, 1997	350	EPA, 1993	FA x 2 x (6 x Tau x ET / PI)^0.5 for organics where ET < T*, or
	ED	Exposure Duration	years	6	EPA, 1997	2	EPA, 1993	FA x { ET/(1+B) + 2 x Tau x (1 + 3B + 3B ^{2})/[(1+B)^2] } for organics, ET > T*.
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	See EPA,2001 for chemical-specific constants Tau, B, T*
	CF2	Conversion Factor 2	l/cm3	0.001	--	0.001	--	
	BW	Body Weight	kg	14.4	EPA, 1997	14.4	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	EPA, 1989	730	EPA, 1989	

Notes/Sources:

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Surface Area represented by whole body (child age 0 to 6 years).

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.9 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-W	Ingestion Rate of Water	liters/day	2	EPA, 1997	1.4	EPA, 1997	CW x IR-W x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested from Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	350	EPA, 1997	
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993; 1997	
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	

Notes/Sources:

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.10 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	CWD	VOC Water Conc. lost in Shower by Evaporation	ug/l	See Shower Model	Foster & Chros.,1987	See Shower Model	Foster & Chros.,1987	
	SA	Skin Surface Area Available for Contact	cm2	18000	(a)	18000	(a)	(CW - CWD) x SA x KP x Function(ET) x EF x ED x CF1 x
	KP	Permeability Constant (Dermal for Liquids)	cm/hr	Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	CF2 x 1/(BW x AT)
	FA	Fraction absorbed (unitless)		Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	
	ET	Exposure Time	hr/day	0.25	EPA, 1997	0.167	EPA, 1997	Where: Function(ET) = ET for inorganics, or
	EF	Exposure Frequency	days/year	350	EPA, 1997	350	EPA, 1993	FA x 2 x (6 x Tau x ET / PI)^0.5 for organics where ET < T*, or
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993; 1997	FA x { ET/(1+B) + 2 x Tau x (1 + 3B + $3B^2$)/[$(1+B)^2$] } for organics, ET > T*.
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	See EPA,2001 for chemical-specific constants Tau, B, T*
	CF2	Conversion Factor 2	l/cm3	0.001	--	0.001	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	

Notes/Sources:

(a). Surface area represented by whole body of an adult.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.11 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors during showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Inhalation	EF	Exposure Frequency	days/year	350	EPA, 1997	350	EPA, 1997	Intake (mg/kg-day) = (D x EF x ED)/AT
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993; 1997	See Foster and Chrotowski, 1987
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	
	D	Inhalation Dose for Each Shower	mg/kg/shower	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: D = [(IR x S) / (BW x Ra x CF1)] x Q
	IR-SH	Inhalation Rate in Shower	l/min	14	EPA, 2002	9.2	EPA, 1997	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	CF1	Conversion Factor	(ug x l)/(mg x m3)	1.00E+06		1.00E+06		
	Q	Function of Air Exchange Rate & Time in Shower & Shower Room	min	2.7897	Fos&Chr, 1987	2.7897	Fos&Chr, 1987	where: Q = Ds + [(exp(-Ra x Dt))/Ra] - [(exp(Ra x (Ds - Dt)))/Ra]
	Ds	Duration of Shower	min	15	EPA, 1997	10	EPA, 1997	
	Dt	Total Time in Shower Room	min	20	EPA, 1997	20	EPA, 1997	
	Ra	Rate of Air Exchange	1/min	1.667E-02	Fos&Chr, 1987	1.667E-02	Fos&Chr, 1987	
	S	Indoor VOC Generation Rate	ug/m3/min	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: S = CWD x FR/SV
	FR	Shower Flow Rate	l/min	12.87	Prof. Judgment	12.87	EPA, 1997	
	SV	Shower Room Air Volume	m3	6	EPA, 1997	6.0	EPA, 1997	
	CWD	Chemical Concentration Leaving Water Droplet after time ts	ug/l	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: CWD = CW x {1-exp[-KaL x ts x (6/d) x CF2 x CF3]}
	CW	Chemical Concentration in Water	ug/l	Chemical Specific	See Table 3	Chemical Specific	See Table 3	
	CF2	Conversion Factor	hr/sec	1/3600		1/3600		
	CF3	Conversion Factor	mm/cm	10		10		
	ts	Shower Droplet Time	sec	2	Fos&Chr, 1987	2	Fos&Chr, 1987	
	d	Shower Droplet Diameter	mm	1	Fos&Chr, 1987	1	Fos&Chr, 1987	
	KaL	Adjusted overall mass transfer coefficient	cm/hr	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: KaL = KL/SQRT[(T1 x us)/(Ts x u1)]
	T1	Calibration Water Temperature of KL	K	293	Fos&Chr, 1987	293	Fos&Chr, 1987	
	Ts	Shower Water Temperature	K	318	Fos&Chr, 1987	318	Fos&Chr, 1987	
	u1	Water Viscosity at T1	centipose	1.002	Fos&Chr, 1987	1.002	Fos&Chr, 1987	
	us	Water Viscosity at Ts	centipose	0.596	Fos&Chr, 1987	0.596	Fos&Chr, 1987	

TABLE 7.11 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors during showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
	KL	Mass Transfer Coefficient	cm/hr	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: KL = 1/[(1/KL) + ((R x T)/(H x kg))]
	R	Ideal Gas law Constant	atm m3/mole/K	8.21E-05	Fos&Chr, 1987	0.0000821	Fos&Chr, 1987	
	T	Absolute Temperature	K	293	Fos&Chr, 1987	293	Fos&Chr, 1987	
	H	Henry's law Constant	atm m3/mole	Chemical Specific	EPA, 1996	Chemical Specific	EPA, 1996	
	kg	Gas-film Mass Transfer Coefficient	cm/hr	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: kg = kH x SQRT[MWH/MW]
	kl	Liquid-film Mass Transfer Coefficient	cm/hr	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	where: kl = kC x SQRT[MWC/MW]
	kH	Gas-film Mass Transfer Coefficient for Water	cm/hr	3000	Fos&Chr, 1987	3000	Fos&Chr, 1987	
	kC	Liquid-film Mass Transfer Coefficient for Carbon Dioxide	cm/hr	20	Fos&Chr, 1987	20	Fos&Chr, 1987	
	MWH	Molecular Weight of Water	g/mole	18	Fos&Chr, 1987	18	Fos&Chr, 1987	
	MWC	Molecular Weight of Carbon Dioxide	g/mole	44	Fos&Chr, 1987	44	Fos&Chr, 1987	
	MW	Molecular Weight of COPC	g/mole	Chemical Specific	Fos&Chr, 1987	Chemical Specific	Fos&Chr, 1987	

Notes/Sources:

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

Default Henry's Law Constants (HLCs) at 25 degrees C obtained from EPA, 1996. See appendix for conversion of HLCs to showering temperature using EPA, 2001.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 1996. Soil Screening Guidance: Users Guide. OSWER. Publication 9355.4-23.

EPA, 2002. Recommended by Region III. Based on an inhalation rate of 20m3/day.

EPA, 2001. Fact Sheet. Correcting the Henry's Law Constant for Soil Temperature, from website: http://www.epa.gov/superfund/programs/risk/airmodel/factsheet.pdf

Shower Model Equations from Foster and Chrostowski, 1987

TABLE 7.12 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CONSTRUCTION WORKER CONTACT WITH GROUNDWATER (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Contact with Groundwater during construction activities
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	SA	Skin Surface Area Available for Contact	cm2	2077	(a)	2077	(a)	CW x SA x KP x Function(ET) x EF x ED x CF1 x
	KP	Permeability Constant (Dermal for Liquids)	cm/hr	Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	CF2 x 1/(BW x AT)
	FA	Fraction absorbed (unitless)		Chemical-Specific	EPA, 2001	Chemical-Specific	EPA, 2001	
	ET	Exposure Time	hr/day	2	(b)	1	(c)	Where: Function(ET) = ET for inorganics, or
	EF	Exposure Frequency	days/year	156	(d)	78	(e)	FA x 2 x (6 x Tau x ET / PI)^0.5 for organics where ET < T*, or
	ED	Exposure Duration	years	1	(d)	1	(e)	FA x { ET/(1+B) + 2 x Tau x (1 + 3B + $3B^2$)/[(1+B)^2] } for organics, ET > T*.
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	See EPA,2001 for chemical-specific constants Tau, B, T*
	CF2	Conversion Factor 2	l/cm3	0.001	--	0.001	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

(a). Surface area represented by hands and forearms of an adult.

(b). Professional Judgment. Exposure Time = 2 hours of skin contact per day under RME.

(c). Professional Judgment. Exposure Time = 1 hour of skin contact per day under CTE value (1/2 RME value).

(d). Professional Judgment. 26 Weeks * 6 days per week = 156 days. Off and on throughout a one year period.

(e). Professional Judgment. 13 Weeks * 6 days per week = 78 days. Off and on throughout a one year period. (1/2 RME value).

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.13 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	VF	Volatilization Factor from Groundwater	l/m3	Chemical-Specific	See Support Calc.	Chemical-Specific	See Support Calc.	(CW x VF) x IR-A x ET x EF x ED x 1/(BW x AT); Where VF=
	IR-A	Inhalation Rate	m3/hr	3.3	Prof Judge	2.5	Prof Judge	function of soil properties, Henrys Law &Diffusion Coef.
	ET	Exposure Time	hours/day	8	Prof Judge	8	Prof Judge	Model Equations From ASTM E 1739 -95, 1995
	EF	Exposure Frequency	days/year	156	Prof Judge	78	Prof Judge	
	ED	Exposure Duration	years	1	Prof Judge	1	Prof Judge	
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.14 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL CHILD CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	200	EPA, 1997	100	EPA, 1997	CS x IR-S x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested From Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 2001	
	ED	Exposure Duration	years	6	EPA, 1997	2	EPA, 1993	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	14.4	EPA, 1997	14.4	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	EPA, 1989	730	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Recommended by EPA Region III.

TABLE 7.15 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL CHILD CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	AF	Adherence Factor	mg/cm2/event	0.2	(a)	0.04	(a)	CS x SA x AF x DABS x EV x EF x ED x CF1 x 1/(BW x AT)
	SA	Surface Area	cm2	2178	(b)	2178	(b)	
	DABS	Dermal Absorption Factor (Solid)	--	Chemical-Specific	EPA, 1995, 2001a	Chemical-Specific	EPA, 1995, 2001a	
	EV	Event Frequency	events/day	1	(c)	1	(c)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 2001b	
	ED	Exposure Duration	years	6	EPA, 1997	2	EPA, 1993	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	14.4	EPA, 1997	14.4	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	EPA, 1989	730	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). EPA, 2001. Adherence factor (mg/cm2-event), weighted average considering applicably exposed body parts <represented by face, forearms, hands, lower legs, and feet of residential child> for soil.

(b). EPA, 2001. Summation of applicably exposed body part surface areas <represented by face, forearms, hands, lower legs, and feet of residential child> for soil (cm2).

(c). Professional Judgment. 1 Event per day.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001a. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

EPA, 2001b. Recommended by EPA Region III.

TABLE 7.16 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL CHILD CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	PEF	Particulate Emission Factor from Soil	m3/kg	1.70E+08^	EPA, 1996	1.70E+08^	EPA, 1996	(CS/PEF) x IN x ET x EF x ED x 1/(BW x AT)
	IN	Inhalation Rate	m3/hr	0.6	EPA, 1997	0.3	EPA, 1997	
	ET	Exposure Time	hr/day	24	(a)	24	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 2001	
	ED	Exposure Duration	years	6	EPA, 1997	2	EPA, 1993	
	BW	Body Weight	kg	14.4	EPA, 1997	14.4	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	2190	EPA, 1989	730	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

^Site-specific PEF shown for WOD.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. 24 Hours per day of exposure based on entire day spent at residence.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1996. Soil Screening Guidance. Users Guide. EPA 9355.4-23. Office of Solid Waste and Emergency Response.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. As Recommended by EPA Region III.

TABLE 7.17 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	100	EPA, 1997	50	EPA, 1997	CS x IR-S x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested From Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 1993	
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	

Notes/Sources:

"Soil"" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.18 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	AF	Adherence Factor	mg/cm2/event	0.07	(a)	0.01	(a)	CS x SA x AF x DABS x EV x EF x ED x CF1 x 1/(BW x AT)
	SA	Surface Area	cm2	4849	(b)	4849	(b)	
	DABS	Dermal Absorption Factor (Solid)	--	Chemical-Specific	EPA, 1995, 2001	Chemical-Specific	EPA, 1995, 2001	
	EV	Event Frequency	events/day	1	(c)	1	(c)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 1993	
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). EPA, 2001. Adherence factor (mg/cm2-event), weighted average considering applicably exposed body parts <represented by face, forearms, hands, and lower legs of residential adult, using gardners or groundskeepers> for soil.

(b). EPA, 2001. Summation of applicably exposed body part surface areas <represented by face, forearms, hands, and lower legs of residential adult> for soil (cm2).

(c). Professional Judgment. 1 Event per day.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.19 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE RESIDENTIAL ADULT CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	PEF	Particulate Emission Factor from Soil	m3/kg	1.70E+08^	EPA, 1996	1.70E+08^	EPA, 1996	(CS/PEF) x IN x ET x EF x ED x 1/(BW x AT)
	IN	Inhalation Rate	m3/hr	0.833	EPA, 1997	0.542	EPA, 1997	
	ET	Exposure Time	hr/day	24	(a)	24	(a)	
	EF	Exposure Frequency	days/year	350	EPA, 1997	234	EPA, 1993	
	ED	Exposure Duration	years	24	EPA, 1997	9	EPA, 1993	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	8760	EPA, 1989	3285	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

^Site-specific PEF shown for WOD.

Lifetime exposures for future residents (child/adult) will be quantified indirectly, by adding child and adult cancer risks in the Risk Characterization section of this risk assessment.

(a). Professional Judgment. 24 Hours per day of exposure based on entire day spent at residence.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1996. Soil Screening Guidance. Users Guide. EPA 9355.4-23. Office of Solid Waste and Emergency Response.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.20 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CURRENT INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	50	EPA, 1997	50	EPA, 1997	CS x IR-S x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested From Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	39	EPA, 1997	39	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Current/Surface Soil Contact (via ingestion) with Site Surface Soil which remains undisturbed; Industrial Worker

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.21 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CURRENT INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	AF	Adherence Factor	mg/cm2/event	0.2	(a)	0.02	(a)	CS x SA x AF x DABS x EV x EF x ED x CF1 x 1/(BW x AT)
	SA	Surface Area	cm2	2479	(b)	2479	(b)	
	DABS	Dermal Absorption Factor (Solid)	--	Chemical-Specific	EPA, 2001, 1995	Chemical-Specific	EPA, 2001, 1995	
	EV	Event Frequency	events/day	1	(c)	1	(c)	
	EF	Exposure Frequency	days/year	39	EPA, 1997	39	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Current/Surface Soil Contact (via dermal absorption) with Site Surface Soil which remains undisturbed; Industrial Worker

(a). EPA, 2001. Adherence factor (mg/cm2-event), weighted average considering applicably exposed body parts <represented by face, forearms, and hands of industrial worker (heavy equipment operator/utility worker or groundskeeper)> for soil.

(b). EPA, 2001. Summation of applicably exposed body part surface areas <represented by face, forearms, and hands of industrial worker> for soil (cm2).

(c). Professional Judgment. 1 Event per day.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.22 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CURRENT INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	PEF	Particulate Emission Factor from Soil	m3/kg	1.70E+08^	EPA, 1996	1.70E+08^	EPA, 1996	(CS/PEF) x IN x ET x EF x ED x 1/(BW x AT)
	IN	Inhalation Rate	m3/hr	1.5	EPA, 1997	0.6	EPA, 1997	
	ET	Exposure Time	hr/day	8	(a)	8	(a)	
	EF	Exposure Frequency	days/year	39	EPA, 1997	39	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Current/Surface Soil Contact (via inhalation of particulate dust) with Site Surface Soil which remains undisturbed; Industrial Worker

^Site-specific PEF shown for WOD.

(a). Professional Judgment. 8 Hours per day of exposure based on an average workday.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1996. Soil Screening Guidance. Users Guide. EPA 9355.4-23. Office of Solid Waste and Emergency Response.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.23 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE FUTURE INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	50	EPA, 1997	50	EPA, 1997	CS x IR-S x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested From Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	250	EPA, 1997	234***	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Future/Surface Soil Contact (via ingestion) with Site Surface Soil which remains undisturbed; Industrial Worker

(a). Professional Judgment. Fraction ingested is 100% from source.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.24 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE FUTURE INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	AF	Adherence Factor	mg/cm2/event	0.2	(a)	0.02	(a)	CS x SA x AF x DABS x EV x EF x ED x CF1 x 1/(BW x AT)
	SA	Surface Area	cm2	2479	(b)	2479	(b)	
	DABS	Dermal Absorption Factor (Solid)	--	Chemical-Specific	EPA, 2001, 1995	Chemical-Specific	EPA, 2001, 1995	
	EV	Event Frequency	events/day	1	(c)	1	(c)	
	EF	Exposure Frequency	days/year	250	EPA, 1997	234***	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Future/Surface Soil Contact (via dermal absorption) with Site Surface Soil which remains undisturbed; Industrial Worker

(a). EPA, 2001. Adherence factor (mg/cm2-event), weighted average considering applicably exposed body parts <represented by face, forearms, and hands of industrial worker (heavy equipment operator/utility worker or groundskeeper)> for soil.

(b). EPA, 2001. Summation of applicably exposed body part surface areas <represented by face, forearms, and hands of industrial worker> for soil (cm2).

(c). Professional Judgment. 1 Event per day.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.25 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE FUTURE INDUSTRIAL WORKER CONTACT WITH SOIL* (SURFACE AND SUBSURFACE EXPOSURES)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	PEF	Particulate Emission Factor from Soil	m3/kg	1.70E+08^	EPA, 1996	1.70E+08^	EPA, 1996	(CS/PEF) x IN x ET x EF x ED x 1/(BW x AT)
	IN	Inhalation Rate	m3/hr	1.5	EPA, 1997	0.6	EPA, 1997	
	ET	Exposure Time	hr/day	8	(a)	8	(a)	
	EF	Exposure Frequency	days/year	250	EPA, 1997	234***	EPA, 1993	
	ED	Exposure Duration	years	25	EPA, 1997	6.6	EPA, 1997	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	9125	EPA, 1989	2409	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction or landscaping activities.

**These exposure parameters are also valid for Future/Surface Soil Contact (via inhalation of particulate dust) with Site Surface Soil which remains undisturbed; Industrial Worker

^Site-specific PEF shown for WOD.

(a). Professional Judgment. 8 Hours per day of exposure based on an average workday.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1996. Soil Screening Guidance. Users Guide. EPA 9355.4-23. Office of Solid Waste and Emergency Response.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.26 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CONSTRUCTION WORKER CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Ingestion	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	IR-S	Ingestion Rate of Soil	mg/day	480	EPA, 1997	200	EPA, 1997	CS x IR-S x FI x EF x ED x CF1 x 1/(BW x AT)
	FI	Fraction Ingested From Contaminated Source	--	1	(a)	1	(a)	
	EF	Exposure Frequency	days/year	156	(b)	78	(c)	
	ED	Exposure Duration	years	1	(d)	1	(d)	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction activities.

(a). Professional Judgment. Fraction ingested is 100% from source.

(b). Professional Judgment. 26 Weeks * 6 days per week = 156 days. Off and on throughout that year

(c). Professional Judgment. 13 Weeks * 6 days per week = 78 days. Off and on throughout that year

(d). Professional Judgment. 1 Year of exposure.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.27 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CONSTRUCTION WORKER CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Dermal Absorption	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Dermal Absorbed Dose (mg/kg-day) =
	AF	Adherence Factor	mg/cm2/event	0.2	(d)	0.02	(d)	CS x SA x AF x DABS x EV x EF x ED x CF1 x 1/(BW x AT)
	SA	Surface Area	cm2	2479	(e)	2479	(e)	
	DABS	Dermal Absorption Factor (Solid)	--	Chemical-Specific	EPA, 2001, 1995	Chemical-Specific	EPA, 2001, 1995	
	EV	Event Frequency	events/day	1	(b)	1	(b)	
	EF	Exposure Frequency	days/year	156	(a)	78	(e)	
	ED	Exposure Duration	years	1	(c)	1	(c)	
	CF1	Conversion Factor 1	kg/mg	1E-06	--	1E-06	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction activities.

(a). Professional Judgment. 26 Weeks * 6 days per week = 156 days. Off and on throughout that year

(b). Professional Judgment. 1 Event per day.

(c). Professional Judgment. 1 Year of exposure.

(d). EPA, 2001. Adherence factor (mg/cm2-event), weighted average considering applicably exposed body parts <represented by face, forearms, and hands of construction worker (heavy equipment operator/utility worker or groundskeeper)> for soil.

(e). EPA, 2001. Summation of applicably exposed body part surface areas <represented by face, forearms, and hands of construction worker> for soil (cm2).

(f). Professional Judgment. 26 Weeks * 6 days per week = 78 days. Off and on throughout that year

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1995. Assessing Dermal Exposure from Soil, EPA Region III Technical Guidance Manual, EPA/903-K-95-003. December.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

EPA, 2001. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessment. Interim). September. Office of Emergency and Remedial Response. Washington, DC.

TABLE 7.28 (RAGs D Table 4)

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE CONSTRUCTION WORKER CONTACT WITH SOIL (FUTURE EXPOSURE SCENARIOS)

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CT Value	CT Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CS	Chemical Concentration in Soil	mg/kg	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	PEF	Particulate Emission Factor from Soil	m3/kg	1.70E+08^	EPA, 1996	1.70E+08^	EPA, 1996	(CS/PEF) x IN x ET x EF x ED x 1/(BW x AT)
	IN	Inhalation Rate	m3/hr	3.3	EPA, 1997	2.5	EPA, 1997	
	ET	Exposure Time	hr/day	8	(a)	8	(a)	
	EF	Exposure Frequency	days/year	156	(b)	78	(c)	
	ED	Exposure Duration	years	1	(d)	1	(d)	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

"Soil*" Represents surface and subsurface soils that are mixed as a result of construction activities.

^Site-specific PEF shown for WOD.

(a). Professional Judgment. 8 Hours per day of exposure based on an average workday.

(b). Professional Judgment. 26 Weeks * 6 days per week = 156 days. Off and on throughout that year

(c). Professional Judgment. 13 Weeks * 6 days per week = 78 days. Off and on throughout that year

(d). Professional Judgment. 1 Year of exposure.

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1996. Soil Screening Guidance. Users Guide. EPA 9355.4-23. Office of Solid Waste and Emergency Response.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

TABLE 7.29 (RAGS D 5.1)

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ (3)	Dates of RfD: Target Organ (MM/DD/YY)	Dermal Absorption Factor for Soil (1)
Total 2,3,7,8-TCDD Equiv.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03
Aluminum	Chronic	1.00E+00	mg/kg-day	2.70E-01	2.70E-01	mg/kg-day	CNS (Developmental)	100	EPA-NCEA	07/26/01	0.01
Antimony	Chronic	4.00E-04	mg/kg-day	1.50E-01	6.00E-05	mg/kg-day	Blood	1000	IRIS	7/24/03	0.01
Arsenic	Chronic	3.00E-04	mg/kg-day	1.00E+00	3.00E-04	mg/kg-day	Skin/Vascular	3	IRIS	7/24/03	0.03
Chromium	Chronic	3.00E-03	mg/kg-day	2.50E-02	7.50E-05	mg/kg-day	NOAEL	900	IRIS	8/05/03	0.01
Iron	Chronic	3.00E-01	mg/kg-day	1.00E+00	3.00E-01	mg/kg-day	Liver/Blood/GI Tract	1	EPA-NCEA	11/14/01	0.01
Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Manganese	Chronic	2.40E-02	mg/kg-day	4.00E-02	9.60E-04	mg/kg-day	CNS	3	IRIS	7/24/03	0.01
Silver	Chronic	5.00E-03	mg/kg-day	4.00E-02	2.00E-04	mg/kg-day	Skin	3	IRIS	8/13/03	0.01
Aroclor-1260	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.14
2-Methylnaphthalene	Chronic	2.00E-02	mg/kg-day	1.00E+00	2.00E-02	mg/kg-day			EPA-NCEA	04/2003	0.13
4-Methylphenol	Chronic	5.00E-03	mg/kg-day	1.00E+00	5.00E-03	mg/kg-day	CNS/Respiratory	1000	HEAST	1997	0.1
Benz(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Benzo(a)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Bis(2-ethylhexyl) Phthalate	Chronic	2.00E-02	mg/kg-day	1.00E+00	2.00E-02	mg/kg-day	Liver	1000	IRIS	7/24/03	0.1
Carbazole	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Chrysene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Dibenzofuran	Chronic	2.00E-03	mg/kg-day	1.00E+00	2.00E-03	mg/kg-day			EPA-NCEA	04/2003	0.13
Fluoranthene	Chronic	4.00E-02	mg/kg-day	1.00E+00	4.00E-02	mg/kg-day	Liver/Kidney/Blood	3000	IRIS	7/24/03	0.13
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Naphthalene	Chronic	2.00E-02	mg/kg-day	1.00E+00	2.00E-02	mg/kg-day	Decr. Wt. Gain	3000	IRIS	7/24/03	0.13
Pentachlorophenol	Chronic	3.00E-02	mg/kg-day	1.00E+00	3.00E-02	mg/kg-day	Liver/Kidney	100	IRIS	7/24/03	0.25
Pyrene	Chronic	3.00E-02	mg/kg-day	1.00E+00	3.00E-02	mg/kg-day	Kidney	3000	IRIS	7/25/03	0.13
1,1,1-Trichloroethane	Chronic	2.80E-01	mg/kg-day	1.00E+00	2.80E-01	mg/kg-day	CNS	3000	EPA-NCEA	08/04/99	0.0005
1,2,4-Trimethylbenzene	Chronic	5.00E-02	mg/kg-day	1.00E+00	5.00E-02	mg/kg-day			EPA-NCEA	04/2003	0.03
1,2-Dichloroethene (cis)	Chronic	1.00E-02	mg/kg-day	1.00E+00	1.00E-02	mg/kg-day	Blood	3000	HEAST	1997	0.0005
1,3,5-Trimethylbenzene	Chronic	5.00E-02	mg/kg-day	1.00E+00	5.00E-02	mg/kg-day			EPA-NCEA	04/2003	0.03
Benzene	Chronic	4.00E-03	mg/kg-day	1.00E+00	4.00E-03	mg/kg-day	Blood/Immune	300	IRIS	7/24/03	0.0005
Chloroform	Chronic	1.00E-02	mg/kg-day	1.00E+00	1.00E-02	mg/kg-day	Liver	1000	IRIS	7/24/03	0.0005
Tetrachloroethene	Chronic	1.00E-02	mg/kg-day	1.00E+00	1.00E-02	mg/kg-day	Liver	1000	IRIS	7/24/03	0.03

TABLE 7.29 (RAGS D 5.1)

NON-CANCER TOXICITY DATA -- ORAL/DERMAL

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal RfD (2)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfD: Target Organ (3)	Dates of RfD: Target Organ (MM/DD/YY)	Dermal Absorption Factor for Soil (1)
Toluene	Chronic	2.00E-01	mg/kg-day	1.00E+00	2.00E-01	mg/kg-day	Liver/Kidney	1000	IRIS	7/24/03	0.03
Vinyl Chloride	Chronic	3.00E-03	mg/kg-day	1.00E+00	3.00E-03	mg/kg-day	Liver	30	IRIS	7/24/03	0.0005
Xylene (Total)	Chronic	2.00E-01	mg/kg-day	1.00E+00	2.00E-01	mg/kg-day	Hyperact./Decr. Wt./Mortality	1000	IRIS	7/24/03	0.03

N/A = Not Applicable

Acronyms: CNS = Central Nervous System; GI = Gastrointestinal Tract; and NOAEL = No Observed Adverse Effect Level.

(1) Oral-to-dermal adjustment factors and soil dermal absorption factors from RAGS Part E, draft, EPA, 2001.

(2) Adjusted RfD = oral RfD x GI absorption value in toxicity study upon which the RfD is based. To be used for dermal pathway only; Chemicals with a GI absorption factor greater than 0.50 are not adjusted.

(3) IRIS - Integrated Risk Information System (EPA, 2002)

HEAST - Health Effects Assessment Summary Tables (EPA, 1997)

EPA - NCEA - EPA National Center for Exposure Assessment

TABLE 7.30 (RAGS D 5.2)
NON-CANCER TOXICITY DATA -- INHALATION
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Chronic/ Subchronic	Value Inhalation RfC	Units	Adjusted Inhalation RfD (1)	Units	Primary Target Organ	Combined Uncertainty/Modifying Factors	Sources of RfC:RfD: Target Organ (2)	Dates (MM/DD/YY)
Total 2,3,7,8-TCDD Equiv.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum	Chronic	3.5E-03	mg/m3	1.00E-03	mg/kg-day	CNS	300	EPA-NCEA	04/2003
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium	Chronic	1.0E-04	mg/m3	2.90E-05	mg/kg-day	Lung	300	IRIS	8/05/03
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	Chronic	5.0E-05	mg/m3	1.43E-05	mg/kg-day	CNS	1000	IRIS	7/24/03
Silver	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor-1260	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benz(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-ethylhexyl) Phthalate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	Chronic	3.0E-03	mg/m3	8.60E-04	mg/kg-day	Respiratory	3000	IRIS	7/24/03
Pentachlorophenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	Chronic	2.2E+00	mg/m3	6.30E-01	mg/kg-day	CNS/Liver	300	EPA-NCEA	08/04/99
1,2,4-Trimethylbenzene	Chronic	6.0E-03	mg/m3	1.70E-03	mg/kg-day			EPA-NCEA	04/2003
1,2-Dichloroethene (cis)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3,5-Trimethylbenzene	Chronic	6.0E-03	mg/m3	1.70E-03	mg/kg-day			EPA-NCEA	04/2003
Benzene	Chronic	3.0E-02	mg/m3	8.60E-03	mg/kg-day	Blood/Immune	1000	IRIS	7/24/03
Chloroform	Chronic	4.9E-02	mg/m3	1.40E-02	mg/kg-day			EPA-NCEA	04/2003
Tetrachloroethene	Chronic	4.9E-01	mg/m3	1.40E-01	mg/kg-day	Liver/Kidney	300	EPA-NCEA	06/20/97
Toluene	Chronic	4.0E-01	mg/m3	1.14E-01	mg/kg-day	CNS/Respiratory	300	IRIS	7/24/03
Vinyl Chloride	Chronic	9.8E-02	mg/m3	2.80E-02	mg/kg-day	Liver	30	IRIS	7/24/03
Xylene (Total)	Chronic	9.8E-02	mg/m3	2.80E-02	mg/kg-day	CNS	300	IRIS	7/24/03

N/A = Not Applicable

Acronyms: CNS = Central Nervous System; GI = Gastrointestinal Tract; and NOAEL = No Observed Adverse Effect Level.

(1) Inhalation Adjusted RfD - RfC converted to RfD using the formula in HEAST, 1997.

(2) IRIS - Integrated Risk Information System (EPA, 2002)

HEAST - Health Effects Assessment Summary Tables (EPA, 1997)

EPA - NCEA - EPA National Center for Exposure Assessment

TABLE 7.31 (RAGS D 6.1)
CANCER TOXICITY DATA -- ORAL/DERMAL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence/ Cancer Guideline Description	Source (3)	Date (MM/DD/YY)	Dermal Absorption Factor for Soil (1)
Total 2,3,7,8-TCDD Equiv.	1.50E+05	1.00E+00	1.50E+05	1/(mg/kg-day)	B2	HEAST	1997	0.03
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Arsenic	1.50E+00	1.00E+00	1.50E+00	1/(mg/kg-day)	A	IRIS	7/24/03	0.03
Chromium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Silver	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.01
Aroclor-1260	2.00E+00	1.00E+00	2.00E+00	1/(mg/kg-day)	B2	IRIS	7/24/03	0.14
2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.1
Benz(a)anthracene	7.30E-01	1.00E+00	7.30E-01	1/(mg/kg-day)	B2	EPA-NCEA	04/2003	0.13
Benzo(a)pyrene	7.30E+00	1.00E+00	7.30E+00	1/(mg/kg-day)	B2	IRIS	7/24/03	0.13
Benzo(b)fluoranthene	7.30E-01	1.00E+00	7.30E-01	1/(mg/kg-day)	B2	EPA-NCEA	04/2003	0.13
Benzo(k)fluoranthene	7.30E-02	1.00E+00	7.30E-02	1/(mg/kg-day)	B2	EPA-NCEA	04/2003	0.13
Bis(2-ethylhexyl) Phthalate	1.40E-02	1.00E+00	1.40E-02	1/(mg/kg-day)	B2	IRIS	7/24/03	0.1
Carbazole	2.00E-02	1.00E+00	2.00E-02	1/(mg/kg-day)	B2	HEAST	1997	0.13
Chrysene	7.30E-03	1.00E+00	7.30E-03	1/(mg/kg-day)	B2	EPA-NCEA	04/2003	0.13
Dibenz(a,h)anthracene	7.30E+00	1.00E+00	7.30E+00	1/(mg/kg-day)	B2	EPA-NCEA	04/2003	0.13
Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Indeno(1,2,3-cd)pyrene	7.30E-01	1.00E+00	7.30E-01	1/(mg/kg-day)	B2	EPA-NCEA	4/2003	0.13
Naphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
Pentachlorophenol	1.20E-01	1.00E+00	1.20E-01	1/(mg/kg-day)	B2	IRIS	7/24/03	0.25
Pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.13
1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0005
1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03
1,2-Dichloroethene (cis)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0005
1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03
Benzene	5.50E-02	1.00E+00	5.50E-02	1/(mg/kg-day)	A	IRIS	7/24/03	0.0005
Chloroform	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0005
Tetrachloroethene	5.40E-01	1.00E+00	5.40E-01	1/(mg/kg-day)	B2-C	EPA-Calif.	6/17/2003	0.03
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03
Vinyl Chloride	7.20E-01	1.00E+00	7.20E-01	1/(mg/kg-day)	A	IRIS	7/24/03	0.0005
Xylene (Total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.03

N/A = Not Applicable

Acronyms: CNS = Central Nervous System; GI = Gastrointestinal Tract; and NOAEL = No Observed Adverse Effect Level.

EPA Group:

A - Human carcinogen

TABLE 7.31 (RAGS D 6.1)
CANCER TOXICITY DATA -- ORAL/DERMAL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Oral Cancer Slope Factor	Oral to Dermal Adjustment Factor (1)	Adjusted Dermal Cancer Slope Factor (2)	Units	Weight of Evidence/ Cancer Guideline Description	Source (3)	Date (MM/DD/YY)	Dermal Absorption Factor for Soil (1)

(1) Oral-to-dermal adjustment factors and soil dermal absorption factors from RAGS Part E, draft, EPA, 2001.

(2) Adjusted cancer slope factor (SF) = oral SF / GI absorption value (dermal pathway only); applies only if GI factor > 0.5.

(3) IRIS - Integrated Risk Information System (EPA, 2002)
HEAST - Health Effects Assessment Summary Tables (EPA, 1997)
EPA - NCEA - EPA National Center for Exposure Assessment

B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

Weight of Evidence:
Known/Likely
Cannot be Determined
Not Likely

TABLE 7.32 (RAGS D 6.2)
CANCER TOXICITY DATA -- INHALATION
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor (1)	Units	Weight of Evidence/ Cancer Guideline Description	Source (2)	Date (MM/DD/YY)
Total 2,3,7,8-TCDD Equiv.	4.3E+04	1/(mg/m3)	70/20	1.50E+05	1/(mg/kg-day)	B2	HEAST	03/10/99
Aluminum	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Antimony	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic	4.3E+00	1/(mg/m3)	70/20	1.51E+01	1/(mg/kg-day)	A	IRIS	7/24/03
Chromium	1.2E+01	1/(mg/m3)	70/20	4.10E+01	1/(mg/kg-day)		HEAST	1997
Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aroclor-1260	5.7E-01	1/(mg/m3)	70/20	2.00E+00	1/(mg/kg-day)	B2	IRIS	7/24/03
2-Methylnaphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-Methylphenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benz(a)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	8.9E-01	1/(mg/m3)	70/20	3.10E+00	1/(mg/kg-day)	B2	EPA-NCEA	04/2003
Benzo(b)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-ethylhexyl) Phthalate	4.0E-03	1/(mg/m3)	70/20	1.40E-02	1/(mg/kg-day)	B2	EPA-NCEA	04/2003
Carbazole	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenz(a,h)anthracene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzofuran	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Naphthalene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethene (cis)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3,5-Trimethylbenzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	7.7E-03	1/(mg/m3)	70/20	2.70E-02	1/(mg/kg-day)	A	IRIS	7/24/03
Chloroform	2.3E-02	1/(mg/m3)	70/20	8.10E-02	1/(mg/kg-day)	B2	IRIS	7/24/03
Tetrachloroethene	5.7E-03	1/(mg/m3)	70/20	2.00E-02	1/(mg/kg-day)	B2-C	EPA-Reg.3	04/2003
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	4.3E-03	1/(mg/m3)	70/20	1.50E-02	1/(mg/kg-day)	A	IRIS	7/24/03
Xylene (Total)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Not Applicable

EPA Group:

Acronyms: CNS = Central Nervous System; GI = Gastrointestinal Tract; and NOAEL = No Observed Adverse A - Human carcinogen

TABLE 7.32 (RAGS D 6.2)
CANCER TOXICITY DATA -- INHALATION
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Chemical of Potential Concern	Unit Risk	Units	Adjustment	Inhalation Cancer Slope Factor (1)	Units	Weight of Evidence/ Cancer Guideline Description	Source (2)	Date (MM/DD/YY)

(1) Inhalation Slope Factor (SF) - Inhalation unit risk converted to SF using the formula in HEAST, 1997.

(2) IRIS - Integrated Risk Information System (EPA, 2002)
HEAST - Health Effects Assessment Summary Tables (EPA, 1997)
EPA - NCEA - EPA National Center for Exposure Assessment

B1 - Probable human carcinogen - indicates that limited human data are available
B2 - Probable human carcinogen - indicates sufficient evidence in animals and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E - Evidence of noncarcinogenicity

TABLE 7.33.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CURRENT ADULT INDUSTRIAL WORKER EXPOSURE TO SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Contact with Surface Soil	Benzo(a)pyrene	1.18E-07	--	1.52E-07	2.69E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	1.18E-07	--	1.52E-07	2.69E-07	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil	Benzo(a)pyrene	--	7.05E-11	--	7.05E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	7.05E-11	--	7.05E-11	(Total)		--	--	--	--
						Total Risk Across Surface Soil	2.69E-07					Total Hazard Index Across Surface Soil	--
						Total Risk Across All Media and All Exposure Routes	2.69E-07					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.34.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE ADULT INDUSTRIAL WORKER EXPOSURE TO SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Contact with Surface Soil	Benzo(a)pyrene	7.54E-07	--	9.72E-07	1.73E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	7.54E-07	--	9.72E-07	1.73E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil	Benzo(a)pyrene	--	4.52E-10	--	4.52E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	4.52E-10	--	4.52E-10	(Total)		--	--	--	--
						Total Risk Across Surface Soil	1.73E-06					Total Hazard Index Across Surface Soil	--
						Total Risk Across All Media and All Exposure Routes	1.73E-06					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.35.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Contact with Surface Soil	Benzo(a)pyrene	4.93E-06	--	1.39E-06	6.32E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	4.93E-06	--	1.39E-06	6.32E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil	Benzo(a)pyrene	--	8.86E-10	--	8.86E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	8.86E-10	--	8.86E-10	(Total)		--	--	--	--
							Total Risk Across Surface Soil	6.32E-06					Total Hazard Index Across Surface Soil	--
							Total Risk Across All Media and All Exposure Routes	6.32E-06					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.36.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Contact with Surface Soil	Benzo(a)pyrene	2.03E-06	--	8.94E-07	2.92E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	2.03E-06	--	8.94E-07	2.92E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil	Benzo(a)pyrene	--	1.01E-09	--	1.01E-09	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	1.01E-09	--	1.01E-09	(Total)		--	--	--	--
						Total Risk Across Surface Soil	2.92E-06					Total Hazard Index Across Surface Soil	--
						Total Risk Across All Media and All Exposure Routes	2.92E-06					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.37.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soil	Surface Soil	Contact with Surface Soil	Benzo(a)pyrene	6.95E-06	--	2.29E-06	9.24E-06	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	6.95E-06	--	2.29E-06	9.24E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil	Benzo(a)pyrene	--	1.90E-09	--	1.90E-09	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	1.90E-09	--	1.90E-09	(Total)		--	--	--	--
							Total Risk Across Surface Soil	9.24E-06					Total Hazard Index Across Surface Soil	--
							Total Risk Across All Media and All Exposure Routes	9.24E-06					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.38.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CURRENT ADULT INDUSTRIAL WORKER EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	3.57E-04	--	2.36E-04	5.93E-04
			Silver	--	--	--	--	Silver	Skin	6.08E-04	--	1.51E-03	2.11E-03
			Benzo(a)pyrene	9.29E-08	--	1.20E-07	2.13E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	9.29E-08	--	1.20E-07	2.13E-07	(Total)		9.64E-04	--	1.74E-03	2.71E-03
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	5.57E-11	--	5.57E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	5.57E-11	--	5.57E-11	(Total)		--	--	--	--
							Total Risk Across Soil*	2.13E-07					Total Hazard Index Across Soil*	2.71E-03
							Total Risk Across All Media and All Exposure Routes	2.13E-07					Total Hazard Index Across All Media and All Exposure Routes	2.71E-03

Total Blood HI = 5.93E-04
Total Skin HI = 2.11E-03

TABLE 7.39.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - FUTURE ADULT INDUSTRIAL WORKER EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Industrial Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	2.29E-03	--	1.51E-03	3.80E-03
			Silver	--	--	--	--	Silver	Skin	3.89E-03	--	9.65E-03	1.35E-02
			Benzo(a)pyrene	5.96E-07	--	7.68E-07	1.36E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	5.96E-07	--	7.68E-07	1.36E-06	(Total)		6.18E-03	--	1.12E-02	1.73E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	3.57E-10	--	3.57E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	3.57E-10	--	3.57E-10	(Total)		--	--	--	--
							Total Risk Across Soil*	1.36E-06				Total Hazard Index Across Soil*	1.73E-02
							Total Risk Across All Media and All Exposure Routes	1.36E-06				Total Hazard Index Across All Media and All Exposure Routes	1.73E-02

Total Blood HI = 3.80E-03
Total Skin HI = 1.35E-02

TABLE 7.40.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT CONSTRUCTION WORKER EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	1.27E-02	--	8.78E-04	1.36E-02
			Silver	--	--	--	--	Silver	Skin	2.18E-02	--	5.63E-03	2.74E-02
			Benzo(a)pyrene	1.49E-07	--	1.99E-08	1.68E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	1.49E-07	--	1.99E-08	1.68E-07	(Total)		3.46E-02	--	6.51E-03	4.11E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	2.04E-11	--	2.04E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	2.04E-11	--	2.04E-11	(Total)		--	--	--	--
							Total Risk Across Soil*	1.69E-07				Total Hazard Index Across Soil*	4.11E-02
							Total Risk Across All Media and All Exposure Routes	1.69E-07				Total Hazard Index Across All Media and All Exposure Routes	4.11E-02

Total Blood HI = 1.36E-02
Total Skin HI = 2.74E-02

TABLE 7.41.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	6.23E-02	--	9.04E-03	7.13E-02
			Silver	--	--	--	--	Silver	Skin	1.06E-01	--	5.77E-02	1.64E-01
			Benzo(a)pyrene	3.89E-06	--	1.10E-06	4.99E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	3.89E-06	--	1.10E-06	4.99E-06	(Total)		1.68E-01	--	6.68E-02	2.35E-01
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	7.00E-10	--	7.00E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	7.00E-10	--	7.00E-10	(Total)		--	--	--	--
							Total Risk Across Soil*	4.99E-06					Total Hazard Index Across Soil*	2.35E-01
							Total Risk Across All Media and All Exposure Routes	4.99E-06					Total Hazard Index Across All Media and All Exposure Routes	2.35E-01

Total Blood HI = 7.13E-02
Total Skin HI = 1.64E-01

TABLE 7.42.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	5.96E-03	--	1.35E-03	7.31E-03
			Silver	--	--	--	--	Silver	Skin	1.02E-02	--	8.65E-03	1.88E-02
			Benzo(a)pyrene	1.67E-06	--	7.35E-07	2.40E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	1.67E-06	--	7.35E-07	2.40E-06	(Total)		1.62E-02	--	1.00E-02	2.61E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	8.32E-10	--	8.32E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	8.32E-10	--	8.32E-10	(Total)		--	--	--	--
						Total Risk Across Soil*	2.40E-06					Total Hazard Index Across Soil*	2.61E-02
						Total Risk Across All Media and All Exposure Routes	2.40E-06					Total Hazard Index Across All Media and All Exposure Routes	2.61E-02

Total Blood HI = 7.31E-03
Total Skin HI = 1.88E-02

TABLE 7.43.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	N/A	N/A	--	N/A	--
			Silver	--	--	--	--	Silver	N/A	N/A	--	N/A	--
			Benzo(a)pyrene	5.49E-06	--	1.81E-06	7.30E-06	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	5.49E-06	--	1.81E-06	7.30E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	N/A	--	--
			Silver	--	--	--	--	Silver	N/A	--	N/A	--	--
			Benzo(a)pyrene	--	1.50E-09	--	1.50E-09	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	1.50E-09	--	1.50E-09	(Total)		--	--	--	--
							Total Risk Across Soil*	7.30E-06				Total Hazard Index Across Soil*	--
							Total Risk Across All Media and All Exposure Routes	7.30E-06				Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.44.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT CONSTRUCTION WORKER EXPOSURE TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Contact with Groundwater During Excavation											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	--	--	7.72E-04	7.72E-04
			Arsenic	--	--	8.21E-09	8.21E-09	Arsenic	Skin/Vascular	--	--	1.28E-03	1.28E-03
			Chromium	--	--	--	--	Chromium	NOAEL	--	--	9.94E-02	9.94E-02
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	--	--	4.22E-03	4.22E-03
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	--	1.23E-02	1.23E-02
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		--	--	1.47E-02	1.47E-02
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	--	--	1.23E-03	1.23E-03
			Bis(2-ethylhexyl) Phthalate	--	--	3.56E-09	3.56E-09	Bis(2-ethylhexyl) Phthalate	Liver	--	--	8.90E-04	8.90E-04
			Dibenzofuran	--	--	--	--	Dibenzofuran		--	--	6.44E-03	6.44E-03
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	--	--	7.19E-03	7.19E-03
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	--	6.19E-03	6.19E-03
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	--	1.98E-03	1.98E-03
			Benzene	--	--	3.12E-09	3.12E-09	Benzene	Blood/Immune	--	--	9.93E-04	9.93E-04
			Tetrachloroethene	--	--	3.07E-08	3.07E-08	Tetrachloroethene	Liver	--	--	3.98E-04	3.98E-04
			Toluene	--	--	--	--	Toluene	Liver/Kidney	--	--	3.74E-04	3.74E-04
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	--	--	4.44E-03	4.44E-03
			(Total)	--	--	4.56E-08	4.56E-08	(Total)		--	--	1.63E-01	1.63E-01
	Air	Ambient VOC Inhalation from Groundwater											
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	1.56E-11	--	1.56E-11	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	3.85E-03	--	3.85E-03
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	5.97E-03	--	5.97E-03
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	3.31E-03	--	3.31E-03
			Benzene	--	3.76E-10	--	3.76E-10	Benzene	Blood/Immune	--	1.13E-04	--	1.13E-04
			Tetrachloroethene	--	1.60E-10	--	1.60E-10	Tetrachloroethene	Liver/Kidney	--	4.00E-06	--	4.00E-06
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	7.77E-05	--	7.77E-05
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	1.69E-03	--	1.69E-03
			(Total)	--	5.52E-10	--	5.52E-10	(Total)		--	1.50E-02	--	1.50E-02
						Total Risk Across Groundwater	4.61E-08					Total Hazard Index Across Groundwater	1.78E-01
						Total Risk Across All Media and All Exposure Routes	4.61E-08					Total Hazard Index Across All Media and All Exposure Routes	1.78E-01

Total Blood HI =	5.32E-03
Total CNS HI =	1.61E-02
Total CNS (Developmental) HI =	7.72E-04
Total Decr. Wt. HI =	1.16E-02
Total Decr. Wt. Gain HI =	7.19E-03
Total GI Tract HI =	4.22E-03
Total Hyperact. HI =	4.44E-03
Total Immune HI =	1.11E-03
Total Kidney HI =	3.78E-04
Total Liver HI =	5.88E-03
Total Mortality HI =	4.44E-03
Total Respiratory HI =	5.16E-03
Total Skin HI =	1.28E-03
Total Vascular HI =	1.28E-03

TABLE 7.45.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	7.06E-01	--	1.34E-02	7.19E-01
			Arsenic	1.67E-04	--	8.53E-07	1.68E-04	Arsenic	Skin/Vascular	4.32E+00	--	2.21E-02	4.35E+00
			Chromium	--	--	--	--	Chromium	NOAEL	4.21E+00	--	1.72E+00	5.93E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	1.43E+01	--	7.31E-02	1.44E+01
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	1.67E+00	--	2.13E-01	1.88E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		3.45E-01	--	3.53E-01	6.98E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	3.80E-01	--	2.71E-02	4.07E-01
			Bis(2-ethylhexyl) Phthalate	4.54E-07	--	5.23E-07	9.77E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.89E-02	--	2.18E-02	4.07E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		1.22E-01	--	1.58E-01	2.80E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	3.45E-01	--	1.72E-01	5.16E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.79E-01	--	1.50E-01	3.29E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		7.80E-02	--	4.76E-02	1.26E-01
			Benzene	3.44E-06	--	4.09E-07	3.85E-06	Benzene	Blood/Immune	1.83E-01	--	2.17E-02	2.04E-01
			Tetrachloroethene	1.01E-05	--	4.51E-06	1.47E-05	Tetrachloroethene	Liver	2.19E-02	--	9.75E-03	3.17E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	3.16E-02	--	8.40E-03	4.00E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	2.13E-01	--	1.03E-01	3.16E-01
			(Total)	1.81E-04	--	6.30E-06	1.87E-04	(Total)		2.71E+01	--	3.12E+00	3.02E+01
						Total Risk Across Groundwater	1.87E-04					Total Hazard Index Across Groundwater	3.02E+01
						Total Risk Across All Media and All Exposure Routes	1.87E-04					Total Hazard Index Across All Media and All Exposure Routes	3.02E+01

Total Blood HI =	1.46E+01
Total CNS HI =	3.01E+00
Total CNS (Developmental) HI =	7.19E-01
Total Decr. Wt. HI =	8.32E-01
Total Decr. Wt. Gain HI =	5.16E-01
Total GI Tract HI =	1.44E+01
Total Hyperact. HI =	3.16E-01
Total Immune HI =	2.04E-01
Total Kidney HI =	4.00E-02
Total Liver HI =	1.45E+01
Total Mortality HI =	3.16E-01
Total Respiratory HI =	4.07E-01
Total Skin HI =	4.35E+00
Total Vascular HI =	4.35E+00

TABLE 7.46.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	4.05E-01	--	4.42E-03	4.09E-01
			Arsenic	3.19E-05	--	9.39E-08	3.20E-05	Arsenic	Skin/Vascular	2.48E+00	--	7.30E-03	2.49E+00
			Chromium	--	--	--	--	Chromium	NOAEL	2.41E+00	--	5.69E-01	2.98E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	8.20E+00	--	2.41E-02	8.22E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	9.57E-01	--	7.04E-02	1.03E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.98E-01	--	2.03E-01	4.00E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	2.18E-01	--	1.56E-02	2.33E-01
			Bis(2-ethylhexyl) Phthalate	8.67E-08	--	1.00E-07	1.87E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.08E-02	--	1.25E-02	2.34E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		7.02E-02	--	9.06E-02	1.61E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.98E-01	--	9.85E-02	2.96E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.02E-01	--	8.62E-02	1.89E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		4.47E-02	--	2.73E-02	7.21E-02
			Benzene	6.58E-07	--	7.53E-08	7.33E-07	Benzene	Blood/Immune	1.05E-01	--	1.20E-02	1.17E-01
			Tetrachloroethene	1.94E-06	--	8.64E-07	2.80E-06	Tetrachloroethene	Liver	1.26E-02	--	5.60E-03	1.82E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.81E-02	--	4.70E-03	2.28E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	1.22E-01	--	5.93E-02	1.81E-01
			(Total)	3.46E-05	--	1.13E-06	3.57E-05	(Total)		1.56E+01	--	1.29E+00	1.68E+01
							Total Risk Across Groundwater	3.57E-05					Total Hazard Index Across Groundwater	1.68E+01
							Total Risk Across All Media and All Exposure Routes	3.57E-05					Total Hazard Index Across All Media and All Exposure Routes	1.68E+01

Total Blood HI =	8.34E+00
Total CNS HI =	1.67E+00
Total CNS (Developmental) HI =	4.09E-01
Total Decr. Wt. HI =	4.78E-01
Total Decr. Wt. Gain HI =	2.96E-01
Total GI Tract HI =	8.22E+00
Total Hyperact. HI =	1.81E-01
Total Immune HI =	1.17E-01
Total Kidney HI =	2.28E-02
Total Liver HI =	8.28E+00
Total Mortality HI =	1.81E-01
Total Respiratory HI =	2.33E-01
Total Skin HI =	2.49E+00
Total Vascular HI =	2.49E+00

TABLE 7.47.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	2.25E-01	--	1.88E-03	2.27E-01
			Arsenic	2.13E-04	--	4.79E-07	2.13E-04	Arsenic	Skin/Vascular	1.38E+00	--	3.10E-03	1.38E+00
			Chromium	--	--	--	--	Chromium	NOAEL	1.34E+00	--	2.42E-01	1.58E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	4.56E+00	--	1.03E-02	4.57E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	5.32E-01	--	2.99E-02	5.62E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.10E-01	--	6.04E-02	1.70E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	1.21E-01	--	7.42E-03	1.29E-01
			Bis(2-ethylhexyl) Phthalate	5.79E-07	--	5.87E-07	1.17E-06	Bis(2-ethylhexyl) Phthalate	Liver	6.03E-03	--	6.11E-03	1.21E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		3.90E-02	--	3.58E-02	7.49E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.10E-01	--	2.88E-02	1.39E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		5.70E-02	--	2.44E-02	8.14E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		2.49E-02	--	7.75E-03	3.26E-02
			Benzene	4.39E-06	--	2.25E-07	4.62E-06	Benzene	Blood/Immune	5.82E-02	--	2.98E-03	6.12E-02
			Tetrachloroethene	1.29E-05	--	3.19E-06	1.61E-05	Tetrachloroethene	Liver	6.99E-03	--	1.72E-03	8.71E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.01E-02	--	1.23E-03	1.13E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	6.78E-02	--	1.62E-02	8.41E-02
			(Total)	2.31E-04	--	4.48E-06	2.35E-04	(Total)		8.65E+00	--	4.80E-01	9.13E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	2.56E+00	--	2.56E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	1.75E+00	--	1.75E+00
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	7.65E-01	--	7.65E-01
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--	3.31E-02	--	3.31E-02
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--	4.61E-04	--	4.61E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	2.04E-02	--	2.04E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	5.30E-01	--	5.30E-01
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	5.66E+00	--	5.66E+00
						Total Risk Across Groundwater	2.38E-04					Total Hazard Index Across Groundwater	1.48E+01
						Total Risk Across All Media and All Exposure Routes	2.38E-04					Total Hazard Index Across All Media and All Exposure Routes	1.48E+01

Total Blood HI =	4.66E+00
Total CNS HI =	1.47E+00
Total CNS (Developmental) HI =	2.27E-01
Total Decr. Wt. HI =	2.23E-01
Total Decr. Wt. Gain HI =	1.39E-01
Total GI Tract HI =	4.57E+00
Total Hyperact. HI =	8.41E-02
Total Immune HI =	9.43E-02
Total Kidney HI =	1.18E-02
Total Liver HI =	4.60E+00
Total Lung HI =	--
Total Mortality HI =	8.41E-02
Total Respiratory HI =	2.71E+00
Total Skin HI =	1.38E+00
Total Vascular HI =	1.38E+00

TABLE 7.48.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	1.58E-01	--	1.25E-03	1.59E-01
			Arsenic	5.58E-05	--	1.20E-07	5.60E-05	Arsenic	Skin/Vascular	9.65E-01	--	2.07E-03	9.67E-01
			Chromium	--	--	--	--	Chromium	NOAEL	9.40E-01	--	1.61E-01	1.10E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	3.19E+00	--	6.85E-03	3.20E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	3.72E-01	--	2.00E-02	3.92E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		7.70E-02	--	4.94E-02	1.26E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	8.48E-02	--	6.07E-03	9.08E-02
			Bis(2-ethylhexyl) Phthalate	1.52E-07	--	1.80E-07	3.32E-07	Bis(2-ethylhexyl) Phthalate	Liver	4.22E-03	--	4.99E-03	9.21E-03
			Dibenzofuran	--	--	--	--	Dibenzofuran		2.73E-02	--	2.93E-02	5.66E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	7.70E-02	--	2.36E-02	1.01E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		3.99E-02	--	2.00E-02	5.99E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		1.74E-02	--	6.33E-03	2.37E-02
			Benzene	1.15E-06	--	6.89E-08	1.22E-06	Benzene	Blood/Immune	4.08E-02	--	2.44E-03	4.32E-02
			Tetrachloroethene	3.40E-06	--	9.77E-07	4.37E-06	Tetrachloroethene	Liver	4.89E-03	--	1.41E-03	6.30E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	7.05E-03	--	1.01E-03	8.06E-03
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	4.75E-02	--	1.33E-02	6.07E-02
			(Total)	6.05E-05	--	1.35E-06	6.19E-05	(Total)		6.05E+00	--	3.49E-01	6.40E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	1.31E+00	--	1.31E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	9.00E-01	--	9.00E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	3.93E-01	--	3.93E-01
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	Blood/Immune	--	1.70E-02	--	1.70E-02
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	Liver/Kidney	--	2.37E-04	--	2.37E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	1.05E-02	--	1.05E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	2.72E-01	--	2.72E-01
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	2.91E+00	--	2.91E+00
						Total Risk Across Groundwater	6.25E-05					Total Hazard Index Across Groundwater	9.31E+00
						Total Risk Across All Media and All Exposure Routes	6.25E-05					Total Hazard Index Across All Media and All Exposure Routes	9.31E+00

Total Blood HI =	3.26E+00
Total CNS HI =	9.25E-01
Total CNS (Developmental) HI =	1.59E-01
Total Decr. Wt. HI =	1.61E-01
Total Decr. Wt. Gain HI =	1.01E-01
Total GI Tract HI =	3.20E+00
Total Hyperact. HI =	6.07E-02
Total Immune HI =	6.02E-02
Total Kidney HI =	8.29E-03
Total Liver HI =	3.22E+00
Total Lung HI =	--
Total Mortality HI =	6.07E-02
Total Respiratory HI =	1.42E+00
Total Skin HI =	9.67E-01
Total Vascular HI =	9.67E-01

TABLE 7.49.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	3.80E-04	--	1.33E-06	3.81E-04	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	1.03E-06	--	1.11E-06	2.14E-06	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	7.83E-06	--	6.33E-07	8.47E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	2.31E-05	--	7.70E-06	3.08E-05	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	4.11E-04	--	1.08E-05	4.22E-04	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--		--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--		--	--
			Chromium	--	--	--	--	Chromium	Lung	--		--	--
			Iron	--	--	--	--	Iron	N/A	--		--	--
			Lead	--	--	--	--	Lead	N/A	--		--	--
			Manganese	--	--	--	--	Manganese	CNS	--		--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--		--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--		--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--		--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--		--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--		--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--		--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--		--	--
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--		--	--
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--		--	--
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--		--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--		--	--
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	--	--	--
						Total Risk Across Groundwater	4.25E-04					Total Hazard Index Across Groundwater	--
						Total Risk Across All Media and All Exposure Routes	4.25E-04					Total Hazard Index Across All Media and All Exposure Routes	--

Total Blood HI =	--
Total CNS HI =	--
Total Immune HI =	--
Total Kidney HI =	--
Total Liver HI =	--
Total Lung HI =	--
Total Respiratory HI =	--

TABLE 7.50.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	8.77E-05	--	2.14E-07	8.80E-05	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	2.39E-07	--	2.80E-07	5.19E-07	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	1.81E-06	--	1.44E-07	1.96E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	5.33E-06	--	1.84E-06	7.17E-06	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	9.51E-05	--	2.48E-06	9.76E-05	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	N/A	--	N/A	--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--	N/A	--	--
			Chromium	--	--	--	--	Chromium	N/A	--	N/A	--	--
			Iron	--	--	--	--	Iron	N/A	--	N/A	--	--
			Lead	--	--	--	--	Lead	N/A	--	N/A	--	--
			Manganese	--	--	--	--	Manganese	N/A	--	N/A	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	N/A	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	N/A	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	N/A	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	N/A	--	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	--	N/A	--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	--	N/A	--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	--	N/A	--	--
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	N/A	--	N/A	--	--
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	N/A	--	N/A	--	--
			Toluene	--	--	--	--	Toluene	N/A	--	N/A	--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	--	N/A	--	--
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	--	--	--
						Total Risk Across Groundwater	9.82E-05					Total Hazard Index Across Groundwater	--
						Total Risk Across All Media and All Exposure Routes	9.82E-05					Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.51.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT CONSTRUCTION WORKER EXPOSURE TO GROUNDWATER AND SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Contact with Groundwater During Excavation											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	--	--	7.72E-04	7.72E-04
			Arsenic	--	--	8.21E-09	8.21E-09	Arsenic	Skin/Vascular	--	--	1.28E-03	1.28E-03
			Chromium	--	--	--	--	Chromium	NOAEL	--	--	9.94E-02	9.94E-02
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	--	--	4.22E-03	4.22E-03
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	--	1.23E-02	1.23E-02
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		--	--	1.47E-02	1.47E-02
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	--	--	1.23E-03	1.23E-03
			Bis(2-ethylhexyl) Phthalate	--	--	3.56E-09	3.56E-09	Bis(2-ethylhexyl) Phthalate	Liver	--	--	8.90E-04	8.90E-04
			Dibenzofuran	--	--	--	--	Dibenzofuran		--	--	6.44E-03	6.44E-03
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	--	--	7.19E-03	7.19E-03
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	--	6.19E-03	6.19E-03
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	--	1.98E-03	1.98E-03
			Benzene	--	--	3.12E-09	3.12E-09	Benzene	Blood/Immune	--	--	9.93E-04	9.93E-04
			Tetrachloroethene	--	--	3.07E-08	3.07E-08	Tetrachloroethene	Liver	--	--	3.98E-04	3.98E-04
			Toluene	--	--	--	--	Toluene	Liver/Kidney	--	--	3.74E-04	3.74E-04
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	--	--	4.44E-03	4.44E-03
			(Total)	--	--	4.56E-08	4.56E-08	(Total)		--	--	1.63E-01	1.63E-01
	Air	Ambient VOC Inhalation from Groundwater											
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	1.56E-11	--	1.56E-11	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	3.85E-03	--	3.85E-03
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	5.97E-03	--	5.97E-03
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	3.31E-03	--	3.31E-03
			Benzene	--	3.76E-10	--	3.76E-10	Benzene	Blood/Immune	--	1.13E-04	--	1.13E-04
			Tetrachloroethene	--	1.60E-10	--	1.60E-10	Tetrachloroethene	Liver/Kidney	--	4.00E-06	--	4.00E-06
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	7.77E-05	--	7.77E-05
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	1.69E-03	--	1.69E-03
			(Total)	--	5.52E-10	--	5.52E-10	(Total)		--	1.50E-02	--	1.50E-02
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	1.37E-02	--	9.43E-04	1.46E-02
			Silver	--	--	--	--	Silver	Skin	2.33E-02	--	6.02E-03	2.94E-02
			Benzo(a)pyrene	1.43E-07	--	1.92E-08	1.62E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	1.43E-07	--	1.92E-08	1.62E-07	(Total)		3.70E-02	--	6.97E-03	4.40E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	1.96E-11	--	1.96E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	1.96E-11	--	1.96E-11	(Total)		--	--	--	--

Total Risk Across Groundwater	4.61E-08	Total Hazard Index Across Groundwater	1.78E-01
Total Risk Across Soil*	1.62E-07	Total Hazard Index Across Soil*	4.40E-02
Total Risk Across All Media and All Exposure Routes	2.08E-07	Total Hazard Index Across All Media and All Exposure Routes	2.22E-01

Total Blood HI =	2.00E-02
Total CNS HI =	1.61E-02
Total CNS (Developmental) HI =	7.72E-04
Total Decr. Wt. HI =	1.16E-02
Total Decr. Wt. Gain HI =	7.19E-03
Total GI Tract HI =	4.22E-03
Total Hyperact. HI =	4.44E-03
Total Immune HI =	1.11E-03
Total Kidney HI =	3.78E-04
Total Liver HI =	5.88E-03
Total Mortality HI =	4.44E-03
Total Respiratory HI =	5.16E-03
Total Skin HI =	3.06E-02
Total Vascular HI =	1.28E-03

TABLE 7.52.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	7.06E-01	--	1.34E-02	7.19E-01
			Arsenic	1.67E-04	--	8.53E-07	1.68E-04	Arsenic	Skin/Vascular	4.32E+00	--	2.21E-02	4.35E+00
			Chromium	--	--	--	--	Chromium	NOAEL	4.21E+00	--	1.72E+00	5.93E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	1.43E+01	--	7.31E-02	1.44E+01
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	1.67E+00	--	2.13E-01	1.88E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		3.45E-01	--	3.53E-01	6.98E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	3.80E-01	--	2.71E-02	4.07E-01
			Bis(2-ethylhexyl) Phthalate	4.54E-07	--	5.23E-07	9.77E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.89E-02	--	2.18E-02	4.07E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		1.22E-01	--	1.58E-01	2.80E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	3.45E-01	--	1.72E-01	5.16E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.79E-01	--	1.50E-01	3.29E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		7.80E-02	--	4.76E-02	1.26E-01
			Benzene	3.44E-06	--	4.09E-07	3.85E-06	Benzene	Blood/Immune	1.83E-01	--	2.17E-02	2.04E-01
			Tetrachloroethene	1.01E-05	--	4.51E-06	1.47E-05	Tetrachloroethene	Liver	2.19E-02	--	9.75E-03	3.17E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	3.16E-02	--	8.40E-03	4.00E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	2.13E-01	--	1.03E-01	3.16E-01
			(Total)	1.81E-04	--	6.30E-06	1.87E-04	(Total)		2.71E+01	--	3.12E+00	3.02E+01
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	4.93E-06	--	1.39E-06	6.32E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	4.93E-06	--	1.39E-06	6.32E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	8.86E-10	--	8.86E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	8.86E-10	--	8.86E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	1.87E-04	Total Hazard Index Across Groundwater	3.02E+01
Total Risk Across Surface Soil	6.32E-06	Total Hazard Index Across Surface Soil	--
Total Risk Across All Media and All Exposure Routes	1.93E-04	Total Hazard Index Across All Media and All Exposure Routes	3.02E+01

Total Blood HI =	1.46E+01
Total CNS HI =	3.01E+00
Total CNS (Developmental) HI =	7.19E-01
Total Decr. Wt. HI =	8.32E-01
Total Decr. Wt. Gain HI =	5.16E-01
Total GI Tract HI =	1.44E+01
Total Hyperact. HI =	3.16E-01
Total Immune HI =	2.04E-01
Total Kidney HI =	4.00E-02
Total Liver HI =	1.45E+01
Total Mortality HI =	3.16E-01
Total Respiratory HI =	4.07E-01
Total Skin HI =	4.35E+00
Total Vascular HI =	4.35E+00

TABLE 7.53.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	4.05E-01	--	4.42E-03	4.09E-01
			Arsenic	3.19E-05	--	9.39E-08	3.20E-05	Arsenic	Skin/Vascular	2.48E+00	--	7.30E-03	2.49E+00
			Chromium	--	--	--	--	Chromium	NOAEL	2.41E+00	--	5.69E-01	2.98E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	8.20E+00	--	2.41E-02	8.22E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	9.57E-01	--	7.04E-02	1.03E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.98E-01	--	2.03E-01	4.00E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	2.18E-01	--	1.56E-02	2.33E-01
			Bis(2-ethylhexyl) Phthalate	8.67E-08	--	1.00E-07	1.87E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.08E-02	--	1.25E-02	2.34E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		7.02E-02	--	9.06E-02	1.61E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.98E-01	--	9.85E-02	2.96E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.02E-01	--	8.62E-02	1.89E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		4.47E-02	--	2.73E-02	7.21E-02
			Benzene	6.58E-07	--	7.53E-08	7.33E-07	Benzene	Blood/Immune	1.05E-01	--	1.20E-02	1.17E-01
			Tetrachloroethene	1.94E-06	--	8.64E-07	2.80E-06	Tetrachloroethene	Liver	1.26E-02	--	5.60E-03	1.82E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.81E-02	--	4.70E-03	2.28E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	1.22E-01	--	5.93E-02	1.81E-01
			(Total)	3.46E-05	--	1.13E-06	3.57E-05	(Total)		1.56E+01	--	1.29E+00	1.68E+01
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	5.49E-07	--	6.22E-08	6.11E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	5.49E-07	--	6.22E-08	6.11E-07	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	9.87E-11	--	9.87E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	9.87E-11	--	9.87E-11	(Total)		--	--	--	--

Total Risk Across Groundwater	3.57E-05	Total Hazard Index Across Groundwater	1.68E+01
Total Risk Across Surface Soil	6.11E-07	Total Hazard Index Across Surface Soil	--
Total Risk Across All Media and All Exposure Routes	3.63E-05	Total Hazard Index Across All Media and All Exposure Routes	1.68E+01

Total Blood HI =	8.34E+00
Total CNS HI =	1.67E+00
Total CNS (Developmental) HI =	4.09E-01
Total Decr. Wt. HI =	4.78E-01
Total Decr. Wt. Gain HI =	2.96E-01
Total GI Tract HI =	8.22E+00
Total Hyperact. HI =	1.81E-01
Total Immune HI =	1.17E-01
Total Kidney HI =	2.28E-02
Total Liver HI =	8.28E+00
Total Mortality HI =	1.81E-01
Total Respiratory HI =	2.33E-01
Total Skin HI =	2.49E+00
Total Vascular HI =	2.49E+00

TABLE 7.54.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	7.06E-01	--	1.34E-02	7.19E-01
			Arsenic	1.67E-04	--	8.53E-07	1.68E-04	Arsenic	Skin/Vascular	4.32E+00	--	2.21E-02	4.35E+00
			Chromium	--	--	--	--	Chromium	NOAEL	4.21E+00	--	1.72E+00	5.93E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	1.43E+01	--	7.31E-02	1.44E+01
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	1.67E+00	--	2.13E-01	1.88E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		3.45E-01	--	3.53E-01	6.98E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	3.80E-01	--	2.71E-02	4.07E-01
			Bis(2-ethylhexyl) Phthalate	4.54E-07	--	5.23E-07	9.77E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.89E-02	--	2.18E-02	4.07E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		1.22E-01	--	1.58E-01	2.80E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	3.45E-01	--	1.72E-01	5.16E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.79E-01	--	1.50E-01	3.29E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		7.80E-02	--	4.76E-02	1.26E-01
			Benzene	3.44E-06	--	4.09E-07	3.85E-06	Benzene	Blood/Immune	1.83E-01	--	2.17E-02	2.04E-01
			Tetrachloroethene	1.01E-05	--	4.51E-06	1.47E-05	Tetrachloroethene	Liver	2.19E-02	--	9.75E-03	3.17E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	3.16E-02	--	8.40E-03	4.00E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	2.13E-01	--	1.03E-01	3.16E-01
			(Total)	1.81E-04	--	6.30E-06	1.87E-04	(Total)		2.71E+01	--	3.12E+00	3.02E+01
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	6.23E-02	--	9.04E-03	7.13E-02
			Silver	--	--	--	--	Silver	Skin	1.06E-01	--	5.77E-02	1.64E-01
			Benzo(a)pyrene	3.89E-06	--	1.10E-06	4.99E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	3.89E-06	--	1.10E-06	4.99E-06	(Total)		1.68E-01	--	6.68E-02	2.35E-01
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	7.00E-10	--	7.00E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	7.00E-10	--	7.00E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	1.87E-04	Total Hazard Index Across Groundwater	3.02E+01
Total Risk Across Soil*	4.99E-06	Total Hazard Index Across Soil*	2.35E-01
Total Risk Across All Media and All Exposure Routes	1.92E-04	Total Hazard Index Across All Media and All Exposure Routes	3.05E+01

Total Blood HI =	1.46E+01
Total CNS HI =	3.01E+00
Total CNS (Developmental) HI =	7.19E-01
Total Decr. Wt. HI =	8.32E-01
Total Decr. Wt. Gain HI =	5.16E-01
Total GI Tract HI =	1.44E+01
Total Hyperact. HI =	3.16E-01
Total Immune HI =	2.04E-01
Total Kidney HI =	4.00E-02
Total Liver HI =	1.45E+01
Total Mortality HI =	3.16E-01
Total Respiratory HI =	4.07E-01
Total Skin HI =	4.51E+00
Total Vascular HI =	4.35E+00

TABLE 7.55.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	4.05E-01	--	4.42E-03	4.09E-01
			Arsenic	3.19E-05	--	9.39E-08	3.20E-05	Arsenic	Skin/Vascular	2.48E+00	--	7.30E-03	2.49E+00
			Chromium	--	--	--	--	Chromium	NOAEL	2.41E+00	--	5.69E-01	2.98E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	8.20E+00	--	2.41E-02	8.22E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	9.57E-01	--	7.04E-02	1.03E+00
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.98E-01	--	2.03E-01	4.00E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	2.18E-01	--	1.56E-02	2.33E-01
			Bis(2-ethylhexyl) Phthalate	8.67E-08	--	1.00E-07	1.87E-07	Bis(2-ethylhexyl) Phthalate	Liver	1.08E-02	--	1.25E-02	2.34E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		7.02E-02	--	9.06E-02	1.61E-01
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.98E-01	--	9.85E-02	2.96E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		1.02E-01	--	8.62E-02	1.89E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		4.47E-02	--	2.73E-02	7.21E-02
			Benzene	6.58E-07	--	7.53E-08	7.33E-07	Benzene	Blood/Immune	1.05E-01	--	1.20E-02	1.17E-01
			Tetrachloroethene	1.94E-06	--	8.64E-07	2.80E-06	Tetrachloroethene	Liver	1.26E-02	--	5.60E-03	1.82E-02
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.81E-02	--	4.70E-03	2.28E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	1.22E-01	--	5.93E-02	1.81E-01
			(Total)	3.46E-05	--	1.13E-06	3.57E-05	(Total)		1.56E+01	--	1.29E+00	1.68E+01
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	2.08E-02	--	1.21E-03	2.20E-02
			Silver	--	--	--	--	Silver	Skin	3.54E-02	--	7.72E-03	4.32E-02
			Benzo(a)pyrene	4.34E-07	--	4.91E-08	4.83E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	4.34E-07	--	4.91E-08	4.83E-07	(Total)		5.63E-02	--	8.93E-03	6.52E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	7.80E-11	--	7.80E-11	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	7.80E-11	--	7.80E-11	(Total)		--	--	--	--

Total Risk Across Groundwater	3.57E-05
Total Risk Across Soil*	4.83E-07
Total Risk Across All Media and All Exposure Routes	3.62E-05

Total Hazard Index Across Groundwater	1.68E+01
Total Hazard Index Across Soil*	6.52E-02
Total Hazard Index Across All Media and All Exposure Routes	1.69E+01

Total Blood HI =	8.36E+00
Total CNS HI =	1.67E+00
Total CNS (Developmental) HI =	4.09E-01
Total Decr. Wt. HI =	4.78E-01
Total Decr. Wt. Gain HI =	2.96E-01
Total GI Tract HI =	8.22E+00
Total Hyperact. HI =	1.81E-01
Total Immune HI =	1.17E-01
Total Kidney HI =	2.28E-02
Total Liver HI =	8.28E+00
Total Mortality HI =	1.81E-01
Total Respiratory HI =	2.33E-01
Total Skin HI =	2.53E+00
Total Vascular HI =	2.49E+00

TABLE 7.56.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	2.25E-01	--	1.88E-03	2.27E-01
			Arsenic	2.13E-04	--	4.79E-07	2.13E-04	Arsenic	Skin/Vascular	1.38E+00	--	3.10E-03	1.38E+00
			Chromium	--	--	--	--	Chromium	NOAEL	1.34E+00	--	2.42E-01	1.58E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	4.56E+00	--	1.03E-02	4.57E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	5.32E-01	--	2.99E-02	5.62E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.10E-01	--	6.04E-02	1.70E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	1.21E-01	--	7.42E-03	1.29E-01
			Bis(2-ethylhexyl) Phthalate	5.79E-07	--	5.87E-07	1.17E-06	Bis(2-ethylhexyl) Phthalate	Liver	6.03E-03	--	6.11E-03	1.21E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		3.90E-02	--	3.58E-02	7.49E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.10E-01	--	2.88E-02	1.39E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		5.70E-02	--	2.44E-02	8.14E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		2.49E-02	--	7.75E-03	3.26E-02
			Benzene	4.39E-06	--	2.25E-07	4.62E-06	Benzene	Blood/Immune	5.82E-02	--	2.98E-03	6.12E-02
			Tetrachloroethene	1.29E-05	--	3.19E-06	1.61E-05	Tetrachloroethene	Liver	6.99E-03	--	1.72E-03	8.71E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.01E-02	--	1.23E-03	1.13E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	6.78E-02	--	1.62E-02	8.41E-02
			(Total)	2.31E-04	--	4.48E-06	2.35E-04	(Total)		8.65E+00	--	4.80E-01	9.13E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	2.56E+00	--	2.56E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	1.75E+00	--	1.75E+00
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	7.65E-01	--	7.65E-01
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--	3.31E-02	--	3.31E-02
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--	4.61E-04	--	4.61E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	2.04E-02	--	2.04E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	5.30E-01	--	5.30E-01
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	5.66E+00	--	5.66E+00
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	2.03E-06	--	8.94E-07	2.92E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	2.03E-06	--	8.94E-07	2.92E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	1.01E-09	--	1.01E-09	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	1.01E-09	--	1.01E-09	(Total)		--	--	--	--

Total Risk Across Groundwater	2.38E-04
Total Risk Across Surface Soil	2.92E-06
Total Risk Across All Media and All Exposure Routes	2.41E-04

Total Hazard Index Across Groundwater	1.48E+01
Total Hazard Index Across Surface Soil	--
Total Hazard Index Across All Media and All Exposure Routes	1.48E+01

Total Blood HI =	4.66E+00
Total CNS HI =	1.47E+00
Total CNS (Developmental) HI =	2.27E-01
Total Decr. Wt. HI =	2.23E-01
Total Decr. Wt. Gain HI =	1.39E-01
Total GI Tract HI =	4.57E+00
Total Hyperact. HI =	8.41E-02
Total Immune HI =	9.43E-02
Total Kidney HI =	1.18E-02
Total Liver HI =	4.60E+00
Total Lung HI =	--
Total Mortality HI =	8.41E-02
Total Respiratory HI =	2.71E+00
Total Skin HI =	1.38E+00
Total Vascular HI =	1.38E+00

TABLE 7.57.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	1.58E-01	--	1.25E-03	1.59E-01
			Arsenic	5.58E-05	--	1.20E-07	5.60E-05	Arsenic	Skin/Vascular	9.65E-01	--	2.07E-03	9.67E-01
			Chromium	--	--	--	--	Chromium	NOAEL	9.40E-01	--	1.61E-01	1.10E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	3.19E+00	--	6.85E-03	3.20E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	3.72E-01	--	2.00E-02	3.92E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		7.70E-02	--	4.94E-02	1.26E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	8.48E-02	--	6.07E-03	9.08E-02
			Bis(2-ethylhexyl) Phthalate	1.52E-07	--	1.80E-07	3.32E-07	Bis(2-ethylhexyl) Phthalate	Liver	4.22E-03	--	4.99E-03	9.21E-03
			Dibenzofuran	--	--	--	--	Dibenzofuran		2.73E-02	--	2.93E-02	5.66E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	7.70E-02	--	2.36E-02	1.01E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		3.99E-02	--	2.00E-02	5.99E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		1.74E-02	--	6.33E-03	2.37E-02
			Benzene	1.15E-06	--	6.89E-08	1.22E-06	Benzene	Blood/Immune	4.08E-02	--	2.44E-03	4.32E-02
			Tetrachloroethene	3.40E-06	--	9.77E-07	4.37E-06	Tetrachloroethene	Liver	4.89E-03	--	1.41E-03	6.30E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	7.05E-03	--	1.01E-03	8.06E-03
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	4.75E-02	--	1.33E-02	6.07E-02
			(Total)	6.05E-05	--	1.35E-06	6.19E-05	(Total)		6.05E+00	--	3.49E-01	6.40E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	1.31E+00	--	1.31E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	9.00E-01	--	9.00E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	3.93E-01	--	3.93E-01
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	Blood/Immune	--	1.70E-02	--	1.70E-02
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	Liver/Kidney	--	2.37E-04	--	2.37E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	1.05E-02	--	1.05E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	2.72E-01	--	2.72E-01
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	2.91E+00	--	2.91E+00
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	2.54E-07	--	3.20E-08	2.86E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	2.54E-07	--	3.20E-08	2.86E-07	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	1.65E-10	--	1.65E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	1.65E-10	--	1.65E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	6.25E-05	Total Hazard Index Across Groundwater	9.31E+00
Total Risk Across Surface Soil	2.86E-07	Total Hazard Index Across Surface Soil	--
Total Risk Across All Media and All Exposure Routes	6.28E-05	Total Hazard Index Across All Media and All Exposure Routes	9.31E+00

Total Blood HI =	3.26E+00
Total CNS HI =	9.25E-01
Total CNS (Developmental) HI =	1.59E-01
Total Decr. Wt. HI =	1.61E-01
Total Decr. Wt. Gain HI =	1.01E-01
Total GI Tract HI =	3.20E+00
Total Hyperact. HI =	6.07E-02
Total Immune HI =	6.02E-02
Total Kidney HI =	8.29E-03
Total Liver HI =	3.22E+00
Total Lung HI =	--
Total Mortality HI =	6.07E-02
Total Respiratory HI =	1.42E+00
Total Skin HI =	9.67E-01
Total Vascular HI =	9.67E-01

TABLE 7.58.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	2.25E-01	--	1.88E-03	2.27E-01
			Arsenic	2.13E-04	--	4.79E-07	2.13E-04	Arsenic	Skin/Vascular	1.38E+00	--	3.10E-03	1.38E+00
			Chromium	--	--	--	--	Chromium	NOAEL	1.34E+00	--	2.42E-01	1.58E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	4.56E+00	--	1.03E-02	4.57E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	5.32E-01	--	2.99E-02	5.62E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		1.10E-01	--	6.04E-02	1.70E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	1.21E-01	--	7.42E-03	1.29E-01
			Bis(2-ethylhexyl) Phthalate	5.79E-07	--	5.87E-07	1.17E-06	Bis(2-ethylhexyl) Phthalate	Liver	6.03E-03	--	6.11E-03	1.21E-02
			Dibenzofuran	--	--	--	--	Dibenzofuran		3.90E-02	--	3.58E-02	7.49E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	1.10E-01	--	2.88E-02	1.39E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		5.70E-02	--	2.44E-02	8.14E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		2.49E-02	--	7.75E-03	3.26E-02
			Benzene	4.39E-06	--	2.25E-07	4.62E-06	Benzene	Blood/Immune	5.82E-02	--	2.98E-03	6.12E-02
			Tetrachloroethene	1.29E-05	--	3.19E-06	1.61E-05	Tetrachloroethene	Liver	6.99E-03	--	1.72E-03	8.71E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	1.01E-02	--	1.23E-03	1.13E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	6.78E-02	--	1.62E-02	8.41E-02
			(Total)	2.31E-04	--	4.48E-06	2.35E-04	(Total)		8.65E+00	--	4.80E-01	9.13E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	2.56E+00	--	2.56E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	1.75E+00	--	1.75E+00
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	7.65E-01	--	7.65E-01
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--	3.31E-02	--	3.31E-02
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--	4.61E-04	--	4.61E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	2.04E-02	--	2.04E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	5.30E-01	--	5.30E-01
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	5.66E+00	--	5.66E+00
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	6.40E-03	--	1.45E-03	7.85E-03
			Silver	--	--	--	--	Silver	Skin	1.09E-02	--	9.25E-03	2.02E-02
			Benzo(a)pyrene	1.60E-06	--	7.07E-07	2.31E-06	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	1.60E-06	--	7.07E-07	2.31E-06	(Total)		1.73E-02	--	1.07E-02	2.80E-02
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	8.00E-10	--	8.00E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	8.00E-10	--	8.00E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	2.38E-04	Total Hazard Index Across Groundwater	1.48E+01
Total Risk Across Soil*	2.31E-06	Total Hazard Index Across Soil*	2.80E-02
Total Risk Across All Media and All Exposure Routes	2.41E-04	Total Hazard Index Across All Media and All Exposure Routes	1.48E+01

Total Blood HI =	4.67E+00
Total CNS HI =	1.47E+00
Total CNS (Developmental) HI =	2.27E-01
Total Decr. Wt. HI =	2.23E-01
Total Decr. Wt. Gain HI =	1.39E-01
Total GI Tract HI =	4.57E+00
Total Hyperact. HI =	8.41E-02
Total Immune HI =	9.43E-02
Total Kidney HI =	1.18E-02
Total Liver HI =	4.60E+00
Total Lung HI =	--
Total Mortality HI =	8.41E-02
Total Respiratory HI =	2.71E+00
Total Skin HI =	1.40E+00
Total Vascular HI =	1.38E+00

TABLE 7.59.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	CNS (Developmental)	1.58E-01	--	1.25E-03	1.59E-01
			Arsenic	5.58E-05	--	1.20E-07	5.60E-05	Arsenic	Skin/Vascular	9.65E-01	--	2.07E-03	9.67E-01
			Chromium	--	--	--	--	Chromium	NOAEL	9.40E-01	--	1.61E-01	1.10E+00
			Iron	--	--	--	--	Iron	Liver/Blood/GI Tract	3.19E+00	--	6.85E-03	3.20E+00
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	3.72E-01	--	2.00E-02	3.92E-01
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene		7.70E-02	--	4.94E-02	1.26E-01
			4-Methylphenol	--	--	--	--	4-Methylphenol	CNS/Respiratory	8.48E-02	--	6.07E-03	9.08E-02
			Bis(2-ethylhexyl) Phthalate	1.52E-07	--	1.80E-07	3.32E-07	Bis(2-ethylhexyl) Phthalate	Liver	4.22E-03	--	4.99E-03	9.21E-03
			Dibenzofuran	--	--	--	--	Dibenzofuran		2.73E-02	--	2.93E-02	5.66E-02
			Naphthalene	--	--	--	--	Naphthalene	Decr. Wt. Gain	7.70E-02	--	2.36E-02	1.01E-01
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		3.99E-02	--	2.00E-02	5.99E-02
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		1.74E-02	--	6.33E-03	2.37E-02
			Benzene	1.15E-06	--	6.89E-08	1.22E-06	Benzene	Blood/Immune	4.08E-02	--	2.44E-03	4.32E-02
			Tetrachloroethene	3.40E-06	--	9.77E-07	4.37E-06	Tetrachloroethene	Liver	4.89E-03	--	1.41E-03	6.30E-03
			Toluene	--	--	--	--	Toluene	Liver/Kidney	7.05E-03	--	1.01E-03	8.06E-03
			Xylene (Total)	--	--	--	--	Xylene (Total)	Hyperact./Decr. Wt./Mortality	4.75E-02	--	1.33E-02	6.07E-02
			(Total)	6.05E-05	--	1.35E-06	6.19E-05	(Total)		6.05E+00	--	3.49E-01	6.40E+00
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--	NA	--	--
			Arsenic	--	NA	--	--	Arsenic	N/A	--	--	--	--
			Chromium	--	NA	--	--	Chromium	Lung	--	NA	--	--
			Iron	--	--	--	--	Iron	N/A	--	--	--	--
			Lead	--	--	--	--	Lead	N/A	--	--	--	--
			Manganese	--	--	--	--	Manganese	CNS	--	NA	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	--	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	--	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	--	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	--	--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--	1.31E+00	--	1.31E+00
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--	9.00E-01	--	9.00E-01
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--	3.93E-01	--	3.93E-01
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	Blood/Immune	--	1.70E-02	--	1.70E-02
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	Liver/Kidney	--	2.37E-04	--	2.37E-04
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--	1.05E-02	--	1.05E-02
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--	2.72E-01	--	2.72E-01
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	2.91E+00	--	2.91E+00
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	Blood	2.14E-03	--	1.38E-04	2.28E-03
			Silver	--	--	--	--	Silver	Skin	3.65E-03	--	8.84E-04	4.53E-03
			Benzo(a)pyrene	2.01E-07	--	2.53E-08	2.26E-07	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	2.01E-07	--	2.53E-08	2.26E-07	(Total)		5.79E-03	--	1.02E-03	6.81E-03
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	--	--	--
			Silver	--	--	--	--	Silver	N/A	--	--	--	--
			Benzo(a)pyrene	--	1.30E-10	--	1.30E-10	Benzo(a)pyrene	N/A	--	--	--	--
			(Total)	--	1.30E-10	--	1.30E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	6.25E-05	Total Hazard Index Across Groundwater	9.31E+00
Total Risk Across Soil*	2.26E-07	Total Hazard Index Across Soil*	6.81E-03
Total Risk Across All Media and All Exposure Routes	6.27E-05	Total Hazard Index Across All Media and All Exposure Routes	9.32E+00

Total Blood HI =	3.26E+00
Total CNS HI =	9.25E-01
Total CNS (Developmental) HI =	1.59E-01
Total Decr. Wt. HI =	1.61E-01
Total Decr. Wt. Gain HI =	1.01E-01
Total GI Tract HI =	3.20E+00
Total Hyperact. HI =	6.07E-02
Total Immune HI =	6.02E-02
Total Kidney HI =	8.29E-03
Total Liver HI =	3.22E+00
Total Lung HI =	--
Total Mortality HI =	6.07E-02
Total Respiratory HI =	1.42E+00
Total Skin HI =	9.72E-01
Total Vascular HI =	9.67E-01

TABLE 7.60.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	3.80E-04	--	1.33E-06	3.81E-04	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	1.03E-06	--	1.11E-06	2.14E-06	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	7.83E-06	--	6.33E-07	8.47E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	2.31E-05	--	7.70E-06	3.08E-05	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	4.11E-04	--	1.08E-05	4.22E-04	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--		--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--		--	--
			Chromium	--	--	--	--	Chromium	Lung	--		--	--
			Iron	--	--	--	--	Iron	N/A	--		--	--
			Lead	--	--	--	--	Lead	N/A	--		--	--
			Manganese	--	--	--	--	Manganese	CNS	--		--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--		--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--		--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--		--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--		--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--		--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--		--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--		--	--
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--		--	--
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--		--	--
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--		--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--		--	--
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	--	--	--
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	6.95E-06	--	2.29E-06	9.24E-06	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	6.95E-06	--	2.29E-06	9.24E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	1.90E-09	--	1.90E-09	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	1.90E-09	--	1.90E-09	(Total)		--	--	--	--

Total Risk Across Groundwater	4.25E-04	Total Hazard Index Across Groundwater	--
Total Risk Across Surface Soil	9.24E-06	Total Hazard Index Across Surface Soil	--
Total Risk Across All Media and All Exposure Routes	4.35E-04	Total Hazard Index Across All Media and All Exposure Routes	--

Total Blood HI =	--
Total CNS HI =	--
Total Immune HI =	--
Total Kidney HI =	--
Total Liver HI =	--
Total Lung HI =	--
Total Respiratory HI =	--

TABLE 7.61.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SURFACE SOIL
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	8.77E-05	--	2.14E-07	8.80E-05	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	2.39E-07	--	2.80E-07	5.19E-07	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	1.81E-06	--	1.44E-07	1.96E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	5.33E-06	--	1.84E-06	7.17E-06	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	9.51E-05	--	2.48E-06	9.76E-05	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	N/A	--	N/A	--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--	N/A	--	--
			Chromium	--	--	--	--	Chromium	N/A	--	N/A	--	--
			Iron	--	--	--	--	Iron	N/A	--	N/A	--	--
			Lead	--	--	--	--	Lead	N/A	--	N/A	--	--
			Manganese	--	--	--	--	Manganese	N/A	--	N/A	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	N/A	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	N/A	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	N/A	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	N/A	--	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	--	N/A	--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	--	N/A	--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	--	N/A	--	--
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	N/A	--	N/A	--	--
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	N/A	--	N/A	--	--
			Toluene	--	--	--	--	Toluene	N/A	--	N/A	--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	--	N/A	--	--
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	--	--	--
Surface Soil	Surface Soil	Contact with Surface Soil											
			Benzo(a)pyrene	8.03E-07	--	9.42E-08	8.97E-07	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	8.03E-07	--	9.42E-08	8.97E-07	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Surface Soil											
			Benzo(a)pyrene	--	2.64E-10	--	2.64E-10	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	2.64E-10	--	2.64E-10	(Total)		--	--	--	--

Total Risk Across Groundwater	9.82E-05	Total Hazard Index Across Groundwater	--
Total Risk Across Surface Soil	8.97E-07	Total Hazard Index Across Surface Soil	--
Total Risk Across All Media and All Exposure Routes	9.91E-05	Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 7.62.RME
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	3.80E-04	--	1.33E-06	3.81E-04	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	1.03E-06	--	1.11E-06	2.14E-06	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	7.83E-06	--	6.33E-07	8.47E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	2.31E-05	--	7.70E-06	3.08E-05	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	4.11E-04	--	1.08E-05	4.22E-04	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	CNS	--		--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--		--	--
			Chromium	--	--	--	--	Chromium	Lung	--		--	--
			Iron	--	--	--	--	Iron	N/A	--		--	--
			Lead	--	--	--	--	Lead	N/A	--		--	--
			Manganese	--	--	--	--	Manganese	CNS	--		--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--		--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--		--	--
			Bis(2-ethylhexyl) Phthalate	--	1.16E-09	--	1.16E-09	Bis(2-ethylhexyl) Phthalate	N/A	--		--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--		--	--
			Naphthalene	--	--	--	--	Naphthalene	Respiratory	--		--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene		--		--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene		--		--	--
			Benzene	--	2.63E-06	--	2.63E-06	Benzene	Blood/Immune	--		--	--
			Tetrachloroethene	--	4.43E-07	--	4.43E-07	Tetrachloroethene	Liver/Kidney	--		--	--
			Toluene	--	--	--	--	Toluene	CNS/Respiratory	--		--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	CNS	--		--	--
			(Total)	--	3.08E-06	--	3.08E-06	(Total)		--	--	--	--
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	N/A	N/A	--	N/A	--
			Silver	--	--	--	--	Silver	N/A	N/A	--	N/A	--
			Benzo(a)pyrene	5.49E-06	--	1.81E-06	7.30E-06	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	5.49E-06	--	1.81E-06	7.30E-06	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	N/A	--	--
			Silver	--	--	--	--	Silver	N/A	--	N/A	--	--
			Benzo(a)pyrene	--	1.50E-09	--	1.50E-09	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	1.50E-09	--	1.50E-09	(Total)		--	--	--	--

Total Risk Across Groundwater	4.25E-04	Total Hazard Index Across Groundwater	--
Total Risk Across Soil*	7.30E-06	Total Hazard Index Across Soil*	--
Total Risk Across All Media and All Exposure Routes	4.33E-04	Total Hazard Index Across All Media and All Exposure Routes	--

Total Blood HI =	--
Total CNS HI =	--
Total Immune HI =	--
Total Kidney HI =	--
Total Liver HI =	--
Total Lung HI =	--
Total Respiratory HI =	--

TABLE 7.63.CTE
SUMMARY OF RECEPTOR RISKS AND HAZARDS FOR COPCs - CHILD/ADULT RESIDENT EXPOSURE TO GROUNDWATER AND SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child/Adult

Medium	Exposure Medium	Exposure Point	Chemical	Carcinogenic Risk				Chemical	Non-Carcinogenic Hazard Quotient				
				Ingestion	Inhalation	Dermal	Exposure Routes Total		Primary Target Organ	Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water Contact with Groundwater											
			Aluminum	--	--	--	--	Aluminum	N/A	N/A	--	N/A	--
			Arsenic	8.77E-05	--	2.14E-07	8.80E-05	Arsenic	N/A	N/A	--	N/A	--
			Chromium	--	--	--	--	Chromium	N/A	N/A	--	N/A	--
			Iron	--	--	--	--	Iron	N/A	N/A	--	N/A	--
			Lead	--	--	--	--	Lead	N/A	N/A	--	N/A	--
			Manganese	--	--	--	--	Manganese	N/A	N/A	--	N/A	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	N/A	--	N/A	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	N/A	--	N/A	--
			Bis(2-ethylhexyl) Phthalate	2.39E-07	--	2.80E-07	5.19E-07	Bis(2-ethylhexyl) Phthalate	N/A	N/A	--	N/A	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	N/A	--	N/A	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	N/A	--	N/A	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	N/A	--	N/A	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	N/A	--	N/A	--
			Benzene	1.81E-06	--	1.44E-07	1.96E-06	Benzene	N/A	N/A	--	N/A	--
			Tetrachloroethene	5.33E-06	--	1.84E-06	7.17E-06	Tetrachloroethene	N/A	N/A	--	N/A	--
			Toluene	--	--	--	--	Toluene	N/A	N/A	--	N/A	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	N/A	--	N/A	--
			(Total)	9.51E-05	--	2.48E-06	9.76E-05	(Total)		--	--	--	--
	Air	Inhalation of Groundwater Vapors During Showering											
			Aluminum	--	--	--	--	Aluminum	N/A	--	N/A	--	--
			Arsenic	--	--	--	--	Arsenic	N/A	--	N/A	--	--
			Chromium	--	--	--	--	Chromium	N/A	--	N/A	--	--
			Iron	--	--	--	--	Iron	N/A	--	N/A	--	--
			Lead	--	--	--	--	Lead	N/A	--	N/A	--	--
			Manganese	--	--	--	--	Manganese	N/A	--	N/A	--	--
			2-Methylnaphthalene	--	--	--	--	2-Methylnaphthalene	N/A	--	N/A	--	--
			4-Methylphenol	--	--	--	--	4-Methylphenol	N/A	--	N/A	--	--
			Bis(2-ethylhexyl) Phthalate	--	2.24E-10	--	2.24E-10	Bis(2-ethylhexyl) Phthalate	N/A	--	N/A	--	--
			Dibenzofuran	--	--	--	--	Dibenzofuran	N/A	--	N/A	--	--
			Naphthalene	--	--	--	--	Naphthalene	N/A	--	N/A	--	--
			1,2,4-Trimethylbenzene	--	--	--	--	1,2,4-Trimethylbenzene	N/A	--	N/A	--	--
			1,3,5-Trimethylbenzene	--	--	--	--	1,3,5-Trimethylbenzene	N/A	--	N/A	--	--
			Benzene	--	5.08E-07	--	5.08E-07	Benzene	N/A	--	N/A	--	--
			Tetrachloroethene	--	8.53E-08	--	8.53E-08	Tetrachloroethene	N/A	--	N/A	--	--
			Toluene	--	--	--	--	Toluene	N/A	--	N/A	--	--
			Xylene (Total)	--	--	--	--	Xylene (Total)	N/A	--	N/A	--	--
			(Total)	--	5.93E-07	--	5.93E-07	(Total)		--	--	--	--
Soil*	Soil*	Contact with Soil*											
			Antimony	--	--	--	--	Antimony	N/A	N/A	--	N/A	--
			Silver	--	--	--	--	Silver	N/A	N/A	--	N/A	--
			Benzo(a)pyrene	6.34E-07	--	7.44E-08	7.09E-07	Benzo(a)pyrene	N/A	N/A	--	N/A	--
			(Total)	6.34E-07	--	7.44E-08	7.09E-07	(Total)		--	--	--	--
	Particulates	Particulate Dust Inhalation from Soil*											
			Antimony	--	--	--	--	Antimony	N/A	--	N/A	--	--
			Silver	--	--	--	--	Silver	N/A	--	N/A	--	--
			Benzo(a)pyrene	--	2.08E-10	--	2.08E-10	Benzo(a)pyrene	N/A	--	N/A	--	--
			(Total)	--	2.08E-10	--	2.08E-10	(Total)		--	--	--	--
							Total Risk Across Groundwater	9.82E-05				Total Hazard Index Across Groundwater	--
							Total Risk Across Soil*	7.09E-07				Total Hazard Index Across Soil*	--
							Total Risk Across All Media and All Exposure Routes	9.89E-05				Total Hazard Index Across All Media and All Exposure Routes	--

TABLE 8.1

COMPARISON OF HISTORIC AND NEW SURFACE SOIL DATA AT THE WASTE OIL DUMP
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

	Historical Site-Related Data				New Site-Related Data				Combined Site-Related Data			
Substance	Freq. of Detection[1]	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of all Data[2]	Average of Detections	Freq. of Detection[1]	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of all Data[2]	Average of Detections	Freq. of Detection[1]	Range of Positive Detection Min.	Range of Positive Detection Max.	Mean of all Data[2]	Average of Detections
Volatiles (ug/kg)															
1,2-Dichlorobenzene	0/0					2/39	2 J	3 J	8.83	2.5	2/39	2 J	3 J	8.83	2.5
1,3-Dichlorobenzene	0/0					2/38	3 J	3 J	8.79	3	2/38	3 J	3 J	8.79	3
1,4-Dichlorobenzene	0/0					2/38	3 J	3 J	8.79	3	2/38	3 J	3 J	8.79	3
1,2,4-Trichlorobenzene	0/0					1/38		2 J	8.87	2	1/38		2 J	8.87	2
1,2,4-Trimethylbenzene	0/0					3/39	1 J	5 J	8.82	3.33	3/39	1 J	5 J	8.82	3.33
1,3,5-Trimethylbenzene	0/0					3/39	2 J	4 J	8.82	3.33	3/39	2 J	4 J	8.82	3.33
2-Butanone	0/21					9/39	2 J	100	13.4	29.2	9/60	2 J	100	10.7	29.2
2-Hexanone	0/21					3/39	4 J	20 J	8.93	10	3/60	4 J	20 J	7.75	10
4-Methyl-2-pentanone	0/21					2/39	2 J	3 J	8.83	2.5	2/60	2 J	3 J	7.69	2.5
Acetone	0/21					7/9	130	920	239	296	7/30	130	920	75.6	296
Carbon Disulfide	0/21					3/39	6 J	13 J	8.28	8.33	3/60	6 J	13 J	7.33	8.33
Chlorobenzene	0/21					1/39		1 J	8.91	1	1/60		1 J	7.74	1
Ethylbenzene	0/21					2/39	2 J	2 J	8.81	2	2/60	2 J	2 J	7.67	2
Isopropylbenzene	0/0					2/39	2 J	2 J	8.81	2	2/39	2 J	2 J	8.81	2
M,p-xylene	0/0					2/39	4 J	4 J	8.91	4	2/39	4 J	4 J	8.91	4
Methyl Acetate	0/0					29/39	2 J	210	25.7	31	29/39	2 J	210	25.7	31
O-xylene	0/0					2/39	2 J	2 J	8.81	2	2/39	2 J	2 J	8.81	2
Styrene	0/21					2/39	2 J	2 J	8.81	2	2/60	2 J	2 J	7.67	2
Toluene	0/21					2/39	1 J	2 J	8.74	1.5	2/60	1 J	2 J	7.63	1.5
Xylene (Total)	0/21					2/39	6 J	6 J	9.01	6	2/60	6 J	6 J	7.8	6
Semivolatiles (ug/kg)															
Benz(a)anthracene	0/21					7/39	37 J	210 J	247	105	7/60	37 J	210 J	284	105
Benzaldehyde	0/0					20/35	46 J	1500 J	289	322	20/35	46 J	1500 J	289	322
Benzo(a)pyrene	2/21	910	1300	434	1060	7/39	47 J	550 J	246	208	9/60	47 J	1300	312	396
Benzo(b)fluoranthene	0/21					9/39	43 J	430 J	246	166	9/60	43 J	430 J	283	166
Benzo(g,h,i)perylene	4/21	83 J	590	377	316	2/39	93 J	95 J	260	94	6/60	83 J	590	301	242
Benzo(k)fluoranthene	0/21					4/39	61 J	180 J	256	123	4/60	61 J	180 J	289	123
Bis(2-ethylhexyl) Phthalate	17/20	430	2800	1260	1240	8/39	40 J	350 J	224	113	25/59	40 J	2800	575	882
Chrysene	5/21	78 J	410	370	257	7/39	37 J	270 J	250	123	12/60	37 J	410	292	179
Fluoranthene	0/21					8/39	55 J	280 J	244	151	8/60	55 J	280 J	281	151
Indeno(1,2,3-cd)pyrene	2/21	110 J	140 J	346	130	3/39	81 J	230 J	258	131	5/60	81 J	230 J	289	131
Phenanthrene	0/21					4/39	41 J	77 J	249	57.3	4/60	41 J	77 J	284	57.3
Pyrene	0/21					8/39	66 J	280 J	246	162	8/60	66 J	280 J	283	162
Total PAH (soil)	5/21	161	2320	543	983	10/38	45	2203	403	834	15/59	45	2320	453	884
PCBs (ug/kg)															
Aroclor-1260	0/21					2/39	180 J	220 J	31.8	200	2/60	180 J	220 J	42.9	200

TABLE 8.1

COMPARISON OF HISTORIC AND NEW SURFACE SOIL DATA AT THE WASTE OIL DUMP
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

	Historical Site-Related Data				New Site-Related Data				Combined Site-Related Data			
Substance	Freq. of Detection[1]	Range of Positive Detection Min. - Max.	Mean of all Data[2]	Average of Detections	Freq. of Detection[1]	Range of Positive Detection Min. - Max.	Mean of all Data[2]	Average of Detections	Freq. of Detection[1]	Range of Positive Detection Min. - Max.	Mean of all Data[2]	Average of Detections
Inorganics (mg/kg)												
Aluminum	21/21	2850 - 10600	5850	5850	39/39	917 - 19500	5890	5890	60/60	917 - 19500	5880	5880
Antimony	1/21	0.92	0.358	0.92	1/19	0.36 L	0.107	0.36	2/40	0.36 L - 0.92	0.239	0.64
Arsenic	18/21	0.74 - 2.9	1.2	1.35	39/39	0.82 - 10.7	4.02	4.02	57/60	0.74 - 10.7	3.03	3.18
Barium	21/21	8.3 - 33.3	19.2	19.2	39/39	3.3 - 81.5	22.7	22.7	60/60	3.3 - 81.5	21.5	21.5
Beryllium	7/17	0.11 - 0.2	0.1	0.167	39/39	0.029 - 0.6 L	0.222	0.222	46/56	0.029 - 0.6 L	0.185	0.214
Cadmium	0/21				10/30	0.035 L - 0.24 L	0.0488	0.103	10/51	0.035 L - 0.24 L	0.0484	0.103
Calcium	21/21	41.8 - 891	281	281	36/39	28.2 - 3880	489	529	57/60	28.2 - 3880	416	438
Chromium	21/21	3.4 - 11	6.4	6.4	39/39	1.5 - 20.9 J	7.39	7.39	60/60	1.5 - 20.9 J	7.04	7.04
Cobalt	21/21	0.6 - 3.2	1.42	1.42	39/39	0.14 K - 3.9	1.59	1.59	60/60	0.14 K - 3.9	1.53	1.53
Copper	20/20	1.4 - 8.3 K	3.6	3.6	33/33	0.61 - 21.1 J	4.66	4.66	53/53	0.61 - 21.1 J	4.26	4.26
Iron	21/21	2340 - 10700	4940	4940	39/39	1460 - 14200	5160	5160	60/60	1460 - 14200	5080	5080
Lead	21/21	5.4 - 60.5	18.8	18.8	39/39	1.8 - 71	17.2	17.2	60/60	1.8 - 71	17.7	17.7
Magnesium	21/21	176 - 874	406	406	39/39	74.3 - 4170 J	674	674	60/60	74.3 - 4170 J	580	580
Manganese	21/21	23.1 - 128	58.3	58.3	39/39	2.8 - 312	70.5	70.5	60/60	2.8 - 312	66.2	66.2
Mercury	0/20				25/39	0.02 - 0.4 J	0.0585	0.0858	25/59	0.02 - 0.4 J	0.0478	0.0858
Nickel	21/21	1.1 - 5.7	3.04	3.04	39/39	0.55 - 14.2 J	3.71	3.71	60/60	0.55 - 14.2 J	3.47	3.47
Potassium	21/21	149 - 495	287	287	31/31	102 - 1170 J	369	369	52/52	102 - 1170 J	336	336
Selenium	12/20	0.23 - 0.65	0.302	0.439	3/39	0.71 - 1.5 J	0.35	1	15/59	0.23 - 1.5 J	0.334	0.55
Silver	7/21	0.16 - 0.48	0.137	0.277	21/30	0.13 K - 2.3	0.348	0.471	28/51	0.13 K - 2.3	0.261	0.423
Sodium	21/21	102 - 439	255	255	8/14	20.1 K - 3820 J	452	789	29/35	20.1 K - 3820 J	334	402
Thallium	0/21				1/39	0.21	0.106	0.21	1/60	0.21	0.177	0.21
Vanadium	21/21	5.1 - 19.7	11	11	39/39	2.6 - 70.7 J	14.2	14.2	60/60	2.6 - 70.7 J	13.1	13.1
Zinc	21/21	5.3 - 53.2	16.1	16.1	35/35	1.2 - 48.1 J	15.8	15.8	56/56	1.2 - 53.2	15.9	15.9

Footnotes:
(1) Frequency of detection refers to number of times compound was detected among all samples versus total number of samples. The number of sample results excludes rejected data or blank-qualified data and may va
(2) Mean of all data includes positive detections and non-detected results. Detection limits are divided by two.

Definitions:
J - Estimated value
K - Biased high value
L - Biased low value

TABLE 8.2

OCCURENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR WASTE OIL DUMP - SURFACE SOIL
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Average of Positive Detects	Average of All Samples	Above Background?(1)	95% UCL(2)	Risk-based COPC Screening Level(3)	Ecological Effects Quotient(4)	COPC Flag	Rationale for Contaminant Selection of COPC(5)
Volatiles (ug/kg)												
1,2-Dichlorobenzene	2/39	2 J	3 J	WOD-SS-126	2.5	8.8	NA	3	100	0.03	NO	BSL
1,3-Dichlorobenzene	2/38	3 J	3 J	WOD-SS-126	3	8.8	NA	3	100	0.03	NO	BSL
1,4-Dichlorobenzene	2/38	3 J	3 J	WOD-SS-126	3	8.8	NA	3	100	0.03	NO	BSL
1,2,4-Trichlorobenzene	1/38	2 J	2 J	WOD-SS-126	2	8.9	NA	2	100	0.02	NO	BSL
1,2,4-Trimethylbenzene	3/39	1 J	5 J	WOD-SS-127	3.3	8.8	NA	5	NA	NA	YES	NTX
1,3,5-Trimethylbenzene	3/39	2 J	4 J	WOD-SS-126	3.3	8.8	NA	4	NA	NA	YES	NTX
2-Butanone	9/60	2 J	100	WOD-SS-136	29.2	10.7	N	18.7	NA	NA	YES	NTX
2-Hexanone	3/60	4 J	20 J	WOD-SS-131	10	7.8	NA	9.0	NA	NA	YES	NTX
4-Methyl-2-pentanone	2/60	2 J	3 J	WOD-SS-127	2.5	7.7	NA	3	100000	0.00003	NO	BSL
Acetone	7/30	130	920	WOD-SS-136	296	75.6	N	280	NA	NA	YES	NTX
Carbon Disulfide	3/60	6 J	13 J	WOD-SS-135	8.3	7.3	NA	8.3	NA	NA	YES	NTX
Chlorobenzene	1/60	1 J	1 J	WOD-SS-127	1	7.7	NA	1	100	0.01	NO	BSL
Ethylbenzene	2/60	2 J	2 J	WOD-SS-126	2	7.7	NA	2	100	0.02	NO	BSL
Isopropylbenzene	2/39	2 J	2 J	WOD-SS-126	2	8.8	NA	2	NA	NA	YES	NTX
M,p-xylene	2/39	4 J	4 J	WOD-SS-126	4	8.9	NA	4	100	0.04	NO	BSL
Methyl Acetate	29/39	2 J	210	WOD-SS-136	31	25.7	NA	69.1	NA	NA	YES	NTX
O-xylene	2/39	2 J	2 J	WOD-SS-126	2	8.8	NA	2	100	0.02	NO	BSL
Styrene	2/60	2 J	2 J	WOD-SS-126	2	7.7	NA	2	100	0.02	NO	BSL
Toluene	2/60	1 J	2 J	WOD-SS-120	1.5	7.6	NA	2	100	0.02	NO	BSL
Xylene (Total)	2/60	6 J	6 J	WOD-SS-126	6	7.8	NA	6	100	0.06	NO	BSL
Semivolatiles (ug/kg)												
Benz(a)anthracene	7/60	37 J	210 J	WOD-SS-139	105	284	N	210	100	2.1	YES	ASL/BIO
Benzaldehyde	20/35	46 J	1500 J	WOD-SS-135	322	289	NA	525	NA	NA	YES	NTX
Benzo(a)pyrene	9/60	47 J	1300	3WFF16-SS10	396	312	N	591	100	13.0	YES	ASL/BIO
Benzo(b)fluoranthene	9/60	43 J	430 J	WOD-SS-139	166	283	N	430	100	4.3	YES	ASL/BIO
Benzo(g,h,i)perylene	6/60	83 J	590	3WFF16-SS10-DUP	242	301	NA	572	100	5.9	YES	ASL/BIO
Benzo(k)fluoranthene	4/60	61 J	180 J	WOD-SS-139	123	289	NA	180	100	1.8	YES	ASL/BIO
Bis(2-ethylhexyl) Phthalate	25/59	40 J	2800	3WFF16-SS9	882	575	Y	1160	NA	NA	YES	NTX
Chrysene	12/60	37 J	410	3WFF16-SS10-DUP	179	292	N	410	100	4.1	YES	ASL/BIO
Fluoranthene	8/60	55 J	280 J	WOD-SS-125	151	281	N	280	100	2.8	YES	ASL/BIO
Indeno(1,2,3-cd)pyrene	5/60	81 J	230 J	WOD-SS-139	131	289	NA	230	100	2.3	YES	ASL/BIO
Phenanthrene	4/60	41 J	77 J	WOD-SS-125	57.3	284	NA	77	100	0.77	YES	BIO
Pyrene	8/60	66 J	280 J	WOD-SS-125	162	283	N	280	100	2.8	YES	ASL/BIO
Total PAH (soil)	15/59	45	2320	3WFF16-SS10	884	453	NA	834	100	23.2	YES	ASL/BIO
PCBs (ug/kg)												
Aroclor-1260	2/60	180 J	220 J	WOD-SS-135	200	42.9	NA	74.2	100	2.2	YES	ASL/BIO

TABLE 8.2

OCCURENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR WASTE OIL DUMP - SURFACE SOIL
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Average of Positive Detects	Average of All Samples	Above Background?(1)	95% UCL(2)	Risk-based COPC Screening Level(3)	Ecological Effects Quotient(4)	COPC Flag	Rationale for Contaminant Selection of COPC(5)
Inorganics (mg/kg)												
Aluminum	60/60	917	19500	WOD-SS-137	5880	5880	N	8010	1	19500	YES	ASL
Antimony	2/40	0.36 L	0.92	3WFF16-SS13	0.64	0.24	NA	0.36	0.48	1.92	YES	ASL
Arsenic	57/60	0.74	10.7	WOD-SS-122	3.18	3.0	N	4.64	328	0.03	YES	BIO
Barium	60/60	3.3	81.5	WOD-SS-104	21.5	21.5	N	27.2	440	0.19	NO	BSL
Beryllium	46/56	0.029	0.6 L	WOD-SS-103	0.21	0.19	N	0.27	0.02	30	YES	ASL
Cadmium	10/51	0.035 L	0.24 L	WOD-SS-106	0.10	0.05	N	0.08	2.5	0.10	YES	BIO
Calcium	57/60	28.2	3880	WOD-SS-136	438	416	N	937	NA	NA	NO	NUT
Chromium	60/60	1.5	20.9 J	WOD-SS-135	7.0	7.0	N	8.4	0.0075	2787	YES	ASL/BIO
Cobalt	60/60	0.14 K	3.9	WOD-SS-139	1.5	1.5	N	2.1	100	0.04	NO	BSL
Copper	53/53	0.61	21.1 J	WOD-SS-135	4.3	4.3	N	5.26	15	1.4	YES	ASL/BIO
Iron	60/60	1460	14200	WOD-SS-137	5080	5080	N	6750	12	1183	YES	ASL
Lead	60/60	1.8	71	WOD-SS-137	17.7	17.7	N	17.7	0.01	7100	YES	ASL/BIO
Magnesium	60/60	74.3	4170 J	WOD-SS-135	580	580	N	727	NA	NA	NO	NUT
Manganese	60/60	2.8	312	WOD-SS-127	66.2	66.2	N	91.8	330	0.95	NO	BSL
Mercury	25/59	0.02	0.4 J	WOD-SS-128	0.09	0.05	N	0.083	0.058	6.9	YES	ASL/BIO
Nickel	60/60	0.55	14.2 J	WOD-SS-135	3.5	3.5	N	5.0	2	7.1	YES	ASL/BIO
Potassium	52/52	102	1170 J	WOD-SS-135	336	336	N	383	NA	NA	NO	NUT
Selenium	15/59	0.23	1.5 J	WOD-SS-135	0.55	0.33	N	0.47	1.8	0.83	YES	BIO
Silver	28/51	0.13 K	2.3	WOD-SS-136	0.42	0.26	NA	0.51	0.0098	235	YES	ASL/BIO
Sodium	29/35	20.1 K	3820 J	WOD-SS-135	402	334	Y	1010	NA	NA	NO	NUT
Thallium	1/60	0.21	0.21	WOD-SS-116	0.21	0.18	N	0.21	0.001	210	YES	ASL
Vanadium	60/60	2.6	70.7 J	WOD-SS-135	13.1	13.1	N	19.5	0.5	141	YES	ASL
Zinc	56/56	1.2	53.2	3WFF16-SS14	15.9	15.9	N	22.4	10	5.3	YES	ASL/BIO
Miscellaneous Parameters												
Ph (S.U.)	38/38	4.3 J	7.1 J	WOD-SS-110	6.0	6.0	NA	6.2	NA	NA	NA	NA
TOC By Lloyd Kahn (mg/kg)	38/38	806 J	191700 J	WOD-SS-136	33200	33200	NA	71600	NA	NA	NA	NA

Footnotes:

(1) See Section 5 for a discussion of background comparison.

(2) Maximum value is used if the 95% UCL is greater than the maximum.

(3) Region III BTAG Soil Screening Levels are used if available. The screening level for 1,2-dichlorobenzene was used as asuoorgate for 1,3-dichlorobenzene.

(4) EEQ is calculated by dividing the maximum concentration by the risk based screening value.

(5) The chemicals with a "BIO" rationale are included in the food chain model for terrestrial wildlife but are not COPCs for plants and invertebrates. Table 8.5 presents the chemicals that are retained as COPCs for the food chain modeling.

Definitions:

COPC = Chemical of Potential Concern
J = Estimated value
K = Biased high value
L = Biased low value
NA = Not Applicable/Not available
PCB = Polychlorinated biphenyl
UCL = Upper Confidence Limit

Rationale Codes:

For selection as a COPC

ASL = Above screening level
BIO = Bioaccumulative
NTX = No toxicity info available

For elimination as a COPC

BSL = Below screening level
NUT = Essential nutrient

TABLE 8.3

OCCURENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR WASTE OIL DUMP - SEDIMENT
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Detection Frequency	Minimum Concentration	Maximum Concentration	Location of Maximum Concentration	Average of Positive Detects	Average of All Samples	Above Background?[1]	95% UCL[2]	Risk-based COPC Screening Level[3]	Ecological Effects Quotient[4]	COPC Flag	Rationale for Contaminant Selection of COPC[5]
Volatiles (ug/kg)												
2-Butanone	5/12	21	100	WOD-SS-136	36.7	25.1	NA	42	NA	NA	YES	NTX
2-Hexanone	1/12	20 J	20 J	WOD-SS-131	20	15.6	NA	20	NA	NA	YES	NTX
Acetone	6/6	160	920	WOD-SS-136	323	323	NA	861	NA	NA	YES	NTX
Carbon Disulfide	3/12	6 J	13 J	WOD-SS-135	8.33	13.2	NA	13	NA	NA	YES	NTX
Methyl Acetate	10/12	4 J	210	WOD-SS-136	49.7	44.2	NA	110	NA	NA	YES	NTX
Semivolatiles (ug/kg)												
Benz(a)anthracene	1/12	210 J	210 J	WOD-SS-139	210	360	NA	210	261	0.8	NO	BSL
Benzaldehyde	11/12	79 J	1500 J	WOD-SS-135	485	467	NA	1160	NA	NA	YES	NTX
Benzo(a)pyrene	1/12	360 J	360 J	WOD-SS-139	360	373	NA	360	430	0.8	NO	BSL
Benzo(b)fluoranthene	2/12	180 J	430 J	WOD-SS-139	305	344	NA	417	3200	0.1	NO	BSL
Benzo(k)fluoranthene	1/12	180 J	180 J	WOD-SS-139	180	358	NA	180	27.2 [6]	6.6	YES	ASL
Bis(2-ethylhexyl) Phthalate	4/12	70 J	170 J	WOD-SS-135	106	257	NA	170	1300	0.1	NO	BSL
Chrysene	1/12	270 J	270 J	WOD-SS-139	270	365	NA	270	384	0.7	NO	BSL
Fluoranthene	2/12	160 J	210 J	WOD-SS-139	185	324	NA	210	600	0.4	NO	BSL
HMW PAH	2/12	330	1300	WOD-SS-139	815	429	NA	596	1700 [7]	0.8	NO	BSL
Indeno(1,2,3-cd)pyrene	1/12	230 J	230 J	WOD-SS-139	230	362	NA	230	600	0.4	NO	BSL
LMW PAH	1/12	63	63	WOD-SS-139	63	348	NA	63	552 [7]	0.1	NO	BSL
Phenanthrene	1/12	63 J	63 J	WOD-SS-139	63	348	NA	63	240	0.3	NO	BSL
Pyrene	2/12	170 J	250 J	WOD-SS-139	210	328	NA	250	665	0.4	NO	BSL
Total PAH	2/12	330	1363	WOD-SS-139	847	434	NA	607	4022 [7]	0.3	NO	BSL
PCBs (ug/kg)												
Aroclor-1260	2/12	180 J	220 J	WOD-SS-135	200	59.6	NA	146	22.7	9.7	YES	ASL
Metals (mg/kg)												
Aluminum	12/12	917	19500	WOD-SS-137	8030	8030	N	11100	18000 [6]	1.1	YES	ASL
Arsenic	12/12	0.82	9.8	WOD-SS-139	4.67	4.67	N	6.2	8.2	1.2	YES	ASL
Barium	12/12	3.3	50.4	WOD-SS-139	20.3	20.3	N	50.4	48 [6]	1.1	YES	ASL
Beryllium	12/12	0.029	0.49	WOD-SS-137	0.23	0.23	N	0.311	NA	NA	YES	NTX
Calcium	12/12	111	3880	WOD-SS-136	960	960	N	2430	NA	NA	NO	NUT
Chromium	12/12	1.5	20.9 J	WOD-SS-135	10	10	N	13.8	0.005	4180	YES	ASL
Cobalt	12/12	0.14 K	3.9	WOD-SS-139	1.84	1.84	N	2.51	10 [6]	0.4	NO	BSL
Copper	12/12	0.76	21.1 J	WOD-SS-135	6.51	6.51	N	16.7	34	0.6	NO	BSL
Iron	12/12	1500	14200	WOD-SS-137	6690	6690	N	8800	40000 [8]	0.4	NO	BSL
Lead	12/12	2.4	71	WOD-SS-137	26.1	26.1	N	26.1	46.7	1.5	YES	ASL
Magnesium	12/12	156	4170 J	WOD-SS-135	1260	1260	N	3080	NA	NA	NO	NUT
Manganese	12/12	2.8	214	WOD-SS-139	48	48	N	128	260 [6]	0.8	NO	BSL
Mercury	9/12	0.029	0.4 J	WOD-SS-128	0.14	0.11	N	0.308	0.15	2.7	YES	ASL
Nickel	12/12	0.62	14.2 J	WOD-SS-135	5.45	5.45	N	7.77	20.9	0.7	NO	BSL
Potassium	11/11	178	1170 J	WOD-SS-135	520	520	N	679	NA	NA	NO	NUT
Selenium	2/12	0.78 L	1.5 J	WOD-SS-135	1.14	0.56	NA	0.791	1 [6]	1.5	YES	ASL
Silver	8/10	0.13 K	2.3	WOD-SS-136	0.82	0.675	Y	2.04	1	2.3	YES	ASL
Sodium	6/6	123	3820 J	WOD-SS-135	1040	1040	Y	3070	NA	NA	NO	NUT
Vanadium	12/12	3.1	70.7 J	WOD-SS-135	23.3	23.3	N	52.1	57 [6]	1.2	YES	ASL
Zinc	12/12	1.2	48.1 J	WOD-SS-135	16.9	16.9	N	24.7	150	0.3	NO	BSL
Miscellaneous												
Ph (S.U.)	12/12	4.7	6.8	WOD-SS-134	6.25	6.25	NA	6.58	NA	NA	NA	NA
TOC By Lloyd Kahn (mg/kg)	12/12	8490 J	191700 J	WOD-SS-136	75500	75500	NA	152000	NA	NA	NA	NA

TABLE 8.3

OCCURENCE, DISTRIBUTION, AND SELECTION OF CHEMICALS OF POTENTIAL CONCERN FOR WASTE OIL DUMP - SEDIMENT
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Footnotes:

(1) See Section 5 for a discussion of background comparison.
(2) Maximum value is used if the 95% UCL is greater than the maximum.
(3) Region III BTAG Sediment Screening Levels are used if available.
(4) EEQ is calculated by dividing the maximum concentration by the risk based screening value.
(5) Bioaccumulative chemicals are not retained as COPCs in this table because food chain modeling is not being conducted for piscivorous wildlife.
(6) NOAA SQUIRT Screening Quick Reference Table - Apparent Effects Threshold
(7) Long et al., 1995
(8) NOAA SQUIRT Screening Quick Reference Table - Upper Effects Threshold

Definitions:

COPC = Chemical of Potential Concern
J = Estimated value
K = Biased high value
L = Biased low value
NA = Not Applicable/Not available
PCB = Polychlorinated biphenyl
UCL = Upper Confidence Limit

Rationale Codes:

For selection as a COPC

ASL = Above screening level
NTX = No toxicity info available

For elimination as a COPC

BSL = Below screening level
NUT = Essential nutrient

TABLE 8.4

EXPOSURE PARAMETERS FOR THE TERRESTRIAL WILDLIFE MODEL
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

	Conservative Inputs		Average Inputs	
Species/Exposure Inputs	**Values**	**Units**	**Values**	**Units**
Bobwhite Quail				
Body Weight = BW	1.540E-01	kg	1.751E-01	kg
Food Ingestion Rate = If	4.880E-03	kg/day	4.080E-03	kg/day
Soil Ingestion Rate = Is	4.002E-04	kg/day	3.346E-04	kg/day
Home Range = HR	Assume 100% on site		2.860E+01	acres
Meadow Vole				
Body Weight = BW	1.700E-02	kg	3.580E-02	kg
Food Ingestion Rate = If	3.756E-03	kg/day	3.488E-03	kg/day
Soil Ingestion Rate = Is	9.014E-05	kg/day	8.371E-05	kg/day
Home Range = HR	Assume 100% on site		3.000E-02	acres
American Robin				
Body Weight = BW	7.730E-02	kg	8.040E-02	kg
Food Ingestion Rate = If	1.247E-02	kg/day	1.188E-02	kg/day
Soil Ingestion Rate = Is	3.741E-04	kg/day	1.782E-04	kg/day
Home Range = HR	Assume 100% on site		1.190E+00	acres
Short-Tailed Shrew				
Body Weight = BW	1.500E-02	kg	1.613E-02	kg
Food Ingestion Rate = If	1.600E-03	kg/day	1.430E-03	kg/day
Soil Ingestion Rate = Is	4.800E-05	kg/day	2.145E-05	kg/day
Home Range = HR	Assume 100% on site		9.699E-01	acres

Notes:

The exposure factors were derived as presented in Appendix H.2

The soil ingestion rates were calculated by multiplying the food ingestion rates by the incidental soil ingestion rates in Appendix H.2.

TABLE 8.5

TERRESTRIAL FOOD CHAIN MODEL EEQS - MAXIMUM CONCENTRATIONS AND CONSERVATIVE INPUT PARAMETERS (STEP 2)
SURFACE SOIL RECEPTORS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Insectivores				Herbivores			
	Short-Tailed Shrew $NOAEL_{EEQ}$	Short-Tailed Shrew $LOAEL_{EEQ}$	American Robin $NOAEL_{EEQ}$	American Robin $LOAEL_{EEQ}$	Meadow Vole $NOAEL_{EEQ}$	Meadow Vole $LOAEL_{EEQ}$	Bobwhite Quail $NOAEL_{EEQ}$	Bobwhite Quail $LOAEL_{EEQ}$
Semivolatiles								
Benzo(a)anthracene	9.2E-02	9.2E-03	1.2E-02	1.2E-03	1.2E-02	1.2E-03	3.4E-04	3.4E-05
Benzo(a)pyrene	9.7E-02	9.7E-03	7.3E-02	7.3E-03	1.0E-02	1.0E-03	1.9E-03	1.9E-04
Benzo(b)fluoranthene	8.0E-03	8.0E-04	2.4E-02	2.4E-03	8.3E-04	8.3E-05	6.3E-04	6.3E-05
Benzo(g,h,i)perylene	6.1E-03	6.1E-04	3.3E-02	3.3E-03	5.4E-04	5.4E-05	8.2E-04	8.2E-05
Benzo(k)fluoranthene	1.9E-03	1.9E-04	1.0E-02	1.0E-03	1.6E-04	1.6E-05	2.5E-04	2.5E-05
Chrysene	1.8E-01	1.8E-02	2.3E-02	2.3E-03	2.3E-02	2.3E-03	6.6E-04	6.6E-05
Fluoranthene	1.7E-03	8.4E-04	1.6E-02	1.6E-03	3.9E-04	2.0E-04	6.1E-04	6.1E-05
Indeno(1,2,3-cd)pyrene	2.4E-03	2.4E-04	1.3E-02	1.3E-03	2.1E-04	2.1E-05	3.2E-04	3.2E-05
Phenanthrene	5.7E-03	5.7E-04	4.3E-03	4.3E-04	1.8E-03	1.8E-04	2.0E-04	2.0E-05
Pyrene	2.8E-03	1.7E-03	1.6E-02	1.6E-03	6.5E-04	3.9E-04	6.1E-04	6.1E-05
PCBs								
Aroclor-1260	5.5E+00	5.5E-01	3.1E+00	3.1E-01	1.9E-02	1.9E-03	3.3E-03	3.3E-04
Metals								
Arsenic	5.0E+00	5.0E-01	3.9E-01	1.3E-01	2.1E+01	2.1E+00	1.6E-01	5.4E-02
Cadmium	1.0E+00	1.0E-01	1.1E+00	7.9E-02	1.7E-01	1.7E-02	1.7E-02	1.3E-03
Chromium	2.2E+00	5.4E-01	1.1E+01	2.2E+00	1.5E-01	3.8E-02	1.1E-01	2.2E-02
Copper	3.0E-01	2.3E-01	1.1E-01	8.6E-02	2.6E-01	2.0E-01	1.0E-02	7.7E-03
Lead	1.5E+00	1.5E-01	1.6E+01	1.6E+00	9.6E-01	9.6E-02	1.1E+00	1.1E-01
Mercury	2.8E+01	5.5E+00	2.1E+02	2.1E+01	1.4E+01	2.8E+00	1.0E+01	1.0E+00
Nickel	1.8E-01	9.0E-02	1.4E-01	1.0E-01	1.1E-01	5.6E-02	8.7E-03	6.3E-03
Selenium	1.1E+00	6.6E-01	8.3E-01	4.1E-01	5.0E+00	3.0E+00	3.7E-01	1.8E-01
Silver	1.6E+00	1.6E-01	1.0E+00	1.0E-01	1.3E-02	1.3E-03	1.6E-03	1.6E-04
Zinc	4.6E-01	2.3E-01	7.6E+00	8.5E-01	1.4E-01	6.8E-02	2.2E-01	2.4E-02

Notes:
- Cells are shaded if the EEQ is greater than 1.0; these chemicals are retained as COPCs for risks to terrestrial wildlife

EEQ = Ecological Effects Quotient
NOAEL = No Observed Adverse Effects Level
LOAEL = Lowest Observed Adverse Effects Level
PCB = Polychlorinated Biphenyl

TABLE 8.6

TERRESTRIAL FOOD CHAIN MODEL EEQS - 95% UCL CONCENTRATION AND AVERAGE INPUT PARAMETERS (STEP 3A)
SURFACE SOIL RECEPTORS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Insectivores				Herbivores			
	Short-Tailed Shrew $NOAEL_{EEQ}$	Short-Tailed Shrew $LOAEL_{EEQ}$	American Robin $NOAEL_{EEQ}$	American Robin $LOAEL_{EEQ}$	Meadow Vole $NOAEL_{EEQ}$	Meadow Vole $LOAEL_{EEQ}$	Bobwhite Quail $NOAEL_{EEQ}$	Bobwhite Quail $LOAEL_{EEQ}$
PCBs								
Aroclor-1260	6.46E-01	6.46E-02	4.07E-01	4.07E-02	2.86E-03	2.86E-04	8.15E-04	8.15E-05
Metals								
Silver	3.91E-02	3.91E-03	2.85E-02	2.85E-03	7.93E-04	7.93E-05	2.10E-04	2.10E-05

Notes:
- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ = Ecological Effects Quotient
NOAEL = No Observed Adverse Effects Level
LOAEL = Lowest Observed Adverse Effects Level
PCB = Polychlorinated Biphenyl

TABLE 8.7

TERRESTRIAL FOOD CHAIN MODEL EEQS - AVERAGE CONCENTRATIONS AND AVERAGE INPUT PARAMETERS (STEP 3A)
SURFACE SOIL RECEPTORS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

	Insectivores				Herbivores			
Chemical	Short-Tailed Shrew $NOAEL_{EEQ}$	Short-Tailed Shrew $LOAEL_{EEQ}$	American Robin $NOAEL_{EEQ}$	American Robin $LOAEL_{EEQ}$	Meadow Vole $NOAEL_{EEQ}$	Meadow Vole $LOAEL_{EEQ}$	Bobwhite Quail $NOAEL_{EEQ}$	Bobwhite Quail $LOAEL_{EEQ}$
PCBs								
Aroclor-1260	3.7E-01	3.7E-02	2.4E-01	2.4E-02	1.7E-03	1.7E-04	4.7E-04	4.7E-05
Metals								
Silver	2.0E-02	2.0E-03	1.5E-02	1.5E-03	4.0E-04	4.0E-05	1.1E-04	1.1E-05

Notes:
- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ = Ecological Effects Quotient
NOAEL = No Observed Adverse Effects Level
LOAEL = Lowest Observed Adverse Effects Level
PCB = Polychlorinated Biphenyl

APPENDIX A
ANALYTICAL RESULTS

A1

ANALYTICAL RESULTS

SURFACE SOILS

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-101		WOD-SS-102		WOD-SS-103		WOD-SS-104		WOD-SS-105		WOD-SS-106		WOD-SS-107		WOD-SS-108	
Laboratory ID:	**B0221-02A**		**B0221-04A**		**B0221-06A**		**B0221-08A**		**B0257-04A**		**B0239-02A**		**B0239-04A**		**B0239-06A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	5720		8190		11600		7990		8180		2860		5090		3960	
Antimony	0.28	B	0.19	B	0.49	B	0.6	B	0.16	UL	0.36	L	0.14	UL	0.16	UL
Arsenic	2.1		4.3		6.2		7.6		9.5		1.8	L	1.9	L	1.9	L
Barium	25		33.9		48.3		81.5		51.9		18.3		18.2		20.6	
Beryllium	0.32	L	0.42	L	0.6	L	0.51	L	0.34		0.19		0.24		0.25	
Cadmium	0.044		0.035	U	0.037	U	0.14	K	0.083	L	0.24	L	0.035	L	0.084	L
Calcium	434		133		323		655		398		425		105		344	
Chromium	6		8.6		11.3		11.2		12.2		3.9		5.1		4.8	
Cobalt	1.8	L	2	L	3.2	L	2.4	L	2.7		0.85		1.2		1.3	
Copper	4.9	L	3.2	J	5.1	J	6.1	J	6		4.6		2.5		2.3	
Cyanide	NA		NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	5420		6650		10200		7490		7160		2570		4020		3810	
Lead	11.1		16.8		8.4		24.6		39.4		22.4	L	5	L	7	L
Magnesium	534		526		904		832		754		247		302		370	
Manganese	83.3		66.2		166		161		168		45.4		41.5		73.5	
Mercury	0.038		0.036		0.052		0.081		0.13		0.03		0.018	U	0.02	
Nickel	3.6		4.5		6.7		5.8		5.2		1.7		2.4		2.3	
Potassium	339		229		391		350		331		140	J	181	J	219	J
Selenium	0.53	U	0.45	UL	0.47	UL	0.48	UL	0.49	UL	0.45	UL	0.41	UL	0.47	UL
Silver	0.12	UL	0.1	UL	0.1	UL	0.11	UL	0.38	K	0.44		0.092	U	0.11	U
Sodium	14.8	B	4.2	UL	6.1	B	5.1	B	23.7	B	16.4	B	8.1	B	8.9	B
Thallium	0.18	U	0.15	U	0.16	U	0.16	U	0.16	U	0.15	UL	0.14	UL	0.16	UL
Vanadium	11.6	L	12.2	L	17.7	L	16.7	L	15.1		6.2		7.7		7.4	
Zinc	19.9	L	12.2	L	16	L	29.1	L	25.1		27		8.9		14.7	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	NA		NA		NA		NA		380	U	370	U	360	U	380	U
1,2,4-Trichlorobenzene	380	UJ	360	U	380	UJ	380	U	NA		NA		NA		NA	
1,2-Dichlorobenzene	380	UJ	360	U	380	UJ	380	U	NA		NA		NA		NA	
1,3-Dichlorobenzene	380	UJ	360	U	380	UJ	380	U	NA		NA		NA		NA	
1,4-Dichlorobenzene	380	UJ	360	U	380	UJ	380	U	NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
2,4,5-Trichlorophenol	770	U	730	U	760	U	770	U	970	U	930	U	900	U	970	U
2,4,6-Trichlorophenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
2,4-Dichlorophenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
2,4-Dimethylphenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
2,4-Dinitrophenol	770	U	730	U	760	U	770	U	970	U	930	U	900	U	970	U
2,4-Dinitrotoluene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
2,6-Dinitrotoluene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
2-Chloronaphthalene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
2-Chlorophenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
2-Methylnaphthalene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
2-Methylphenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
2-Nitroaniline	770	UJ	730	U	760	UJ	770	U	970	U	930	U	900	U	970	U
2-Nitrophenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
3,3'-Dichlorobenzidine	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	UR
3-Nitroaniline	770	UJ	730	U	760	UJ	770	U	970	U	930	U	900	U	970	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-101		WOD-SS-102		WOD-SS-103		WOD-SS-104		WOD-SS-105		WOD-SS-106		WOD-SS-107		WOD-SS-108	
Laboratory ID:	B0221-02A		B0221-04A		B0221-06A		B0221-08A		B0257-04A		B0239-02A		B0239-04A		B0239-06A	
Sample Date:	02/06/03		02/06/03		02/06/03		02/06/03		02/11/03		02/10/03		02/10/03		02/10/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:																
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	770	U	730	U	760	U	770	U	970	U	930	U	900	U	970	U
4-Bromophenyl Phenyl Ether	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
4-Chloro-3-methylphenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
4-Chloroaniline	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
4-Chlorophenyl Phenyl Ether	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
4-Methylphenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U
4-Nitroaniline	770	UJ	730	U	760	UJ	770	U	970	U	930	U	900	U	970	U
4-Nitrophenol	770	U	730	U	760	U	770	U	970	U	930	U	900	U	970	U
Acenaphthene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Acenaphthylene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Acetophenone	NA		NA		NA		NA		380	U	370	U	360	U	380	U
Anthracene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Atrazine	NA		NA		NA		NA		380	U	370	U	360	U	380	U
Benz(a)anthracene	140	J	360	U	380	UJ	380	U	51	J	370	U	43	J	390	U
Benzaldehyde	NA		NA		NA		NA		380	U	270	J	360	U	380	U
Benzo(a)pyrene	150	J	360	U	380	UJ	380	UJ	80	J	370	U	47	J	390	U
Benzo(b)fluoranthene	190	J	360	U	380	UJ	380	UJ	150	J	370	U	59	J	390	U
Benzo(g,h,i)perylene	95	J	360	U	380	UJ	380	UJ	380	UJ	370	U	360	U	390	U
Benzo(k)fluoranthene	100	J	360	U	380	UJ	380	UJ	61	J	370	U	360	U	390	U
Bis(2-chloroethoxy)methane	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Bis(2-chloroethyl)ether	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Bis(2-ethylhexyl)phthalate	380	UJ	360	U	380	UJ	350	J	43	J	370	U	360	U	380	U
Butylbenzylphthalate	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Caprolactam	NA		NA		NA		NA		380	U	370	U	360	U	380	U
Carbazole	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Chrysene	150	J	360	U	380	UJ	380	U	79	J	370	U	41	J	390	U
Di-n-butylphthalate	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Di-n-octylphthalate	380	UJ	360	U	380	UJ	380	UJ	380	UJ	370	U	360	U	380	U
Dibenz(a,h)anthracene	380	UJ	360	U	380	UJ	380	UJ	380	UJ	370	U	360	U	390	U
Dibenzofuran	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Diethylphthalate	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Dimethylphthalate	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Fluoranthene	260	J	360	U	380	UJ	380	U	55	J	370	U	65	J	390	U
Fluorene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Hexachlorobenzene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Hexachlorobutadiene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Hexachlorocyclopentadiene	380	UJ	360	U	380	UJ	380	UJ	380	U	370	U	360	U	380	U
Hexachloroethane	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	82	J	360	U	380	UJ	380	UJ	380	UJ	370	U	360	U	390	U
Isophorone	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
N-Nitrosodiphenylamine (1)	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Naphthalene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Nitrobenzene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	380	U
Pentachlorophenol	770	U	730	U	760	U	770	U	970	U	930	U	900	U	970	U
Phenanthrene	380	UJ	360	U	380	UJ	380	U	380	U	370	U	360	U	390	U
Phenol	380	U	360	U	380	U	380	U	380	U	370	U	360	U	380	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-101**		**WOD-SS-102**		**WOD-SS-103**		**WOD-SS-104**		**WOD-SS-105**		**WOD-SS-106**		**WOD-SS-107**		**WOD-SS-108**	
Laboratory ID:	**B0221-02A**		**B0221-04A**		**B0221-06A**		**B0221-08A**		**B0257-04A**		**B0239-02A**		**B0239-04A**		**B0239-06A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	260	J	360	U	380	UJ	380	U	66	J	370	U	86	J	390	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	1427		360	U	380	U	380	U	542		370	U	341		390	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,1,2,2-Tetrachloroethane	12	U	13	U	11	UJ	10	UJ	10	U	10	UJ	12	U	11	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,1,2-Trichloroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,1-Dichloroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,1-Dichloroethene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,2,4-Trichlorobenzene	12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ	12	U	11	UJ
1,2,4-Trimethylbenzene	12	U	13	U	1	J	10	UJ	10	U	10	UJ	12	U	11	UJ
1,2-Dibromo-3-chloropropane	12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ	12	U	11	UJ
1,2-Dibromoethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,2-Dichlorobenzene	12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ	12	U	11	UJ
1,2-Dichloroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,2-Dichloroethene (cis)	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,2-Dichloropropane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
1,3,5-Trimethylbenzene	12	U	13	U	2	J	10	UJ	10	U	10	UJ	12	U	11	UJ
1,3-Dichlorobenzene	12	U	13	U	11	UJ	10	UJ	10	U	10	UJ	12	U	11	UJ
1,4-Dichlorobenzene	12	U	13	U	11	UJ	10	UJ	10	UJ	10	UJ	12	U	11	UJ
2-Butanone	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	2	J
2-Hexanone	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
4-Methyl-2-pentanone	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Acetone	53	B	21	B	44	B	30	B	16	B	10	U	18	B	25	B
Benzene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Bromodichloromethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Bromoform	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Bromomethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Carbon Disulfide	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Carbon Tetrachloride	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Chlorobenzene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Chloroethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Chloroform	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Chloromethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
cis-1,3-Dichloropropene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Cyclohexane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Dibromochloromethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Dichlorodifluoromethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Ethylbenzene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Isopropylbenzene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
m,p-xylene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Methyl Acetate	2	J	3	J	6	J	11		10	U	10	U	12	U	4	J
Methyl Tert-butyl Ether (mtbe)	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Methylcyclohexane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Methylene Chloride	8	B	5	B	4	B	4	B	5	B	2	B	2	B	2	B

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-101**		**WOD-SS-102**		**WOD-SS-103**		**WOD-SS-104**		**WOD-SS-105**		**WOD-SS-106**		**WOD-SS-107**		**WOD-SS-108**	
Laboratory ID:	**B0221-02A**		**B0221-04A**		**B0221-06A**		**B0221-08A**		**B0257-04A**		**B0239-02A**		**B0239-04A**		**B0239-06A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Styrene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Tetrachloroethene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Toluene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
trans-1,3-Dichloropropene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Trichloroethene	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Trichlorofluoromethane	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Vinyl Chloride	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
Xylene (Total)	12	U	13	U	11	UJ	10	U	10	U	10	U	12	U	11	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA		NA	
Total Ddt Residues	NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1221	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1232	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1242	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1248	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1254	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
Aroclor-1260	38	U	36	U	38	U	39	U	39	U	37	U	36	U	38	U
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.3		5.5		5.9		6.2		6.3	J	7		6.2		6.1	
TOC By Lloyd Kahn (mg/kg)	12500	J	4670	J	14300	J	26000	J	7980	J	7300	J	8250	J	3920	J

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-109		WOD-SS-109-DUP		WOD-SS-110		WOD-SS-111		WOD-SS-112		WOD-SS-113		WOD-SS-114		WOD-SS-115	
Laboratory ID:	B0257-02A		B0257-07A		B0257-09A		B0257-10A		B0257-12A		B0257-14A		B0257-16A		B0258-02A	
Sample Date:	02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/12/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:	WOD-SS-109-DUP		WOD-SS-109													
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	1640		1500		1390		959		1850		2010		2890		1320	
Antimony	0.14	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.17	B
Arsenic	1.4		1.3		1.4		1.1		1.2		1.5		2.9		1.2	
Barium	7.2		6.4		5.2		5.4		8.1		8		6.9		4	
Beryllium	0.064		0.054		0.053		0.051		0.058		0.073		0.065		0.094	
Cadmium	0.032	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.037	U	0.042	
Calcium	137		127		113		45.4		64.2		12.8	U	12.6	U	41.8	
Chromium	2.8		2.3		2.1		1.5		2.4		2.8		3.1		2.3	
Cobalt	0.48		0.42		0.55		0.61		0.77		0.81		0.82		0.32	
Copper	1		0.86		0.61		1.3		1.9		0.96		1.7		2.8	B
Cyanide	NA		NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	2060		1670		1630		1580		2090		2640		2610		1590	
Lead	3.3		3.2		2		2.5		5.2		1.8		6.3		4.7	
Magnesium	148		113		117		74.3		118		99.2		142		112	
Manganese	25.8		23.4		18.5		25		22		25		24.5		13.8	
Mercury	0.019	U	0.017	U	0.016	U	0.015	U	0.021		0.014	U	0.018	U	0.016	U
Nickel	0.81		0.66		0.56		0.55		0.77		0.6		1.6		0.71	
Potassium	168		124	B	105	B	81.5	B	106	B	116	B	101	B	109	
Selenium	0.42	U	0.48	U	0.47	U	0.47	U	0.47	U	0.48	U	0.47	U	0.41	U
Silver	0.19		0.21		0.19		0.15		0.36		0.22		0.29		0.19	
Sodium	13.2	B	6.9	B	7.8	B	4.5	B	4.9	B	4.4	U	4	U	8.2	B
Thallium	0.14	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.16	U	0.14	U
Vanadium	4.6		4.3		3.5		2.6		5.4		4.4		7		4.1	
Zinc	4.6		3.6		2.7		6.6		5.7		2.9		5.2		4.6	B
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1-Biphenyl	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2,4,5-Trichlorophenol	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
2,4,6-Trichlorophenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2,4-Dichlorophenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2,4-Dimethylphenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2,4-Dinitrophenol	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
2,4-Dinitrotoluene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2,6-Dinitrotoluene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2-Chloronaphthalene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2-Chlorophenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2-Methylnaphthalene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2-Methylphenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
2-Nitroaniline	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
2-Nitrophenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
3,3'-Dichlorobenzidine	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
3-Nitroaniline	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-109		WOD-SS-109-DUP		WOD-SS-110		WOD-SS-111		WOD-SS-112		WOD-SS-113		WOD-SS-114		WOD-SS-115	
Laboratory ID:	B0257-02A		B0257-07A		B0257-09A		B0257-10A		B0257-12A		B0257-14A		B0257-16A		B0258-02A	
Sample Date:	02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/11/03		02/12/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:	WOD-SS-109-DUP		WOD-SS-109													
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
4-Bromophenyl Phenyl Ether	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
4-Chloro-3-methylphenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
4-Chloroaniline	360	UJ	370	UJ	360	UJ	350	UJ	370	UJ	350	U	360	UJ	360	U
4-Chlorophenyl Phenyl Ether	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
4-Methylphenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
4-Nitroaniline	910	U	920	U	900	U	890	U	940	U	880	UJ	900	U	900	U
4-Nitrophenol	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
Acenaphthene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Acenaphthylene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Acetophenone	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Anthracene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Atrazine	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Benz(a)anthracene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	37	J
Benzaldehyde	360	U	68	J	360	U	350	U	56	J	350	UJ	46	J	360	UJ
Benzo(a)pyrene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Benzo(b)fluoranthene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	43	J
Benzo(g,h,i)perylene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Benzo(k)fluoranthene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Bis(2-chloroethoxy)methane	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Bis(2-chloroethyl)ether	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Bis(2-ethylhexyl)phthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Butylbenzylphthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Caprolactam	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Carbazole	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Chrysene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	37	J
Di-n-butylphthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Di-n-octylphthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Dibenz(a,h)anthracene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Dibenzofuran	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Diethylphthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Dimethylphthalate	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Fluoranthene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	77	J
Fluorene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Hexachlorobenzene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Hexachlorobutadiene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Hexachlorocyclopentadiene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Hexachloroethane	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Isophorone	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
N-Nitrosodiphenylamine (1)	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Naphthalene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Nitrobenzene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U
Pentachlorophenol	910	U	920	U	900	U	890	U	940	U	880	U	900	U	900	U
Phenanthrene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	41	J
Phenol	360	U	370	U	360	U	350	U	370	U	350	U	360	U	360	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-109**		**WOD-SS-109-DUP**		**WOD-SS-110**		**WOD-SS-111**		**WOD-SS-112**		**WOD-SS-113**		**WOD-SS-114**		**WOD-SS-115**	
Laboratory ID:	**B0257-02A**		**B0257-07A**		**B0257-09A**		**B0257-10A**		**B0257-12A**		**B0257-14A**		**B0257-16A**		**B0258-02A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**WOD-SS-109-DUP**		**WOD-SS-109**													
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	360	U	370	U	360	U	350	U	370	U	350	U	360	U	71	J
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	360	U	370	U	360	U	350	U	370	U	350	U	360	U	306	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,1,2,2-Tetrachloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,1,2-Trichloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,1-Dichloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,1-Dichloroethene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2,4-Trichlorobenzene	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
1,2,4-Trimethylbenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dibromo-3-chloropropane	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
1,2-Dibromoethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dichlorobenzene	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
1,2-Dichloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dichloroethene (cis)	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,2-Dichloropropane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,3,5-Trimethylbenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,3-Dichlorobenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
1,4-Dichlorobenzene	10	U	11	UJ	12	UJ	11	UJ	10	UJ	12	U	10	UJ	12	U
2-Butanone	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
2-Hexanone	3	B	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
4-Methyl-2-pentanone	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Acetone	25	B	41	B	66	B	47	B	20	B	39	B	15	B	15	B
Benzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Bromodichloromethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Bromoform	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Bromomethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Carbon Disulfide	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Carbon Tetrachloride	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Chlorobenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Chloroethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Chloroform	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Chloromethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
cis-1,3-Dichloropropene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Cyclohexane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Dibromochloromethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Dichlorodifluoromethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Ethylbenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Isopropylbenzene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
m,p-xylene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Methyl Acetate	10	U	4	J	5	J	3	J	3	J	12	U	10	U	12	U
Methyl Tert-butyl Ether (mtbe)	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Methylcyclohexane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Methylene Chloride	4	B	4	B	4	B	5	B	4	B	8	B	4	B	5	B

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-109**		**WOD-SS-109-DUP**		**WOD-SS-110**		**WOD-SS-111**		**WOD-SS-112**		**WOD-SS-113**		**WOD-SS-114**		**WOD-SS-115**	
Laboratory ID:	**B0257-02A**		**B0257-07A**		**B0257-09A**		**B0257-10A**		**B0257-12A**		**B0257-14A**		**B0257-16A**		**B0258-02A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**WOD-SS-109-DUP**		**WOD-SS-109**													
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Styrene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Tetrachloroethene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Toluene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
trans-1,3-Dichloropropene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Trichloroethene	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Trichlorofluoromethane	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Vinyl Chloride	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
Xylene (Total)	10	U	11	UJ	12	UJ	11	UJ	10	U	12	U	10	U	12	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA		NA	
Total Ddt Residues	NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1221	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1232	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1242	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1248	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1254	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
Aroclor-1260	36	U	37	U	37	U	36	U	38	U	36	U	36	U	36	U
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.1	J	6.3	J	7.1	J	6.6	J	5.7	J	5.6	J	5.6	J	5.6	J
TOC By Lloyd Kahn (mg/kg)	3200	J	7800	J	1670	J	806	J	3690	J	984	J	4130	J	NA	

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-116		WOD-SS-117		WOD-SS-118		WOD-SS-119		WOD-SS-120		WOD-SS-121		WOD-SS-122		WOD-SS-123	
Laboratory ID:	**B0258-04A**		**B0258-06A**		**B0258-08A**		**B0258-10A**		**B0258-14A**		**B0262-02A**		**B0262-04A**		**B0262-07A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**		**02/13/03**		**02/13/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3940		2170		1950		8300		1710		6680		6900		7420	
Antimony	0.43	B	0.5	B	0.18	B	0.66	B	0.26	B	0.15	UL	0.15	UL	0.14	UL
Arsenic	2.5		1.9		1.6		8.5	L	1.4		1.9	L	10.7		3.1	L
Barium	13.1		4.5		7.4		38.7		6.6		14.4		24.4		26.6	
Beryllium	0.2		0.13		0.15		0.48		0.12		0.16		0.27		0.21	
Cadmium	0.059		0.047	U	0.031	U	0.23	K	0.039	U	0.034	UL	0.035	UL	0.033	UL
Calcium	61.3		28.2		70.4		574		62.5		11.8	U	73		150	
Chromium	4.6		2.9		2.8		11.5		2.6		6		9.6		8.5	
Cobalt	0.57		0.25		0.45		2.6		0.22		1.5		2		2.3	
Copper	3	B	1.6	B	0.97	B	6.5	B	2.2	B	2.7		4		3.8	
Cyanide	NA		NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	3070		1830		2190		7400		1460		5520	J	5480	J	6840	J
Lead	13.3		6.9		2.7		33.2		7.1		5.6		10.7		26.9	
Magnesium	218		119		139		732		93.2		330		501		608	
Manganese	14.8		6.7		19.6		140		7.3		41.8	J	94.1	J	81.4	J
Mercury	0.032		0.022	U	0.016	U	0.063		0.032		0.018	U	0.12		0.016	U
Nickel	2.2		1.1		0.58		5.4		1.3		3		3.6		4.3	
Potassium	126		83.1	B	102		279		114	B	200		277		316	
Selenium	0.5	U	0.6	U	0.4	U	0.52	UL	0.5	U	0.44	UL	0.46	UL	0.43	UL
Silver	0.29		0.13		0.088	U	0.28	L	0.22		0.46	B	0.34	B	0.36	B
Sodium	5.3	B	5.5	U	3.7	U	15.6	B	4.6	U	12.9	B	12	B	14.3	B
Thallium	0.21		0.2	U	0.13	U	0.17	U	0.17	U	0.15	U	0.15	U	0.14	U
Vanadium	13.3		8.2		4.7		16.7		8.4		10.1		11.2		15.7	
Zinc	8.4		5	B	2.8	B	25.1		4.9	B	8.5		13.8		17.3	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2,4,5-Trichlorophenol	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
2,4,6-Trichlorophenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2,4-Dichlorophenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2,4-Dimethylphenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2,4-Dinitrophenol	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
2,4-Dinitrotoluene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2,6-Dinitrotoluene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2-Chloronaphthalene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2-Chlorophenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2-Methylnaphthalene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2-Methylphenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
2-Nitroaniline	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
2-Nitrophenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
3,3'-Dichlorobenzidine	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
3-Nitroaniline	950	UJ	1200	UJ	890	UJ	980	UJ	1100	UJ	900	U	970	U	4800	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-116		WOD-SS-117		WOD-SS-118		WOD-SS-119		WOD-SS-120		WOD-SS-121		WOD-SS-122		WOD-SS-123	
Laboratory ID:	B0258-04A		B0258-06A		B0258-08A		B0258-10A		B0258-14A		B0262-02A		B0262-04A		B0262-07A	
Sample Date:	02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/13/03		02/13/03		02/13/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:																
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
4-Bromophenyl Phenyl Ether	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
4-Chloro-3-methylphenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
4-Chloroaniline	380	U	490	U	360	U	390	U	430	U	360	UJ	380	UJ	1900	U
4-Chlorophenyl Phenyl Ether	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
4-Methylphenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
4-Nitroaniline	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
4-Nitrophenol	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
Acenaphthene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Acenaphthylene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Acetophenone	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Anthracene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Atrazine	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Benz(a)anthracene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Benzaldehyde	58	J	87	J	360	UJ	390	UJ	430	UJ	360	U	380	U	1900	U
Benzo(a)pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	550	J
Benzo(b)fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	45	J	1900	UJ
Benzo(g,h,i)perylene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ
Benzo(k)fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ
Bis(2-chloroethoxy)methane	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Bis(2-chloroethyl)ether	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Bis(2-ethylhexyl)phthalate	40	J	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Butylbenzylphthalate	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Caprolactam	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Carbazole	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Chrysene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Di-n-butylphthalate	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Di-n-octylphthalate	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ
Dibenz(a,h)anthracene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ
Dibenzofuran	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Diethylphthalate	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Dimethylphthalate	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Fluoranthene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Fluorene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Hexachlorobenzene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Hexachlorobutadiene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Hexachlorocyclopentadiene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Hexachloroethane	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	UJ
Isophorone	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
N-Nitrosodiphenylamine (1)	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Naphthalene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Nitrobenzene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Pentachlorophenol	950	U	1200	U	890	U	980	U	1100	U	900	U	970	U	4800	U
Phenanthrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Phenol	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-116**		**WOD-SS-117**		**WOD-SS-118**		**WOD-SS-119**		**WOD-SS-120**		**WOD-SS-121**		**WOD-SS-122**		**WOD-SS-123**	
Laboratory ID:	**B0258-04A**		**B0258-06A**		**B0258-08A**		**B0258-10A**		**B0258-14A**		**B0262-02A**		**B0262-04A**		**B0262-07A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**		**02/13/03**		**02/13/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	380	U	490	U	360	U	390	U	430	U	360	U	380	U	1900	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	380	U	490	U	360	U	390	U	430	U	NA		45		550	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,1,2,2-Tetrachloroethane	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,1,2-Trichloroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,1-Dichloroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,1-Dichloroethene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,2,4-Trichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ
1,2,4-Trimethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
1,2-Dibromo-3-chloropropane	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ
1,2-Dibromoethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,2-Dichlorobenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ
1,2-Dichloroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,2-Dichloroethene (cis)	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,2-Dichloropropane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
1,3,5-Trimethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
1,3-Dichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ
1,4-Dichlorobenzene	14	UJ	23	UR	11	U	10	U	17	UJ	11	U	14	UJ	12	UJ
2-Butanone	14	U	23	UJ	11	U	10	U	17	U	11	U	18	U	12	U
2-Hexanone	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
4-Methyl-2-pentanone	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Acetone	68	B	230	B	52	B	41	B	310	B	36	B	150	U	14	B
Benzene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Bromodichloromethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Bromoform	14	UJ	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Bromomethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Carbon Disulfide	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Carbon Tetrachloride	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Chlorobenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
Chloroethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Chloroform	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Chloromethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
cis-1,3-Dichloropropene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Cyclohexane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Dibromochloromethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Dichlorodifluoromethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Ethylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
Isopropylbenzene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
m,p-xylene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
Methyl Acetate	16	J	95	J	3	J	4	J	160	J	5	J	57	U	12	U
Methyl Tert-butyl Ether (mtbe)	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Methylcyclohexane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Methylene Chloride	7	B	5	B	6	B	4	B	8	B	3	B	9	B	1	B

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-116**		**WOD-SS-117**		**WOD-SS-118**		**WOD-SS-119**		**WOD-SS-120**		**WOD-SS-121**		**WOD-SS-122**		**WOD-SS-123**	
Laboratory ID:	**B0258-04A**		**B0258-06A**		**B0258-08A**		**B0258-10A**		**B0258-14A**		**B0262-02A**		**B0262-04A**		**B0262-07A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**		**02/13/03**		**02/13/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
Styrene	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
Tetrachloroethene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Toluene	14	U	23	UJ	11	U	10	U	2	J	11	U	14	U	12	U
trans-1,3-Dichloropropene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Trichloroethene	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Trichlorofluoromethane	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Vinyl Chloride	14	U	23	UJ	11	U	10	U	17	U	11	U	14	U	12	U
Xylene (Total)	14	UJ	23	UJ	11	U	10	U	17	UJ	11	U	14	U	12	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA		NA	
Total Ddt Residues	NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1221	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1232	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1242	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1248	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1254	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
Aroclor-1260	39	U	49	U	36	U	38	U	42	U	36	U	39	U	39	U
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	4.6	J	4.3	J	5.6	J	6.2	J	4.8	J	4.9	B	5.8		6	
TOC By Lloyd Kahn (mg/kg)	30400	J	13600	J	2090	J	9910	J	51900	J	5000	J	14500	J	13900	J

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-124		WOD-SS-124		WOD-SS-124		WOD-SS-125		WOD-SS-126		WOD-SS-127		WOD-SS-128		WOD-SS-128-DUP	
Laboratory ID:	**B0262-09A**		**B0262-09CRE**		**519499**		**B0262-11A**		**B0301-12B**		**B0301-13B**		**B0301-14B**		**B0301-15B**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/21/03**		**02/21/03**		**02/21/03**		**02/21/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:													**WOD-SS-128-DUP**		**WOD-SS-128**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**						**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	5110		NA		NA		8450		9600		5650		6250		8260	
Antimony	0.18	UL	NA		NA		0.16	UL	0.18	UR	0.2	UR	0.26	UR	0.29	UR
Arsenic	2.8		NA		NA		7.2		9		4.1		5.4		6.7	
Barium	23.3		NA		NA		40.1		57.2		44.7		23.2		24.9	
Beryllium	0.16		NA		NA		0.29		0.32		0.16		0.18		0.21	
Cadmium	0.042	U	NA		NA		0.038	UL	0.074	L	0.046	UL	0.061	UL	0.067	UL
Calcium	617		NA		NA		732		829		1120		632		385	
Chromium	6		NA		NA		11.4		14.2		8.6		8.4		9.6	
Cobalt	1.8		NA		NA		2.9		3.6		2.1		2.7		2.2	
Copper	3.7		NA		NA		7		8		4.4		5.3		5.4	
Cyanide	NA		NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	4610	J	NA		NA		7440	J	8670		5130		7340		6500	
Lead	9.5		NA		NA		25.3		32.8		20.8		15		16.6	
Magnesium	534		NA		NA		913		1080		695		1040		955	
Manganese	91.4	J	NA		NA		161	J	245		312		183	J	59.1	J
Mercury	0.038		NA		NA		0.075		0.089		0.064		0.4	J	0.092	J
Nickel	3		NA		NA		5.4		7.2		4.4		4.4		5.4	
Potassium	323		NA		NA		634		568		437		446		494	
Selenium	0.54	U	NA		NA		0.49	UL	0.71		0.59	U	0.79	U	0.86	U
Silver	0.26	B	NA		NA		0.31	B	0.35	R	0.14	R	0.27	R	0.24	R
Sodium	11.4	B	NA		NA		16.5	B	26.9	K	20.1	K	254		224	
Thallium	0.18	U	NA		NA		0.16	U	0.18	U	0.2	U	0.26	U	0.29	U
Vanadium	9.4		NA		NA		16.3		21.6		14.1		14.6		18.7	
Zinc	13.5		NA		NA		26.4		33.2		22.9		16.6		15.6	
SEMIVOLATILES	**ug/kg**						**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2,4,5-Trichlorophenol	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
2,4,6-Trichlorophenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2,4-Dichlorophenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2,4-Dimethylphenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2,4-Dinitrophenol	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
2,4-Dinitrotoluene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2,6-Dinitrotoluene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2-Chloronaphthalene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2-Chlorophenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2-Methylnaphthalene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2-Methylphenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
2-Nitroaniline	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
2-Nitrophenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
3,3'-Dichlorobenzidine	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
3-Nitroaniline	1100	U	NA		NA		1100	U	1100	UJ	1100	UJ	1500	UJ	1600	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-125**		**WOD-SS-126**		**WOD-SS-127**		**WOD-SS-128**		**WOD-SS-128-DUP**	
Laboratory ID:	**B0262-09A**		**B0262-09CRE**		**519499**		**B0262-11A**		**B0301-12B**		**B0301-13B**		**B0301-14B**		**B0301-15B**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/21/03**		**02/21/03**		**02/21/03**		**02/21/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:													**WOD-SS-128-DUP**		**WOD-SS-128**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4,6-Dinitro-2-methylphenol	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
4-Bromophenyl Phenyl Ether	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
4-Chloro-3-methylphenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
4-Chloroaniline	420	UJ	NA		NA		430	U	430	U	440	U	610	U	620	U
4-Chlorophenyl Phenyl Ether	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
4-Methylphenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
4-Nitroaniline	1100	U	NA		NA		1100	U	1100	U	1100	UJ	1500	U	1600	UJ
4-Nitrophenol	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
Acenaphthene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Acenaphthylene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Acetophenone	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Anthracene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Atrazine	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Benz(a)anthracene	420	U	NA		NA		190	J	64	J	440	U	610	U	620	U
Benzaldehyde	57	J	NA		NA		430	U	220	J	250	J	580	J	440	J
Benzo(a)pyrene	420	U	NA		NA		200	J	68	J	440	U	610	U	620	U
Benzo(b)fluoranthene	420	U	NA		NA		300	J	96	J	440	U	610	U	620	U
Benzo(g,h,i)perylene	420	U	NA		NA		93	J	430	U	440	U	610	U	620	U
Benzo(k)fluoranthene	420	U	NA		NA		150	J	430	U	440	U	610	U	620	U
Bis(2-chloroethoxy)methane	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Bis(2-chloroethyl)ether	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Bis(2-ethylhexyl)phthalate	420	U	NA		NA		430	U	51	J	440	U	82	J	620	U
Butylbenzylphthalate	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Caprolactam	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Carbazole	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Chrysene	420	U	NA		NA		220	J	62	J	440	U	610	U	620	U
Di-n-butylphthalate	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Di-n-octylphthalate	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Dibenz(a,h)anthracene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Dibenzofuran	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Diethylphthalate	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Dimethylphthalate	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Fluoranthene	420	U	NA		NA		280	J	100	J	440	U	610	U	620	U
Fluorene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Hexachlorobenzene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Hexachlorobutadiene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Hexachlorocyclopentadiene	420	U	NA		NA		430	U	430	U	440	UJ	610	U	620	UJ
Hexachloroethane	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		610	U	620	U
Indeno(1,2,3-cd)pyrene	420	U	NA		NA		81	J	430	U	440	U	610	U	620	U
Isophorone	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		610	U	620	U
N-Nitroso-di-n-propylamine	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
N-Nitrosodiphenylamine (1)	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Naphthalene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Nitrobenzene	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U
Pentachlorophenol	1100	U	NA		NA		1100	U	1100	U	1100	U	1500	U	1600	U
Phenanthrene	420	U	NA		NA		77	J	48	J	440	U	610	U	620	U
Phenol	420	U	NA		NA		430	U	430	U	440	U	610	U	620	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-125**		**WOD-SS-126**		**WOD-SS-127**		**WOD-SS-128**		**WOD-SS-128-DUP**	
Laboratory ID:	**B0262-09A**		**B0262-09CRE**		**519499**		**B0262-11A**		**B0301-12B**		**B0301-13B**		**B0301-14B**		**B0301-15B**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/21/03**		**02/21/03**		**02/21/03**		**02/21/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:													**WOD-SS-128-DUP**		**WOD-SS-128**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	420	U	NA		NA		280	J	110	J	440	U	610	U	620	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		610	U	620	U
Total Pah (soil)	420	U	NA		NA		1871		548		440	U	610	U	620	U
VOLATILES			**ug/kg**				**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,1,2,2-Tetrachloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,1,2-Trichloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,1-Dichloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,1-Dichloroethene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,2,4-Trichlorobenzene	NA		12	UJ	NA		11	UJ	2	J	14	U	22	U	22	U
1,2,4-Trimethylbenzene	NA		12	UJ	NA		11	U	4	J	5	J	22	U	22	U
1,2-Dibromo-3-chloropropane	NA		12	UJ	NA		11	UJ	14	U	14	U	22	U	22	U
1,2-Dibromoethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,2-Dichlorobenzene	NA		12	UJ	NA		11	UJ	3	J	2	J	22	U	22	U
1,2-Dichloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,2-Dichloroethene (cis)	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,2-Dichloropropane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
1,3,5-Trimethylbenzene	NA		12	UJ	NA		11	U	4	J	4	J	22	U	22	U
1,3-Dichlorobenzene	NA		12	UJ	NA		11	UJ	3	J	3	J	22	U	22	U
1,4-Dichlorobenzene	NA		12	UJ	NA		11	UJ	3	J	3	J	22	U	22	U
2-Butanone	NA		12	UJ	NA		14		28		35		22	U	23	
2-Hexanone	NA		12	UJ	NA		11	U	4	J	6	J	22	U	22	U
4-Methyl-2-pentanone	NA		12	UJ	NA		11	U	2	J	3	J	22	U	22	U
Acetone	NA		32	B	NA		130		410	B	410	B	110	B	170	B
Benzene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Bromodichloromethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Bromoform	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Bromomethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Carbon Disulfide	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Carbon Tetrachloride	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Chlorobenzene	NA		12	UJ	NA		11	U	14	U	1	J	22	U	22	U
Chloroethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Chloroform	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Chloromethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
cis-1,3-Dichloropropene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Cyclohexane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Dibromochloromethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Dichlorodifluoromethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Ethylbenzene	NA		12	UJ	NA		11	U	2	J	2	J	22	U	22	U
Isopropylbenzene	NA		12	UJ	NA		11	U	2	J	2	J	22	U	22	U
m,p-xylene	NA		12	UJ	NA		11	U	4	J	4	J	22	U	22	U
Methyl Acetate	NA		4	J	NA		37		8	J	30		31		48	
Methyl Tert-butyl Ether (mtbe)	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Methylcyclohexane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Methylene Chloride	NA		4	B	NA		5	B	28	B	5	B	10	B	17	B

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-124**		**WOD-SS-125**		**WOD-SS-126**		**WOD-SS-127**		**WOD-SS-128**		**WOD-SS-128-DUP**	
Laboratory ID:	**B0262-09A**		**B0262-09CRE**		**519499**		**B0262-11A**		**B0301-12B**		**B0301-13B**		**B0301-14B**		**B0301-15B**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/21/03**		**02/21/03**		**02/21/03**		**02/21/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:													**WOD-SS-128-DUP**		**WOD-SS-128**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	NA		12	UJ	NA		11	U	2	J	2	J	22	U	22	U
Styrene	NA		12	UJ	NA		11	U	2	J	2	J	22	U	22	U
Tetrachloroethene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Toluene	NA		12	UJ	NA		11	U	14	U	1	J	22	U	22	U
trans-1,3-Dichloropropene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Trichloroethene	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Trichlorofluoromethane	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Vinyl Chloride	NA		12	UJ	NA		11	U	14	U	14	U	22	U	22	U
Xylene (Total)	NA		12	UJ	NA		11	U	6	J	6	J	22	U	22	U
PESTICIDES/PCBS	**ug/kg**						**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA		NA	
Total Ddt Residues	NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1221	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1232	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1242	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1248	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1254	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
Aroclor-1260	42	U	NA		NA		43	U	43	U	44	U	62	U	63	U
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.5		NA		NA		6.2		6.5		5.9		6.6		6.7	
TOC By Lloyd Kahn (mg/kg)	NA		NA		17800	J	13100	J	36500	J	46900	J	63100	J	41100	J

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-129		WOD-SS-130		WOD-SS-131		WOD-SS-132		WOD-SS-133		WOD-SS-133-DUP		WOD-SS-134		WOD-SS-135	
Laboratory ID:	B0279-04A		B0279-05A		B0279-06A		B0279-07A		B0279-08A		B0279-12A		B0327-03A		B0327-04A	
Sample Date:	02/19/03		02/19/03		02/19/03		02/19/03		02/19/03		02/19/03		02/26/03		02/26/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:									WOD-SS-133-DUP		WOD-SS-133					
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	2310		917		5900		2020		8590		8210		4870		14600	J
Antimony	0.18	UR	0.16	UL	0.41	B	0.25	UL	0.27	UR	0.21	UR	0.25	U	0.49	UJ
Arsenic	1.8		0.82		3.6		1.4		4.1		3.9		2.5		7.6	J
Barium	6.4		3.3		9		3.6		7.7		6.7		11		20.9	J
Beryllium	0.056		0.029		0.17		0.061		0.25		0.21		0.13		0.45	J
Cadmium	0.043	UR	0.036	UR	0.093	UR	0.059	UR	0.064	UR	0.049	UR	0.058	U	0.11	UJ
Calcium	111		127		338		684		686	J	410	J	755		3060	J
Chromium	2.9		1.5		6.7		2.6		8.5		8.2		5.4		20.9	J
Cobalt	0.4	K	0.14	K	0.94		0.49		1.6		1.2		2.1		3.2	J
Copper	1.2		0.76		3.5		2.2		5.5	J	3	J	3.9		21.1	J
Cyanide	NA		NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA		NA	
Iron	2390		1500		3150		2030		6820		5950		5180		11000	J
Lead	5.1		2.4		23.2		9.4		18.3		12.4		9.9		59.6	J
Magnesium	253		156		718		815		1190		899		1040		4170	J
Manganese	12.4		2.8		13.1		20.9		32.1		21.7		16.1		54	J
Mercury	0.021	U	0.021	U	0.045	U	0.029		0.05		0.037		0.052		0.19	J
Nickel	1.3		0.62		3.2		1.6		4.5		3.8		3.7		14.2	J
Potassium	178		99.8	B	442		281		607		457		308		1170	J
Selenium	0.55	UL	0.47	UL	1.2	UL	0.76	UL	0.82	UL	0.63	UL	0.75	U	1.5	J
Silver	0.13	K	0.1	U	0.27	U	0.65		0.24	K	0.14	K	0.4		1.6	J
Sodium	88.9	B	149	B	484	B	583		1070	J	634	J	645		3820	J
Thallium	0.18	U	0.16	U	0.4	U	0.25	U	0.27	U	0.21	U	0.25	U	0.49	UJ
Vanadium	6.1		3.1		14.3		7.1		21.1		17.8		12.9		70.7	J
Zinc	3.1		1.2		6.6		3.9		10.9		8.2		12.6		48.1	J
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1-Biphenyl	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2,4,5-Trichlorophenol	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
2,4,6-Trichlorophenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2,4-Dichlorophenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2,4-Dimethylphenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2,4-Dinitrophenol	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
2,4-Dinitrotoluene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2,6-Dinitrotoluene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2-Chloronaphthalene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2-Chlorophenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2-Methylnaphthalene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2-Methylphenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
2-Nitroaniline	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
2-Nitrophenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
3,3'-Dichlorobenzidine	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
3-Nitroaniline	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	UJ	3000	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-129		WOD-SS-130		WOD-SS-131		WOD-SS-132		WOD-SS-133		WOD-SS-133-DUP		WOD-SS-134		WOD-SS-135	
Laboratory ID:	B0279-04A		B0279-05A		B0279-06A		B0279-07A		B0279-08A		B0279-12A		B0327-03A		B0327-04A	
Sample Date:	02/19/03		02/19/03		02/19/03		02/19/03		02/19/03		02/19/03		02/26/03		02/26/03	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:									WOD-SS-133-DUP		WOD-SS-133					
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
4-Bromophenyl Phenyl Ether	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
4-Chloro-3-methylphenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
4-Chloroaniline	420	UJ	410	UJ	1000	UJ	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
4-Chlorophenyl Phenyl Ether	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
4-Methylphenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
4-Nitroaniline	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
4-Nitrophenol	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
Acenaphthene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Acenaphthylene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Acetophenone	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Anthracene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Atrazine	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Benz(a)anthracene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Benzaldehyde	88	J	300	J	850	J	79	J	250	J	140	J	180	J	1500	J
Benzo(a)pyrene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Benzo(b)fluoranthene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	180	J
Benzo(g,h,i)perylene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Benzo(k)fluoranthene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Bis(2-chloroethoxy)methane	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Bis(2-chloroethyl)ether	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Bis(2-ethylhexyl)phthalate	420	U	410	U	100	J	550	U	640	U	540	U	70	J	170	J
Butylbenzylphthalate	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Caprolactam	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Carbazole	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Chrysene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Di-n-butylphthalate	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Di-n-octylphthalate	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Dibenz(a,h)anthracene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Dibenzofuran	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Diethylphthalate	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Dimethylphthalate	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Fluoranthene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	160	J
Fluorene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Hexachlorobenzene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Hexachlorobutadiene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Hexachlorocyclopentadiene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Hexachloroethane	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Hmw Pah (sediment)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	330	
Indeno(1,2,3-cd)pyrene	420	U	410	U	1000	U	550	UJ	640	UJ	540	UJ	620	U	1200	UJ
Isophorone	420	UL	410	UL	1000	UL	550	UL	640	UL	540	UL	620	U	1200	UJ
Lmw Pah (sediment)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	U
N-Nitroso-di-n-propylamine	420	UL	410	UL	1000	UL	550	UL	640	UL	540	UL	620	U	1200	UJ
N-Nitrosodiphenylamine (1)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Naphthalene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Nitrobenzene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Pentachlorophenol	1000	U	1000	U	2500	U	1400	U	1600	U	1400	U	1600	U	3000	UJ
Phenanthrene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ
Phenol	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	1200	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-129**		**WOD-SS-130**		**WOD-SS-131**		**WOD-SS-132**		**WOD-SS-133**		**WOD-SS-133-DUP**		**WOD-SS-134**		**WOD-SS-135**	
Laboratory ID:	**B0279-04A**		**B0279-05A**		**B0279-06A**		**B0279-07A**		**B0279-08A**		**B0279-12A**		**B0327-03A**		**B0327-04A**	
Sample Date:	**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/26/03**		**02/26/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:									**WOD-SS-133-DUP**		**WOD-SS-133**					
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	170	J
Total Pah (sediment)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	330	
Total Pah (soil)	420	U	410	U	1000	U	550	U	640	U	540	U	620	U	510	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,1,2,2-Tetrachloroethane	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,1,2-Trichloroethane	12	U	14	U	43	U	20	U	26	UJ	25	U	23	U	74	UJ
1,1-Dichloroethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,1-Dichloroethene	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,2,4-Trichlorobenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,2,4-Trimethylbenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,2-Dibromo-3-chloropropane	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,2-Dibromoethane	12	U	14	U	43	U	20	U	26	UJ	25	U	23	U	74	UJ
1,2-Dichlorobenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,2-Dichloroethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,2-Dichloroethene (cis)	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,2-Dichloropropane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
1,3,5-Trimethylbenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,3-Dichlorobenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
1,4-Dichlorobenzene	12	UJ	14	UJ	43	UJ	20	UJ	26	UJ	25	UJ	23	UJ	74	UJ
2-Butanone	12	U	28		43	U	20	U	26	U	22	J	23	U	74	UJ
2-Hexanone	12	U	14	U	20	J	20	U	26	UJ	25	U	23	UJ	74	UJ
4-Methyl-2-pentanone	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Acetone	30	B	200		79	B	36	B	140	B	210		71	B	320	B
Benzene	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Bromodichloromethane	12	U	14	U	43	U	20	U	26	U	25	U	23	UJ	74	UJ
Bromoform	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Bromomethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Carbon Disulfide	12	U	6	J	43	U	20	U	26	U	25	U	6	J	13	J
Carbon Tetrachloride	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Chlorobenzene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Chloroethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Chloroform	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Chloromethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
cis-1,3-Dichloropropene	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Cyclohexane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Dibromochloromethane	12	U	14	U	43	U	20	U	26	UJ	25	U	23	U	74	UJ
Dichlorodifluoromethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Ethylbenzene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Isopropylbenzene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
m,p-xylene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Methyl Acetate	6	J	26		43	U	4	J	19	J	38		23	U	69	J
Methyl Tert-butyl Ether (mtbe)	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Methylcyclohexane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Methylene Chloride	4	B	6	B	12	B	6	B	6	B	13	B	5	B	25	B

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-129**		**WOD-SS-130**		**WOD-SS-131**		**WOD-SS-132**		**WOD-SS-133**		**WOD-SS-133-DUP**		**WOD-SS-134**		**WOD-SS-135**	
Laboratory ID:	**B0279-04A**		**B0279-05A**		**B0279-06A**		**B0279-07A**		**B0279-08A**		**B0279-12A**		**B0327-03A**		**B0327-04A**	
Sample Date:	**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/19/03**		**02/26/03**		**02/26/03**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:									**WOD-SS-133-DUP**		**WOD-SS-133**					
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Styrene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Tetrachloroethene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
Toluene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	U	74	UJ
trans-1,3-Dichloropropene	12	U	14	U	43	U	20	U	26	UJ	25	U	23	U	74	UJ
Trichloroethene	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Trichlorofluoromethane	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Vinyl Chloride	12	U	14	U	43	U	20	U	26	U	25	U	23	U	74	UJ
Xylene (Total)	12	U	14	U	43	U	20	U	26	UJ	25	U	23	UJ	74	UJ
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA		NA	
Total Ddt Residues	NA		NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1221	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1232	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1242	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1248	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1254	42	U	41	U	100	U	56	U	65	U	54	U	62	U	120	UJ
Aroclor-1260	42	UJ	41	UJ	100	UJ	56	UJ	65	UJ	54	UJ	62	U	220	J
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.7		6.1		6.3		6.8		6.3		6.3		6.8		6.7	
TOC By Lloyd Kahn (mg/kg)	10200	J	26600	J	39600	J	59600	J	80900	J	8490	J	51500	J	175000	J

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-136**		**WOD-SS-137**		**WOD-SS-138**		**WOD-SS-139**		**2WFF16-SB1S1**		**2WFF16-SB2S1**		**2WFF16-SB3S1**		**2WFF16-SB4S1**	
Laboratory ID:	**B0279-11A**		**B0279-09A**		**B0279-13A**		**B0301-16B**									
Sample Date:	**02/19/03**		**02/19/03**		**02/19/03**		**02/21/03**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	16300		19500		5180		9150		10600		6880		5560		3290	
Antimony	0.54	UR	0.42	UR	0.25	UR	0.23	UR	0.32	U	0.29	U	0.29	U	0.29	U
Arsenic	5.6		8.9		4		9.8		1.9		1.7		1.1		0.74	
Barium	49.4		50.2		8.4		50.4		33.3		16.6		14.2		9.8	
Beryllium	0.45		0.49		0.11		0.33		0.16	B	0.05	B	0.07	B	0.04	B
Cadmium	0.12	UR	0.098	UR	0.058	UR	0.053	UR	0.06	U	0.05	U	0.05	U	0.05	U
Calcium	3880		926		145		442		627		146		84.2		91.6	
Chromium	19.8		20.1		6.1		16.4		10.5		8.4		6.7		3.6	
Cobalt	3.2		3		0.81	K	3.9		2.7		1		0.85		0.74	
Copper	10.7		11.7		2.5		11		8.3	K	3.3	K	2.7	K	1.5	B
Cyanide	NA		NA		NA		NA		0.5	U	0.46	U	0.45	U	0.43	U
Hexavalent Chromium	NA		NA		NA		NA		0.22	R	0.21	R	0.22	R	0.21	R
Iron	10300		14200		7040		10200		8710		5920		4410		2650	
Lead	51.9		71		14.3		35.7		7.5		30.6		37.1		7.4	
Magnesium	2840		1550		293		1190		703		443		352		204	
Manganese	45.3		38.6		11.2		214		89.9		34.8		27.3		29.8	
Mercury	0.16		0.13		0.044		0.33		0.05	B	0.05	U	0.05	U	0.04	U
Nickel	12.2		10.2		2.5		6.8		5.7		3.1		2.6		1.1	
Potassium	811		747		263		517		495		410		307		189	
Selenium	1.6	UL	1.3	UL	0.78	L	0.69	U	0.56	B	0.52	K	0.38	K	0.61	K
Silver	2.3		1.1	K	0.19	K	0.38	R	0.11	U	0.1	U	0.1	U	0.1	U
Sodium	426	B	94.4	B	13.7	B	123		345		224		172		102	
Thallium	0.54	U	0.42	U	0.25	U	0.23	U	0.3	U	0.27	U	0.28	U	0.27	U
Vanadium	48.4		42.8		14.8		23.5		16.3		14.8		13.2		5.9	
Zinc	34.5		28.5		6.4		31.7		29.6		13.8		9.7		7.9	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	1300	U	970	U	550	U	540	U	NA		NA		NA		NA	
1,2,4-Trichlorobenzene	NA		NA		NA		NA		380	UJ	340	UJ	7400	UJ	350	UJ
1,2-Dichlorobenzene	NA		NA		NA		NA		380	UJ	340	UJ	7400	UJ	350	UJ
1,3-Dichlorobenzene	NA		NA		NA		NA		380	UJ	340	UJ	7400	UJ	350	UJ
1,4-Dichlorobenzene	NA		NA		NA		NA		380	UJ	340	UJ	7400	UJ	350	UJ
2,2'-Oxybis(1-chloropropane)	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2,4,5-Trichlorophenol	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
2,4,6-Trichlorophenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2,4-Dichlorophenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2,4-Dimethylphenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2,4-Dinitrophenol	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
2,4-Dinitrotoluene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2,6-Dinitrotoluene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2-Chloronaphthalene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2-Chlorophenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2-Methylnaphthalene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2-Methylphenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
2-Nitroaniline	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
2-Nitrophenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
3,3'-Dichlorobenzidine	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
3-Nitroaniline	3300	UJ	2400	U	1400	U	1400	UJ	940	UJ	840	UJ	18000	UJ	870	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-136		WOD-SS-137		WOD-SS-138		WOD-SS-139		2WFF16-SB1S1		2WFF16-SB2S1		2WFF16-SB3S1		2WFF16-SB4S1	
Laboratory ID:	B0279-11A		B0279-09A		B0279-13A		B0301-16B									
Sample Date:	02/19/03		02/19/03		02/19/03		02/21/03		05/07/98		05/07/98		05/07/98		05/07/98	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:																
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
4-Bromophenyl Phenyl Ether	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
4-Chloro-3-methylphenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
4-Chloroaniline	1300	U	970	UJ	550	UJ	540	U	380	UJ	340	R	7400	UJ	350	UJ
4-Chlorophenyl Phenyl Ether	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
4-Methylphenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
4-Nitroaniline	3300	UJ	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
4-Nitrophenol	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
Acenaphthene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Acenaphthylene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Acetophenone	1300	U	970	U	550	U	540	U	NA		NA		NA		NA	
Anthracene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Atrazine	1300	U	970	U	550	U	540	U	NA		NA		NA		NA	
Benz(a)anthracene	1300	U	970	U	550	U	210	J	380	UJ	340	UJ	7400	UJ	350	UJ
Benzaldehyde	710	J	810	J	110	J	540	UJ	NA		NA		NA		NA	
Benzo(a)pyrene	1300	U	970	UJ	550	U	360	J	380	UJ	340	UJ	7400	UJ	350	UJ
Benzo(b)fluoranthene	1300	U	970	UJ	550	U	430	J	380	UJ	340	UJ	7400	UJ	350	UJ
Benzo(g,h,i)perylene	1300	U	970	UJ	550	U	540	U	380	UJ	83	J	7400	UJ	350	UJ
Benzo(k)fluoranthene	1300	U	970	UJ	550	U	180	J	380	UJ	340	UJ	7400	UJ	350	UJ
Bis(2-chloroethoxy)methane	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Bis(2-chloroethyl)ether	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Bis(2-ethylhexyl)phthalate	1300	U	970	U	550	U	540	U	480	B	340	UJ	7400	UJ	350	UJ
Butylbenzylphthalate	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Caprolactam	1300	U	970	U	550	U	540	U	NA		NA		NA		NA	
Carbazole	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Chrysene	1300	U	970	U	550	U	270	J	380	UJ	78	J	7400	UJ	350	UJ
Di-n-butylphthalate	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Di-n-octylphthalate	1300	U	970	UJ	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Dibenz(a,h)anthracene	1300	U	970	UJ	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Dibenzofuran	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Diethylphthalate	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Dimethylphthalate	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Fluoranthene	1300	U	970	U	550	U	210	J	380	UJ	340	UJ	7400	UJ	350	UJ
Fluorene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Hexachlorobenzene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Hexachlorobutadiene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Hexachlorocyclopentadiene	1300	UJ	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Hexachloroethane	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Hmw Pah (sediment)	1300	U	970	U	550	U	1300		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	1300	U	970	UJ	550	U	230	J	380	UJ	340	UJ	7400	UJ	350	UJ
Isophorone	1300	UL	970	UL	550	UL	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Lmw Pah (sediment)	1300	U	970	U	550	U	63		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	1300	UL	970	UL	550	UL	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
N-Nitrosodiphenylamine (1)	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Naphthalene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Nitrobenzene	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ
Pentachlorophenol	3300	U	2400	U	1400	U	1400	U	940	UJ	840	UJ	18000	UJ	870	UJ
Phenanthrene	1300	U	970	U	550	U	63	J	380	UJ	340	UJ	7400	UJ	350	UJ
Phenol	1300	U	970	U	550	U	540	U	380	UJ	340	UJ	7400	UJ	350	UJ

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SS-136		WOD-SS-137		WOD-SS-138		WOD-SS-139		2WFF16-SB1S1		2WFF16-SB2S1		2WFF16-SB3S1		2WFF16-SB4S1	
Laboratory ID:	**B0279-11A**		**B0279-09A**		**B0279-13A**		**B0301-16B**									
Sample Date:	**02/19/03**		**02/19/03**		**02/19/03**		**02/21/03**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	1300	U	970	U	550	U	250	J	380	UJ	340	UJ	7400	UJ	350	UJ
Total Pah (sediment)	1300	U	970	U	550	U	1363		NA		NA		NA		NA	
Total Pah (soil)	1300	U	970	U	550	U	2203		380	U	161		7400	U	350	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,1,2,2-Tetrachloroethane	64	UJ	43	UJ	21	UJ	16	U	11	U	10	U	11	U	11	U
1,1,2-Trichloro-1,2,2-trifluoroethane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
1,1,2-Trichloroethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,1-Dichloroethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,1-Dichloroethene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,2,4-Trichlorobenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,2,4-Trimethylbenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,2-Dibromoethane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
1,2-Dichlorobenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,2-Dichloroethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,2-Dichloroethene (cis)	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
1,2-Dichloroethene (Total)	NA		NA		NA		NA		11	U	10	U	11	U	11	U
1,2-Dichloroethene (trans)	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
1,2-Dichloropropane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
1,3,5-Trimethylbenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,3-Dichlorobenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
1,4-Dichlorobenzene	64	UJ	43	UJ	21	UJ	16	U	NA		NA		NA		NA	
2-Butanone	100		43	U	21	U	21		11	U	10	U	11	U	11	U
2-Hexanone	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
4-Methyl-2-pentanone	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Acetone	920		270		160		180		11	U	10	U	11	U	11	U
Benzene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Bromodichloromethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Bromoform	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Bromomethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Carbon Disulfide	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Carbon Tetrachloride	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Chlorobenzene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Chloroethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Chloroform	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Chloromethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
cis-1,3-Dichloropropene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Cyclohexane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Dibromochloromethane	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Dichlorodifluoromethane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Ethylbenzene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Isopropylbenzene	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
m,p-xylene	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Methyl Acetate	210		36	J	39		39		NA		NA		NA		NA	
Methyl Tert-butyl Ether (mtbe)	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Methylcyclohexane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Methylene Chloride	19	B	12	B	13	B	19	B	11	U	10	U	11	U	11	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SS-136**		**WOD-SS-137**		**WOD-SS-138**		**WOD-SS-139**		**2WFF16-SB1S1**		**2WFF16-SB2S1**		**2WFF16-SB3S1**		**2WFF16-SB4S1**	
Laboratory ID:	**B0279-11A**		**B0279-09A**		**B0279-13A**		**B0301-16B**									
Sample Date:	**02/19/03**		**02/19/03**		**02/19/03**		**02/21/03**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Styrene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Tetrachloroethene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Toluene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
trans-1,3-Dichloropropene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Trichloroethene	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Trichlorofluoromethane	64	U	43	U	21	U	16	U	NA		NA		NA		NA	
Vinyl Chloride	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
Xylene (Total)	64	U	43	U	21	U	16	U	11	U	10	U	11	U	11	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
4,4'-DDE	NA		NA		NA		NA		3.8	U	17	U	7.4	K	3.5	U
4,4'-DDT	NA		NA		NA		NA		3.8	U	6.3	J	7.4	J	4.2	J
Aldrin	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Alpha-BHC	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Alpha-Chlordane	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Beta-BHC	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Delta-BHC	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Dieldrin	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Endosulfan I	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Endosulfan II	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Endosulfan Sulfate	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Endrin	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Endrin Aldehyde	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Endrin Ketone	NA		NA		NA		NA		3.8	U	17	U	18	U	3.5	U
Gamma-BHC (Lindane)	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Gamma-Chlordane	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Heptachlor	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Heptachlor Epoxide	NA		NA		NA		NA		1.9	U	8.7	U	9.3	U	1.8	U
Methoxychlor	NA		NA		NA		NA		19	U	87	U	93	U	18	U
Total Ddt Residues	NA		NA		NA		NA		3.8	U	6.3		14.8		4.2	
Toxaphene	NA		NA		NA		NA		190	U	870	U	930	U	180	U
Aroclor-1016	130	U	96	U	56	U	56	U	38	U	170	U	180	U	35	U
Aroclor-1221	130	U	96	U	56	U	56	U	75	U	350	U	370	U	71	U
Aroclor-1232	130	U	96	U	56	U	56	U	38	U	170	U	180	U	35	U
Aroclor-1242	130	U	96	U	56	U	56	U	38	U	170	U	180	U	35	U
Aroclor-1248	130	U	96	U	56	U	56	U	38	U	170	U	180	U	35	U
Aroclor-1254	130	U	96	U	56	U	56	U	38	U	170	U	180	U	35	U
Aroclor-1260	180	J	96	UJ	56	UJ	56	U	38	U	170	U	180	U	35	U
MISCELLANEOUS PARAMETERS																
% Solids	NA		NA		NA		NA		NA		NA		NA		NA	
Diesel Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
Gasoline Range Organics	NA		NA		NA		NA		NA		NA		NA		NA	
pH (s.u.)	6.2		5.3		4.7		6.4		NA		NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	191700	J	143300	J	69100	J	42100	J	NA		NA		NA		NA	

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS10-DUP**		**3WFF16-SS10**		**3WFF16-SS11**		**3WFF16-SS12**		**3WFF16-SS13**		**3WFF16-SS14**		**3WFF16-SS15**	
Laboratory ID:														
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**3WFF16-SS10**		**3WFF16-SS10-DUP**											
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3900		4020		3400		2850		3230		7270		8490	
Antimony	0.68	U	0.76	U	0.71	U	0.71	U	0.92		0.82	U	0.7	U
Arsenic	0.55	U	0.77		0.58	U	0.58	U	1.4		1.3		1.4	
Barium	10		9.4		8.3		12.6		13.5		25.3		27.4	
Beryllium	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.2	
Cadmium	0.1	U	0.11	U	0.1	U	0.1	U	0.1	U	0.12	U	0.1	U
Calcium	75.1		79.4		67.4		170		406		633		184	
Chromium	4.6		4.7		3.9		3.4		3.8		7.8		8.2	
Cobalt	0.65		0.68		0.6		0.71		3.2		1.9		1.9	
Copper	1.9		2.1		1.4		1.8		2.9		8.3		3.6	
Cyanide	0.47	U	0.47	U	0.51	U	0.48	U	0.52	U	0.4	U	0.4	U
Hexavalent Chromium	0.42	U	0.42	U	0.42	U	0.43	U	0.44	U	0.94	U	0.91	U
Iron	3020		2920		2340		2340		3110		6810		7130	
Lead	22		25.4		23.3		5.4		12		9.2		10.2	
Magnesium	253		256		201		176		214		537		646	
Manganese	23.1		23.9		27.7		33.8		128		72.1		80.7	
Mercury	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Nickel	2.6		2.9		1.6		1.2		1.6		4.2		4.6	
Potassium	221		228		180		149		177		354		358	
Selenium	0.65		0.19	U	0.23		0.27		0.47		0.43		0.6	
Silver	0.24		0.36		0.14	U	0.24		0.16		0.16	U	0.32	
Sodium	155		222		174		153		161		356		334	
Thallium	0.63	U	0.7	U	0.66	U	0.66	U	0.68	U	0.76	U	0.65	U
Vanadium	13.7		14.1		7.6		5.1		6.2		12		14.1	
Zinc	10.3		10.7		6.7		13.2		11.1		53.2		16.6	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
1,2-Dichlorobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
1,3-Dichlorobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
1,4-Dichlorobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,2'-Oxybis(1-chloropropane)	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,4,5-Trichlorophenol	870	U	880	U	860	U	890	U	900	U	980	U	950	U
2,4,6-Trichlorophenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,4-Dichlorophenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,4-Dimethylphenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,4-Dinitrophenol	870	U	880	U	860	U	890	U	900	U	980	U	950	U
2,4-Dinitrotoluene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2,6-Dinitrotoluene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2-Chloronaphthalene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2-Chlorophenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2-Methylnaphthalene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2-Methylphenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
2-Nitroaniline	870	U	880	U	860	U	890	U	900	U	980	U	950	U
2-Nitrophenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
3,3'-Dichlorobenzidine	350	U	350	U	340	U	360	U	360	U	390	U	380	U
3-Nitroaniline	870	U	880	U	860	U	890	U	900	U	980	U	950	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS10-DUP**		**3WFF16-SS10**		**3WFF16-SS11**		**3WFF16-SS12**		**3WFF16-SS13**		**3WFF16-SS14**		**3WFF16-SS15**	
Laboratory ID:														
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**3WFF16-SS10**		**3WFF16-SS10-DUP**											
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4,6-Dinitro-2-methylphenol	870	U	880	U	860	U	890	U	900	U	980	U	950	U
4-Bromophenyl Phenyl Ether	350	U	350	U	340	U	360	U	360	U	390	U	380	U
4-Chloro-3-methylphenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
4-Chloroaniline	350	U	350	U	340	U	360	U	360	U	390	U	380	U
4-Chlorophenyl Phenyl Ether	350	U	350	U	340	U	360	U	360	U	390	U	380	U
4-Methylphenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U
4-Nitroaniline	870	U	880	U	860	U	890	U	900	U	980	U	950	U
4-Nitrophenol	870	U	880	U	860	U	890	U	900	U	980	U	950	U
Acenaphthene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Acenaphthylene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Acetophenone	NA		NA		NA		NA		NA		NA		NA	
Anthracene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Atrazine	NA		NA		NA		NA		NA		NA		NA	
Benz(a)anthracene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	1100		1300		340	U	360	U	360	U	390	U	380	U
Benzo(b)fluoranthene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Benzo(g,h,i)perylene	590		510		340	U	360	U	360	U	390	U	200	J
Benzo(k)fluoranthene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Bis(2-chloroethoxy)methane	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Bis(2-chloroethyl)ether	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Bis(2-ethylhexyl)phthalate	950		920		1500		740		430		1800		1100	
Butylbenzylphthalate	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Caprolactam	NA		NA		NA		NA		NA		NA		NA	
Carbazole	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Chrysene	410		400		230	J	360	U	360	U	390	U	180	J
Di-n-butylphthalate	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Di-n-octylphthalate	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Dibenz(a,h)anthracene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Dibenzofuran	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Diethylphthalate	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Dimethylphthalate	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Fluoranthene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Fluorene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Hexachlorobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Hexachlorobutadiene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Hexachlorocyclopentadiene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Hexachloroethane	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	130	J	110	J	340	U	360	U	360	U	390	U	380	U
Isophorone	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	350	U	350	U	340	U	360	U	360	U	390	U	380	U
N-Nitrosodiphenylamine (1)	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Naphthalene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Nitrobenzene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Pentachlorophenol	870	U	880	U	860	U	890	U	900	U	980	U	950	U
Phenanthrene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Phenol	350	U	350	U	340	U	360	U	360	U	390	U	380	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS10-DUP**		**3WFF16-SS10**		**3WFF16-SS11**		**3WFF16-SS12**		**3WFF16-SS13**		**3WFF16-SS14**		**3WFF16-SS15**	
Laboratory ID:														
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**3WFF16-SS10**		**3WFF16-SS10-DUP**											
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	350	U	350	U	340	U	360	U	360	U	390	U	380	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	2230		2320		230		360	U	360	U	390	U	380	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,1,2,2-Tetrachloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,1-Dichloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,1-Dichloroethene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,2-Dichloroethene (cis)	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (Total)	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,2-Dichloroethene (trans)	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloropropane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
2-Butanone	10	U	11	U	10	U	11	U	11	U	12	U	11	U
2-Hexanone	10	U	11	U	10	U	11	U	11	U	12	U	11	U
4-Methyl-2-pentanone	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Acetone	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Benzene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Bromodichloromethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Bromoform	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Bromomethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Carbon Disulfide	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Carbon Tetrachloride	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Chlorobenzene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Chloroethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Chloroform	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Chloromethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
cis-1,3-Dichloropropene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Cyclohexane	NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Dichlorodifluoromethane	NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA	
m,p-xylene	NA		NA		NA		NA		NA		NA		NA	
Methyl Acetate	NA		NA		NA		NA		NA		NA		NA	
Methyl Tert-butyl Ether (mtbe)	NA		NA		NA		NA		NA		NA		NA	
Methylcyclohexane	NA		NA		NA		NA		NA		NA		NA	
Methylene Chloride	10	U	11	U	10	U	11	U	11	U	12	U	11	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS10-DUP**		**3WFF16-SS10**		**3WFF16-SS11**		**3WFF16-SS12**		**3WFF16-SS13**		**3WFF16-SS14**		**3WFF16-SS15**	
Laboratory ID:														
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:	**3WFF16-SS10**		**3WFF16-SS10-DUP**											
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	NA		NA		NA		NA		NA		NA		NA	
Styrene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Tetrachloroethene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Toluene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
trans-1,3-Dichloropropene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Trichloroethene	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Trichlorofluoromethane	NA		NA		NA		NA		NA		NA		NA	
Vinyl Chloride	10	U	11	U	10	U	11	U	11	U	12	U	11	U
Xylene (Total)	10	U	11	U	10	U	11	U	11	U	12	U	11	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
4,4'-DDE	35	U	35	U	35	U	2.8	J	3.9		3.9	U	38	U
4,4'-DDT	35	U	35	U	35	U	3.5	U	12		3.9	U	38	U
Aldrin	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Alpha-BHC	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Alpha-Chlordane	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Beta-BHC	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Delta-BHC	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Dieldrin	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Endosulfan I	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Endosulfan II	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Endosulfan Sulfate	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Endrin	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Endrin Aldehyde	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Endrin Ketone	35	U	35	U	35	U	3.5	U	3.6	U	3.9	U	38	U
Gamma-BHC (Lindane)	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Gamma-Chlordane	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Heptachlor	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Heptachlor Epoxide	17	U	17	U	17	U	1.7	U	1.8	U	2	U	19	U
Methoxychlor	170	U	170	U	170	U	17	U	18	U	20	U	190	U
Total Ddt Residues	35	U	35	U	35	U	2.8		15.9		3.9	U	38	U
Toxaphene	1700	U	1700	U	1700	U	170	U	180	U	200	U	1900	U
Aroclor-1016	350	U	350	U	350	U	35	U	36	U	39	U	380	U
Aroclor-1221	690	U	700	U	690	U	70	U	71	U	78	U	750	U
Aroclor-1232	350	U	350	U	350	U	35	U	36	U	39	U	380	U
Aroclor-1242	350	U	350	U	350	U	35	U	36	U	39	U	380	U
Aroclor-1248	350	U	350	U	350	U	35	U	36	U	39	U	380	U
Aroclor-1254	350	U	350	U	350	U	35	U	36	U	39	U	380	U
Aroclor-1260	350	U	350	U	350	U	35	U	36	U	39	U	380	U
MISCELLANEOUS PARAMETERS														
% Solids	94.7		94.1		96.3		92.9		91.7		84.9		87.5	
Diesel Range Organics	790	Y	800	Y	870	Y	17	Y	8.5	Y	5.6	Y	24	Y
Gasoline Range Organics	53	U	53	U	52	U	54	U	54	U	59	U	220	Z
pH (s.u.)	NA		NA		NA		NA		NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA		NA		NA		NA		NA	

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS16**		**3WFF16-SS17**		**3WFF16-SS1**		**3WFF16-SS2**		**3WFF16-SS3**		**3WFF16-SS4**		**3WFF16-SS5**		**3WFF16-SS6**	
Laboratory ID:																
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	6350		4730		6030		6400		9350		5960		6130		6760	
Antimony	0.71	U	0.73	U	0.79	U	0.8	U	0.78	U	0.73	U	0.77	U	0.76	U
Arsenic	2.9		0.83		1.8		1.2		1.9		0.78		1.2		1.1	
Barium	33.3		18.7		23.6		18.8		31		12		16.8		26.8	
Beryllium	0.19		0.1	U	0.15		0.11	U	0.17		0.1	U	0.11		0.2	
Cadmium	0.1	U	0.1	U	0.11	U	0.11	U	0.11	U	0.1	U	0.11	U	0.11	U
Calcium	374		351		143		372		891		41.8		110		354	
Chromium	7.4		5.2		6.5		8.5		11		4.5		5.9		6.6	
Cobalt	1.5		1.1		1.4		1.3		2.7		0.89		1.8		1.8	
Copper	4.3		2.6		2.9		4.4		3.5		1.4		2.3		7.8	
Cyanide	0.47	U	0.52	U	0.5	U	0.27	U	0.36	U	0.41	U	0.49	U	0.47	U
Hexavalent Chromium	0.46	U	0.47	U	0.22	U	0.45	U	0.93	U	0.43	U	0.44	U	0.46	U
Iron	5070		3820		5250		6570		10700		3700		4760		5440	
Lead	19.1		15.2		37		27.9		8.7		23.5		9.3		10.5	
Magnesium	570		357		402		440		874		218		372		515	
Manganese	105		56.5		60.1		47.8		87.1		28		58.2		87.6	
Mercury	0.06	U	0.06	U	0.06	U	0.06	U	0.06	U	0.05	U	0.06	U	0.06	U
Nickel	3.4		2.4		3.2		3.3		5.1		2.8		3.3		3.7	
Potassium	324		252		241		369		409		183		259		283	
Selenium	0.65		0.46		0.18	U	0.2	U	0.21	U	0.18	U	0.27		0.21	U
Silver	0.13	U	0.28		0.15	U	0.15	U	0.15	U	0.14	U	0.15	U	0.16	
Sodium	392		260		293		273		439		189		277		378	
Thallium	0.66	U	0.68	U	0.73	U	0.75	U	0.72	U	0.68	U	0.71	U	0.71	U
Vanadium	11.4		8.6		12.6		12.6		19.7		7.1		9.3		11.1	
Zinc	15.9		21.6		12.9		18.3		15.1		5.3		12.6		26.1	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
1,2-Dichlorobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
1,3-Dichlorobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
1,4-Dichlorobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,2'-Oxybis(1-chloropropane)	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,4,5-Trichlorophenol	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
2,4,6-Trichlorophenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,4-Dichlorophenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,4-Dimethylphenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,4-Dinitrophenol	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
2,4-Dinitrotoluene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2,6-Dinitrotoluene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2-Chloronaphthalene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2-Chlorophenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2-Methylnaphthalene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2-Methylphenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
2-Nitroaniline	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
2-Nitrophenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
3,3'-Dichlorobenzidine	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
3-Nitroaniline	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	3WFF16-SS16		3WFF16-SS17		3WFF16-SS1		3WFF16-SS2		3WFF16-SS3		3WFF16-SS4		3WFF16-SS5		3WFF16-SS6	
Laboratory ID:																
Sample Date:	02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00		02/25/00	
Top Depth:	0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
Bottom Depth:	0.5		0.5		0.5		0.5		0.5		0.5		0.5		0.5	
Duplicate:																
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
4,6-Dinitro-2-methylphenol	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
4-Bromophenyl Phenyl Ether	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
4-Chloro-3-methylphenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
4-Chloroaniline	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
4-Chlorophenyl Phenyl Ether	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
4-Methylphenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
4-Nitroaniline	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
4-Nitrophenol	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
Acenaphthene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Acenaphthylene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Acetophenone	NA		NA		NA		NA		NA		NA		NA		NA	
Anthracene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Atrazine	NA		NA		NA		NA		NA		NA		NA		NA	
Benz(a)anthracene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Benzo(b)fluoranthene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Benzo(g,h,i)perylene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Benzo(k)fluoranthene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Bis(2-chloroethoxy)methane	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Bis(2-chloroethyl)ether	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Bis(2-ethylhexyl)phthalate	1400		980		2100		1600		1800		820		1000		640	
Butylbenzylphthalate	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Caprolactam	NA		NA		NA		NA		NA		NA		NA		NA	
Carbazole	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Chrysene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Di-n-butylphthalate	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Di-n-octylphthalate	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Dibenz(a,h)anthracene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Dibenzofuran	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Diethylphthalate	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Dimethylphthalate	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Fluoranthene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Fluorene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Hexachlorobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Hexachlorobutadiene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Hexachlorocyclopentadiene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Hexachloroethane	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Hmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Indeno(1,2,3-cd)pyrene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Isophorone	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Lmw Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
N-Nitroso-di-n-propylamine	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
N-Nitrosodiphenylamine (1)	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Naphthalene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Nitrobenzene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Pentachlorophenol	940	U	970	U	910	U	930	U	960	U	890	U	920	U	960	U
Phenanthrene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Phenol	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS16**		**3WFF16-SS17**		**3WFF16-SS1**		**3WFF16-SS2**		**3WFF16-SS3**		**3WFF16-SS4**		**3WFF16-SS5**		**3WFF16-SS6**	
Laboratory ID:																
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
Total Pah (sediment)	NA		NA		NA		NA		NA		NA		NA		NA	
Total Pah (soil)	380	U	390	U	360	U	370	U	380	U	350	U	370	U	380	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,1,2,2-Tetrachloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		NA		NA		NA		NA		NA		NA		NA	
1,1,2-Trichloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,1-Dichloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,1-Dichloroethene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromo-3-chloropropane	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dibromoethane	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,2-Dichloroethene (cis)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (Total)	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,2-Dichloroethene (trans)	NA		NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloropropane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA		NA	
2-Butanone	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
2-Hexanone	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
4-Methyl-2-pentanone	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Acetone	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Benzene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Bromodichloromethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Bromoform	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Bromomethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Carbon Disulfide	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Carbon Tetrachloride	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Chlorobenzene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Chloroethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Chloroform	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Chloromethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
cis-1,3-Dichloropropene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Cyclohexane	NA		NA		NA		NA		NA		NA		NA		NA	
Dibromochloromethane	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Dichlorodifluoromethane	NA		NA		NA		NA		NA		NA		NA		NA	
Ethylbenzene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Isopropylbenzene	NA		NA		NA		NA		NA		NA		NA		NA	
m,p-xylene	NA		NA		NA		NA		NA		NA		NA		NA	
Methyl Acetate	NA		NA		NA		NA		NA		NA		NA		NA	
Methyl Tert-butyl Ether (mtbe)	NA		NA		NA		NA		NA		NA		NA		NA	
Methylcyclohexane	NA		NA		NA		NA		NA		NA		NA		NA	
Methylene Chloride	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS16**		**3WFF16-SS17**		**3WFF16-SS1**		**3WFF16-SS2**		**3WFF16-SS3**		**3WFF16-SS4**		**3WFF16-SS5**		**3WFF16-SS6**	
Laboratory ID:																
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**		**0.5**	
Duplicate:																
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	NA		NA		NA		NA		NA		NA		NA		NA	
Styrene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Tetrachloroethene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Toluene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
trans-1,3-Dichloropropene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Trichloroethene	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Trichlorofluoromethane	NA		NA		NA		NA		NA		NA		NA		NA	
Vinyl Chloride	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
Xylene (Total)	12	U	12	U	11	U	11	U	12	U	11	U	11	U	12	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	12		3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
4,4'-DDE	310	D	3.5	J	36	U	3.7	U	4.2		3.5	U	3.7	U	3.8	U
4,4'-DDT	260	D	4.2		36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Aldrin	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Alpha-BHC	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Alpha-Chlordane	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Beta-BHC	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Delta-BHC	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Dieldrin	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Endosulfan I	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Endosulfan II	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Endosulfan Sulfate	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Endrin	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Endrin Aldehyde	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Endrin Ketone	3.8	U	3.9	U	36	U	3.7	U	3.8	U	3.5	U	3.7	U	3.8	U
Gamma-BHC (Lindane)	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Gamma-Chlordane	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Heptachlor	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Heptachlor Epoxide	1.9	U	1.9	U	18	U	1.8	U	1.9	U	1.8	U	1.8	U	1.9	U
Methoxychlor	19	U	19	U	180	U	18	U	19	U	18	U	18	U	19	U
Total Ddt Residues	582		7.7		36	U	3.7	U	4.2		3.5	U	3.7	U	3.8	U
Toxaphene	190	U	190	U	1800	U	180	U	190	U	180	U	180	U	190	U
Aroclor-1016	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
Aroclor-1221	76	U	77	U	730	U	74	U	77	U	70	U	73	U	76	U
Aroclor-1232	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
Aroclor-1242	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
Aroclor-1248	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
Aroclor-1254	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
Aroclor-1260	38	U	39	U	360	U	37	U	38	U	35	U	37	U	38	U
MISCELLANEOUS PARAMETERS																
% Solids	86.8		84.7		90.4		89.3		85.8		93.3		90		86.1	
Diesel Range Organics	11	Y	34	Y	590	Y	270	Y	4.4	JY	2.7	JY	3.5	JY	5.9	JY
Gasoline Range Organics	63	Z	30	JZ	55	U	56	U	58	U	54	U	56	U	58	U
pH (s.u.)	NA		NA		NA		NA		NA		NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA		NA		NA		NA		NA		NA	

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS7**		**3WFF16-SS8**		**3WFF16-SS9**	
Laboratory ID:						
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**	
Duplicate:						
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3560		3760		8280	
Antimony	0.73	U	0.78	U	0.78	U
Arsenic	0.98		0.63	U	1.6	
Barium	14.3		15		22.9	
Beryllium	0.1	U	0.11	U	0.15	
Cadmium	0.1	U	0.11	U	0.11	U
Calcium	231		342		213	
Chromium	4		4.5		9.3	
Cobalt	1		0.84		1.3	
Copper	1.9		2.9		3.6	
Cyanide	0.27	U	0.5	U	0.54	U
Hexavalent Chromium	0.44	U	0.46	U	0.44	U
Iron	2720		3130		6100	
Lead	5.4		12		60.5	
Magnesium	269		274		507	
Manganese	55.5		43.2		48.5	
Mercury	0.06	U	0.06	U	0.05	U
Nickel	1.5		2.6		4.1	
Potassium	204		220		437	
Selenium	0.2	U	0.2	U	0.18	U
Silver	0.14	U	0.48		0.15	U
Sodium	187		165		296	
Thallium	0.67	U	0.73	U	0.72	U
Vanadium	5.7		9.2		15.4	
Zinc	11		14.1		13.5	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	NA		NA		NA	
1,2,4-Trichlorobenzene	360	U	380	U	370	U
1,2-Dichlorobenzene	360	U	380	U	370	U
1,3-Dichlorobenzene	360	U	380	U	370	U
1,4-Dichlorobenzene	360	U	380	U	370	U
2,2'-Oxybis(1-chloropropane)	360	U	380	U	370	U
2,4,5-Trichlorophenol	910	U	940	U	920	U
2,4,6-Trichlorophenol	360	U	380	U	370	U
2,4-Dichlorophenol	360	U	380	U	370	U
2,4-Dimethylphenol	360	U	380	U	370	U
2,4-Dinitrophenol	910	U	940	U	920	U
2,4-Dinitrotoluene	360	U	380	U	370	U
2,6-Dinitrotoluene	360	U	380	U	370	U
2-Chloronaphthalene	360	U	380	U	370	U
2-Chlorophenol	360	U	380	U	370	U
2-Methylnaphthalene	360	U	380	U	370	U
2-Methylphenol	360	U	380	U	370	U
2-Nitroaniline	910	U	940	U	920	U
2-Nitrophenol	360	U	380	U	370	U
3,3'-Dichlorobenzidine	360	U	380	U	370	U
3-Nitroaniline	910	U	940	U	920	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS7**		**3WFF16-SS8**		**3WFF16-SS9**	
Laboratory ID:						
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**	
Duplicate:						
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4,6-Dinitro-2-methylphenol	910	U	940	U	920	U
4-Bromophenyl Phenyl Ether	360	U	380	U	370	U
4-Chloro-3-methylphenol	360	U	380	U	370	U
4-Chloroaniline	360	U	380	U	370	U
4-Chlorophenyl Phenyl Ether	360	U	380	U	370	U
4-Methylphenol	360	U	380	U	370	U
4-Nitroaniline	910	U	940	U	920	U
4-Nitrophenol	910	U	940	U	920	U
Acenaphthene	360	U	380	U	370	U
Acenaphthylene	360	U	380	U	370	U
Acetophenone	NA		NA		NA	
Anthracene	360	U	380	U	370	U
Atrazine	NA		NA		NA	
Benz(a)anthracene	360	U	380	U	370	U
Benzaldehyde	NA		NA		NA	
Benzo(a)pyrene	360	U	380	U	910	
Benzo(b)fluoranthene	360	U	380	U	370	U
Benzo(g,h,i)perylene	360	U	380	U	430	
Benzo(k)fluoranthene	360	U	380	U	370	U
Bis(2-chloroethoxy)methane	360	U	380	U	370	U
Bis(2-chloroethyl)ether	360	U	380	U	370	U
Bis(2-ethylhexyl)phthalate	940		560		2800	
Butylbenzylphthalate	360	U	380	U	370	U
Caprolactam	NA		NA		NA	
Carbazole	360	U	380	U	370	U
Chrysene	360	U	380	U	390	
Di-n-butylphthalate	360	U	380	U	370	U
Di-n-octylphthalate	360	U	380	U	370	U
Dibenz(a,h)anthracene	360	U	380	U	370	U
Dibenzofuran	360	U	380	U	370	U
Diethylphthalate	360	U	380	U	370	U
Dimethylphthalate	360	U	380	U	370	U
Fluoranthene	360	U	380	U	370	U
Fluorene	360	U	380	U	370	U
Hexachlorobenzene	360	U	380	U	370	U
Hexachlorobutadiene	360	U	380	U	370	U
Hexachlorocyclopentadiene	360	U	380	U	370	U
Hexachloroethane	360	U	380	U	370	U
Hmw Pah (sediment)	NA		NA		NA	
Indeno(1,2,3-cd)pyrene	360	U	380	U	140	J
Isophorone	360	U	380	U	370	U
Lmw Pah (sediment)	NA		NA		NA	
N-Nitroso-di-n-propylamine	360	U	380	U	370	U
N-Nitrosodiphenylamine (1)	360	U	380	U	370	U
Naphthalene	360	U	380	U	370	U
Nitrobenzene	360	U	380	U	370	U
Pentachlorophenol	910	U	940	U	920	U
Phenanthrene	360	U	380	U	370	U
Phenol	360	U	380	U	370	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS7**		**3WFF16-SS8**		**3WFF16-SS9**	
Laboratory ID:						
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**	
Duplicate:						
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
Pyrene	360	U	380	U	370	U
Total Pah (sediment)	NA		NA		NA	
Total Pah (soil)	360	U	380	U	1870	
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	11	U	11	U	11	U
1,1,2,2-Tetrachloroethane	11	U	11	U	11	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		NA		NA	
1,1,2-Trichloroethane	11	U	11	U	11	U
1,1-Dichloroethane	11	U	11	U	11	U
1,1-Dichloroethene	11	U	11	U	11	U
1,2,4-Trichlorobenzene	NA		NA		NA	
1,2,4-Trimethylbenzene	NA		NA		NA	
1,2-Dibromo-3-chloropropane	NA		NA		NA	
1,2-Dibromoethane	NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA	
1,2-Dichloroethane	11	U	11	U	11	U
1,2-Dichloroethene (cis)	NA		NA		NA	
1,2-Dichloroethene (Total)	11	U	11	U	11	U
1,2-Dichloroethene (trans)	NA		NA		NA	
1,2-Dichloropropane	11	U	11	U	11	U
1,3,5-Trimethylbenzene	NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA	
2-Butanone	11	U	11	U	11	U
2-Hexanone	11	U	11	U	11	U
4-Methyl-2-pentanone	11	U	11	U	11	U
Acetone	11	U	11	U	11	U
Benzene	11	U	11	U	11	U
Bromodichloromethane	11	U	11	U	11	U
Bromoform	11	U	11	U	11	U
Bromomethane	11	U	11	U	11	U
Carbon Disulfide	11	U	11	U	11	U
Carbon Tetrachloride	11	U	11	U	11	U
Chlorobenzene	11	U	11	U	11	U
Chloroethane	11	U	11	U	11	U
Chloroform	11	U	11	U	11	U
Chloromethane	11	U	11	U	11	U
cis-1,3-Dichloropropene	11	U	11	U	11	U
Cyclohexane	NA		NA		NA	
Dibromochloromethane	11	U	11	U	11	U
Dichlorodifluoromethane	NA		NA		NA	
Ethylbenzene	11	U	11	U	11	U
Isopropylbenzene	NA		NA		NA	
m,p-xylene	NA		NA		NA	
Methyl Acetate	NA		NA		NA	
Methyl Tert-butyl Ether (mtbe)	NA		NA		NA	
Methylcyclohexane	NA		NA		NA	
Methylene Chloride	11	U	11	U	11	U

Appendix A, Table 1
Data Summary of Waste Oil Dump Surface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**3WFF16-SS7**		**3WFF16-SS8**		**3WFF16-SS9**	
Laboratory ID:						
Sample Date:	**02/25/00**		**02/25/00**		**02/25/00**	
Top Depth:	**0.0**		**0.0**		**0.0**	
Bottom Depth:	**0.5**		**0.5**		**0.5**	
Duplicate:						
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
o-xylene	NA		NA		NA	
Styrene	11	U	11	U	11	U
Tetrachloroethene	11	U	11	U	11	U
Toluene	11	U	11	U	11	U
trans-1,3-Dichloropropene	11	U	11	U	11	U
Trichloroethene	11	U	11	U	11	U
Trichlorofluoromethane	NA		NA		NA	
Vinyl Chloride	11	U	11	U	11	U
Xylene (Total)	11	U	11	U	11	U
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	3.7	U	3.8	U	36	U
4,4'-DDE	3.7	U	3.4	J	36	U
4,4'-DDT	3.7	U	4.5		36	U
Aldrin	1.8	U	1.9	U	18	U
Alpha-BHC	1.8	U	1.9	U	18	U
Alpha-Chlordane	1.8	U	1.9	U	18	U
Beta-BHC	1.8	U	1.9	U	18	U
Delta-BHC	1.8	U	1.9	U	18	U
Dieldrin	3.7	U	3.8	U	36	U
Endosulfan I	1.8	U	1.9	U	18	U
Endosulfan II	3.7	U	3.8	U	36	U
Endosulfan Sulfate	3.7	U	3.8	U	36	U
Endrin	3.7	U	3.8	U	36	U
Endrin Aldehyde	3.7	U	3.8	U	36	U
Endrin Ketone	3.7	U	3.8	U	36	U
Gamma-BHC (Lindane)	1.8	U	1.9	U	18	U
Gamma-Chlordane	1.8	U	1.9	U	18	U
Heptachlor	1.8	U	1.9	U	18	U
Heptachlor Epoxide	1.8	U	1.9	U	18	U
Methoxychlor	18	U	19	U	180	U
Total Ddt Residues	3.7	U	7.9		36	U
Toxaphene	180	U	190	U	1800	U
Aroclor-1016	37	U	38	U	360	U
Aroclor-1221	73	U	75	U	730	U
Aroclor-1232	37	U	38	U	360	U
Aroclor-1242	37	U	38	U	360	U
Aroclor-1248	37	U	38	U	360	U
Aroclor-1254	37	U	38	U	360	U
Aroclor-1260	37	U	38	U	360	U
MISCELLANEOUS PARAMETERS						
% Solids	90.5		87.9		90.1	
Diesel Range Organics	98	Y	56	Y	520	Y
Gasoline Range Organics	55	U	57	U	56	U
pH (s.u.)	NA		NA		NA	
TOC By Lloyd Kahn (mg/kg)	NA		NA		NA	

A2

ANALYTICAL RESULTS

SUBSURFACE SOILS

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	2WFF16-SB1S2		2WFF16-SB1S2-DUP		2WFF16-SB2S2		2WFF16-SB3S2		2WFF16-SB4S2		WOD-SU-101-1315		WOD-SU-102-1517	
Laboratory ID:											B0221-03A		B0221-05A	
Sample Date:	05/07/98		05/07/98		05/07/98		05/07/98		05/07/98		02/06/03		02/06/03	
Duplicate:	2WFF16-SB1S2-DUP		2WFF16-SB1S2											
Top Depth:	23.0		23.0		23.0		18.0		17.0		13.0		15.0	
Bottom Depth:	24.0		24.0		24.0		20.0		19.0		15.0		17.0	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
INORGANICS	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Aluminum	917		2930	J	1070		2180		1220	J	5080		2200	
Antimony	0.31	U	0.33	U	0.3	U	0.32	U	0.32	U	0.66	B	0.14	UL
Arsenic	0.37	U	0.38	U	0.35	U	0.37	U	0.38	U	2		1.1	
Barium	2.9		5.9		2.8		4.1		3.7		21.5		8.9	
Beryllium	0.04	U	0.04	U	0.04	U	0.04	U	0.04	U	0.25	L	0.13	L
Cadmium	0.05	U	0.06	U	0.05	U	0.06	U	0.06	U	0.033	U	0.032	U
Calcium	32.5	B	148		23.4	B	102		99.9		219		72.3	
Chromium	1.4		3.1		1.3		2.2		1.9		9.5		2.3	
Cobalt	0.11	U	0.11	U	0.13		0.13		0.11	U	1.6	L	0.24	B
Copper	0.22	U	0.24	B	0.24	B	0.22	B	0.23	U	2	B	0.48	B
Cyanide	0.42	U	0.44	U	0.39	U	0.59		0.48	U	NA		NA	
Hexavalent Chromium	0.23	R	0.22	R	0.21	R	0.21	R	0.23	R	NA		NA	
Iron	516		1520		500		1690		828	J	2710		1100	
Lead	2.6	B	4.4		4.9		2	B	2.3	B	1.9		6.7	
Magnesium	43.2		167		43.4		100		68.6		219		57.7	
Manganese	4.7		7.8		2.3		4.7		3.9		96.2		21	
Mercury	0.04	U	0.06	U	0.05	U	0.05	U	0.06	U	0.017	U	0.014	U
Nickel	0.18	U	0.19	U	0.18	U	0.19	U	0.19	U	1.7		0.53	B
Potassium	85.8	B	168		100	B	136		107	B	201		70.9	B
Selenium	0.31	U	0.33	U	0.35	K	0.32	U	0.34	K	0.42	U	0.41	U
Silver	0.11	U	0.11	U	0.11	U	0.11	U	0.11	U	0.093	UL	0.091	UL
Sodium	109		250		70.2		132		83		16.3	B	3.8	U
Thallium	0.29	U	0.31	U	0.28	U	0.3	U	0.3	U	0.14	U	0.14	U
Vanadium	1.8		5.4		2		3.4		2.7		5.5	L	3.7	L
Zinc	0.41	B	1.2	B	0.56	B	0.87	B	0.78	B	3.7	L	0.87	B
SEMIVOLATILES	ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg		ug/kg	
1,1-Biphenyl	NA		NA		NA		NA		NA		NA		NA	
1,2,4-Trichlorobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
1,2-Dichlorobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
1,3-Dichlorobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
1,4-Dichlorobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,2'-Oxybis(1-chloropropane)	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,4,5-Trichlorophenol	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
2,4,6-Trichlorophenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,4-Dichlorophenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,4-Dimethylphenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,4-Dinitrophenol	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
2,4-Dinitrotoluene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2,6-Dinitrotoluene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2-Chloronaphthalene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2-Chlorophenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2-Methylnaphthalene	16000	J	22000	J	29000	J	370	UJ	310	J	360	U	330	U
2-Methylphenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
2-Nitroaniline	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
2-Nitrophenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
3,3'-Dichlorobenzidine	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
3-Nitroaniline	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
4,6-Dinitro-2-methylphenol	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
4-Bromophenyl Phenyl Ether	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**2WFF16-SB1S2**		**2WFF16-SB1S2-DUP**		**2WFF16-SB2S2**		**2WFF16-SB3S2**		**2WFF16-SB4S2**		**WOD-SU-101-1315**		**WOD-SU-102-1517**	
Laboratory ID:											**B0221-03A**		**B0221-05A**	
Sample Date:	**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**02/06/03**		**02/06/03**	
Duplicate:	**2WFF16-SB1S2-DUP**		**2WFF16-SB1S2**											
Top Depth:	**23.0**		**23.0**		**23.0**		**18.0**		**17.0**		**13.0**		**15.0**	
Bottom Depth:	**24.0**		**24.0**		**24.0**		**20.0**		**19.0**		**15.0**		**17.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4-Chloro-3-methylphenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
4-Chloroaniline	380	UJ	390	UJ	3700	UJ	370	UJ	400	R	360	U	330	U
4-Chlorophenyl Phenyl Ether	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
4-Methylphenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
4-Nitroaniline	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
4-Nitrophenol	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
Acenaphthene	380	UJ	390	UJ	1800	J	370	UJ	54	J	360	U	330	U
Acenaphthylene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Acetophenone	NA		NA		NA		NA		NA		NA		NA	
Anthracene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Atrazine	NA		NA		NA		NA		NA		NA		NA	
Benz(a)anthracene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzaldehyde	NA		NA		NA		NA		NA		NA		NA	
Benzo(a)pyrene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzo(b)fluoranthene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzo(g,h,i)perylene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Benzo(k)fluoranthene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Bis(2-chloroethoxy)methane	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Bis(2-chloroethyl)ether	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Bis(2-ethylhexyl)phthalate	2900	B	4600	B	5500	B	360	B	940	B	360	U	330	U
Butylbenzylphthalate	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Caprolactam	NA		NA		NA		NA		NA		NA		NA	
Carbazole	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Chrysene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Di-n-butylphthalate	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Di-n-octylphthalate	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Dibenz(a,h)anthracene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Dibenzofuran	380	UJ	390	UJ	1100	J	370	UJ	400	UJ	360	U	330	U
Diethylphthalate	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Dimethylphthalate	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Fluoranthene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Fluorene	380	UJ	2100	J	2800	J	370	UJ	100	J	360	U	330	U
Hexachlorobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Hexachlorobutadiene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Hexachlorocyclopentadiene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	UJ	330	UJ
Hexachloroethane	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Indeno(1,2,3-cd)pyrene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Isophorone	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
N-Nitroso-di-n-propylamine	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
N-Nitrosodiphenylamine (1)	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Naphthalene	2900	J	390	UJ	7700	J	370	UJ	400	UJ	360	U	330	U
Nitrobenzene	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Pentachlorophenol	950	UJ	970	UJ	9300	UJ	930	UJ	990	UJ	740	U	680	U
Phenanthrene	4100	J	5700	J	7800	J	43	J	290	J	360	U	330	U
Phenol	380	UJ	390	UJ	3700	UJ	370	UJ	400	UJ	360	U	330	U
Pyrene	230	J	290	J	580	J	370	UJ	400	UJ	360	U	330	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,1,2,2-Tetrachloroethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,1,2-Trichloro-1,2,2-trifluoroethane	NA		NA		NA		NA		NA		12	U	11	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	2WFF16-SB1S2		2WFF16-SB1S2-DUP		2WFF16-SB2S2		2WFF16-SB3S2		2WFF16-SB4S2		WOD-SU-101-1315		WOD-SU-102-1517	
Laboratory ID:											B0221-03A		B0221-05A	
Sample Date:	05/07/98		05/07/98		05/07/98		05/07/98		05/07/98		02/06/03		02/06/03	
Duplicate:	2WFF16-SB1S2-DUP		2WFF16-SB1S2											
Top Depth:	23.0		23.0		23.0		18.0		17.0		13.0		15.0	
Bottom Depth:	24.0		24.0		24.0		20.0		19.0		15.0		17.0	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
1,1,2-Trichloroethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,1-Dichloroethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,1-Dichloroethene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		12	U	11	U
1,2,4-Trimethylbenzene	NA		NA		NA		NA		NA		12	U	42	
1,2-Dibromo-3-chloropropane	NA		NA		NA		NA		NA		12	U	11	U
1,2-Dibromoethane	NA		NA		NA		NA		NA		12	U	11	U
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		12	U	11	U
1,2-Dichloroethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,2-Dichloroethene (cis)	NA		NA		NA		NA		NA		12	U	11	U
1,2-Dichloroethene (Total)	110	U	120	U	110	UJ	11	U	120	U	NA		NA	
1,2-Dichloroethene (trans)	NA		NA		NA		NA		NA		12	U	11	U
1,2-Dichloropropane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
1,3,5-Trimethylbenzene	NA		NA		NA		NA		NA		12	U	93	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		12	U	11	U
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		12	U	11	U
2-Butanone	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
2-Hexanone	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
4-Methyl-2-pentanone	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Acetone	110	U	120	U	110	UJ	11	U	120	U	15	B	15	B
Benzene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Bromodichloromethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Bromoform	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Bromomethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Carbon Disulfide	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Carbon Tetrachloride	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Chlorobenzene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Chloroethane	56	K	120	U	110	J	11	U	120	U	12	U	13	
Chloroform	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Chloromethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
cis-1,3-Dichloropropene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Cyclohexane	NA		NA		NA		NA		NA		12	U	11	U
Dibromochloromethane	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Dichlorodifluoromethane	NA		NA		NA		NA		NA		12	U	11	U
Ethylbenzene	1200	J	1000		2200	J	11	U	120	U	12	U	11	U
Isopropylbenzene	NA		NA		NA		NA		NA		12	U	11	U
m,p-xylene	NA		NA		NA		NA		NA		12	U	10	J
Methyl Acetate	NA		NA		NA		NA		NA		12	U	11	U
Methyl Tert-butyl Ether (mtbe)	NA		NA		NA		NA		NA		12	U	11	U
Methylcyclohexane	NA		NA		NA		NA		NA		12	U	11	U
Methylene Chloride	110	U	120	U	110	UJ	11	U	120	U	4	B	8	B
o-xylene	NA		NA		NA		NA		NA		12	U	9	J
Styrene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Tetrachloroethene	320		81	J	110	UJ	11	U	120	U	12	U	3	J
Toluene	1400		320		1700	J	11	U	120	U	12	U	11	U
trans-1,3-Dichloropropene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Trichloroethene	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Trichlorofluoromethane	NA		NA		NA		NA		NA		12	U	11	U
Vinyl Chloride	110	U	120	U	110	UJ	11	U	120	U	12	U	11	U
Xylene (Total)	9200	J	6600	J	13000	J	11	U	64	J	12	U	20	

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**2WFF16-SB1S2**		**2WFF16-SB1S2-DUP**		**2WFF16-SB2S2**		**2WFF16-SB3S2**		**2WFF16-SB4S2**		**WOD-SU-101-1315**		**WOD-SU-102-1517**	
Laboratory ID:											**B0221-03A**		**B0221-05A**	
Sample Date:	**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**05/07/98**		**02/06/03**		**02/06/03**	
Duplicate:	**2WFF16-SB1S2-DUP**		**2WFF16-SB1S2**											
Top Depth:	**23.0**		**23.0**		**23.0**		**18.0**		**17.0**		**13.0**		**15.0**	
Bottom Depth:	**24.0**		**24.0**		**24.0**		**20.0**		**19.0**		**15.0**		**17.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	21		26		3.7	U	3.8	U	4	U	NA		NA	
4,4'-DDE	1.5	J	1.9	J	3.7	U	3.8	U	4	U	NA		NA	
4,4'-DDT	8.8		4.7		3.7	U	3.8	U	4	U	NA		NA	
Aldrin	2.7	J	3.1	J	1.9	U	1.9	U	4.8	J	NA		NA	
Alpha-BHC	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Alpha-Chlordane	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Aroclor-1016	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Aroclor-1221	76	U	78	U	75	U	76	U	80	U	37	U	34	U
Aroclor-1232	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Aroclor-1242	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Aroclor-1248	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Aroclor-1254	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Aroclor-1260	38	U	39	U	37	U	38	U	40	U	37	U	34	U
Beta-BHC	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Delta-BHC	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Dieldrin	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Endosulfan I	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Endosulfan II	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Endosulfan Sulfate	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Endrin	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Endrin Aldehyde	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Endrin Ketone	3.8	U	3.9	U	3.7	U	3.8	U	4	U	NA		NA	
Gamma-BHC (Lindane)	10	JN	11	J	1.9	U	1.9	U	2	U	NA		NA	
Gamma-Chlordane	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Heptachlor	1.9	U	1.9	U	1.9	U	1.9	U	2	U	NA		NA	
Heptachlor Epoxide	1.9	U	1.2	J	1.9	U	1.9	U	1.2	J	NA		NA	
Methoxychlor	19	U	19	U	19	U	19	U	20	U	NA		NA	
Toxaphene	190	U	190	U	190	U	190	U	200	U	NA		NA	

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-103-1113		WOD-SU-104-1012		WOD-SU-105-0507		WOD-SU-106-0608		WOD-SU-107-0608		WOD-SU-108-0608		WOD-SU-109-0608	
Laboratory ID:	**B0221-07A**		**B0221-09A**		**B0257-05A**		**B0239-03A**		**B0239-05A**		**B0239-07A**		**B0257-03A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**		**02/11/03**	
Duplicate:														
Top Depth:	**11.0**		**10.0**		**5.0**		**6.0**		**6.0**		**6.0**		**6.0**	
Bottom Depth:	**13.0**		**12.0**		**7.0**		**8.0**		**8.0**		**8.0**		**8.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3180		1300		11700		2100		2060		1470		968	
Antimony	0.4	B	0.13	UL	0.16	UL	0.15	UL	0.15	UL	0.15	UL	0.15	U
Arsenic	1.1		0.81		2.8	L	1.1	L	1.3	L	1.3	L	0.87	
Barium	12.3		8.8		27.5		16		8.9		20.6		4.7	
Beryllium	0.2	L	0.13	L	0.24		0.098		0.12		0.12		0.029	
Cadmium	0.034	U	0.031	U	0.037	UL	0.034	UL	0.036	UL	0.034	UL	0.034	U
Calcium	29.2	B	31.8	B	116		77.5		56.6		70.6		1000	
Chromium	3.1		1.7		9.2		1.6		2.5		2.3		1.2	
Cobalt	2	L	0.3	L	3.2	K	0.25		0.26		0.1		0.087	
Copper	1.2	B	0.37	B	2.8		0.6	B	0.61	B	0.6	B	0.2	U
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	2090		760		6640		1210		1460		1670		606	
Lead	1.4		0.87		3.7		0.57	L	0.8	L	0.93	L	0.45	
Magnesium	234		75.9		572		58.9		78.3		43.7		51.7	
Manganese	44.5		4		64.2		8.1		13		7.4		5.7	
Mercury	0.017	U	0.017	U	0.018	U	0.014	U	0.018	U	0.018	U	0.016	U
Nickel	2		0.62		5.5		0.72		0.8		0.44		0.43	
Potassium	137		57.3	B	327		66.1	B	73.4	B	43.3	B	60.1	B
Selenium	0.44	U	0.39	U	0.48	UL	0.44	UL	0.46	UL	0.44	UL	0.44	U
Silver	0.098	UL	0.088	UL	0.35	K	0.098	U	0.1	U	0.098	U	0.098	U
Sodium	4.8	B	3.6	U	25	B	8.7	B	4.9	B	4.1	U	39.6	B
Thallium	0.15	U	0.13	U	0.16	U	0.15	UL	0.15	UL	0.18	L	0.15	U
Vanadium	4.4	L	2.2	L	12.9		2		3.1		2.1		1.2	
Zinc	3.4	L	1.1	B	8.4	L	1.9		1.6		1.1		0.76	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	NA		NA		360	U	340	U	360	U	350	U	350	U
1,2,4-Trichlorobenzene	360	UJ	340	U	NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	360	UJ	340	U	NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	360	UJ	340	U	NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	360	UJ	340	U	NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
2,4,5-Trichlorophenol	740	U	690	U	900	U	870	U	900	U	880	U	880	U
2,4,6-Trichlorophenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
2,4-Dichlorophenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
2,4-Dimethylphenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
2,4-Dinitrophenol	740	U	690	U	900	U	870	U	900	U	880	U	880	U
2,4-Dinitrotoluene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
2,6-Dinitrotoluene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
2-Chloronaphthalene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
2-Chlorophenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
2-Methylnaphthalene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
2-Methylphenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
2-Nitroaniline	740	UJ	690	U	900	U	870	U	900	U	880	U	880	U
2-Nitrophenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
3,3'-Dichlorobenzidine	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
3-Nitroaniline	740	UJ	690	U	900	U	870	U	900	U	880	U	880	U
4,6-Dinitro-2-methylphenol	740	U	690	U	900	U	870	U	900	U	880	U	880	U
4-Bromophenyl Phenyl Ether	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-103-1113**		**WOD-SU-104-1012**		**WOD-SU-105-0507**		**WOD-SU-106-0608**		**WOD-SU-107-0608**		**WOD-SU-108-0608**		**WOD-SU-109-0608**	
Laboratory ID:	**B0221-07A**		**B0221-09A**		**B0257-05A**		**B0239-03A**		**B0239-05A**		**B0239-07A**		**B0257-03A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**		**02/11/03**	
Duplicate:														
Top Depth:	**11.0**		**10.0**		**5.0**		**6.0**		**6.0**		**6.0**		**6.0**	
Bottom Depth:	**13.0**		**12.0**		**7.0**		**8.0**		**8.0**		**8.0**		**8.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4-Chloro-3-methylphenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
4-Chloroaniline	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
4-Chlorophenyl Phenyl Ether	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
4-Methylphenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
4-Nitroaniline	740	UJ	690	U	900	UJ	870	U	900	U	880	U	880	UJ
4-Nitrophenol	740	U	690	U	900	U	870	U	900	U	880	U	880	U
Acenaphthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Acenaphthylene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Acetophenone	NA		NA		360	U	340	U	360	U	350	U	350	U
Anthracene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Atrazine	NA		NA		360	U	340	U	360	U	350	U	350	U
Benz(a)anthracene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzaldehyde	NA		NA		360	UJ	340	U	360	U	350	U	350	UJ
Benzo(a)pyrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzo(b)fluoranthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzo(g,h,i)perylene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Benzo(k)fluoranthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Bis(2-chloroethoxy)methane	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Bis(2-chloroethyl)ether	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Bis(2-ethylhexyl)phthalate	360	UJ	37	J	360	U	340	U	360	U	350	U	350	U
Butylbenzylphthalate	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Caprolactam	NA		NA		360	U	340	U	360	U	350	U	350	U
Carbazole	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Chrysene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Di-n-butylphthalate	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Di-n-octylphthalate	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Dibenz(a,h)anthracene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Dibenzofuran	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Diethylphthalate	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Dimethylphthalate	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Fluoranthene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Fluorene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Hexachlorobenzene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Hexachlorobutadiene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Hexachlorocyclopentadiene	360	UJ	340	UJ	360	U	340	U	360	U	350	U	350	U
Hexachloroethane	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Indeno(1,2,3-cd)pyrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Isophorone	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
N-Nitroso-di-n-propylamine	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
N-Nitrosodiphenylamine (1)	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Naphthalene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Nitrobenzene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Pentachlorophenol	740	U	690	U	900	U	870	U	900	U	880	U	880	U
Phenanthrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
Phenol	360	U	340	U	360	U	340	U	360	U	350	U	350	U
Pyrene	360	UJ	340	U	360	U	340	U	360	U	350	U	350	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,1,2,2-Tetrachloroethane	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-103-1113		WOD-SU-104-1012		WOD-SU-105-0507		WOD-SU-106-0608		WOD-SU-107-0608		WOD-SU-108-0608		WOD-SU-109-0608	
Laboratory ID:	**B0221-07A**		**B0221-09A**		**B0257-05A**		**B0239-03A**		**B0239-05A**		**B0239-07A**		**B0257-03A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**		**02/11/03**	
Duplicate:														
Top Depth:	**11.0**		**10.0**		**5.0**		**6.0**		**6.0**		**6.0**		**6.0**	
Bottom Depth:	**13.0**		**12.0**		**7.0**		**8.0**		**8.0**		**8.0**		**8.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
1,1,2-Trichloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,1-Dichloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,1-Dichloroethene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,2,4-Trichlorobenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,2,4-Trimethylbenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,2-Dibromo-3-chloropropane	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,2-Dibromoethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,2-Dichlorobenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,2-Dichloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,2-Dichloroethene (cis)	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,2-Dichloropropane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
1,3,5-Trimethylbenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,3-Dichlorobenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
1,4-Dichlorobenzene	11	U	11	UR	10	UJ	10	U	12	U	12	U	13	U
2-Butanone	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
2-Hexanone	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
4-Methyl-2-pentanone	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Acetone	12	B	18	B	8	B	10	U	12	U	16	B	11	B
Benzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Bromodichloromethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Bromoform	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Bromomethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Carbon Disulfide	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Carbon Tetrachloride	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Chlorobenzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Chloroethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Chloroform	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Chloromethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
cis-1,3-Dichloropropene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Cyclohexane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Dibromochloromethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Dichlorodifluoromethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Ethylbenzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Isopropylbenzene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
m,p-xylene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Methyl Acetate	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Methyl Tert-butyl Ether (mtbe)	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Methylcyclohexane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Methylene Chloride	3	B	5	B	2	B	2	B	4	B	6	B	4	B
o-xylene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Styrene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Tetrachloroethene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Toluene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
trans-1,3-Dichloropropene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Trichloroethene	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Trichlorofluoromethane	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Vinyl Chloride	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U
Xylene (Total)	11	U	11	UJ	10	UJ	10	U	12	U	12	U	13	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-103-1113**		**WOD-SU-104-1012**		**WOD-SU-105-0507**		**WOD-SU-106-0608**		**WOD-SU-107-0608**		**WOD-SU-108-0608**		**WOD-SU-109-0608**	
Laboratory ID:	**B0221-07A**		**B0221-09A**		**B0257-05A**		**B0239-03A**		**B0239-05A**		**B0239-07A**		**B0257-03A**	
Sample Date:	**02/06/03**		**02/06/03**		**02/11/03**		**02/10/03**		**02/10/03**		**02/10/03**		**02/11/03**	
Duplicate:														
Top Depth:	**11.0**		**10.0**		**5.0**		**6.0**		**6.0**		**6.0**		**6.0**	
Bottom Depth:	**13.0**		**12.0**		**7.0**		**8.0**		**8.0**		**8.0**		**8.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1221	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1232	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1242	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1248	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1254	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Aroclor-1260	37	U	35	U	36	U	36	U	36	U	35	U	35	U
Beta-BHC	NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA	

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-110-0204		WOD-SU-111-0507		WOD-SU-112-0204		WOD-SU-113-0406		WOD-SU-114-0406		WOD-SU-115-0305		WOD-SU-116-0204	
Laboratory ID:	**B0257-08A**		**B0257-11A**		**B0257-13A**		**B0257-15A**		**B0257-17A**		**B0258-03A**		**B0258-05A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**		**02/12/03**	
Duplicate:														
Top Depth:	**2.0**		**5.0**		**2.0**		**4.0**		**4.0**		**3.0**		**2.0**	
Bottom Depth:	**4.0**		**7.0**		**4.0**		**6.0**		**6.0**		**5.0**		**4.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	4100		47600		1230		613		1980		1160		4870	
Antimony	0.15	U	18.3	L	0.14	U	0.14	U	0.13	U	0.24	B	0.17	UL
Arsenic	2.1		11.9	L	0.9		0.46		1.3		2.2		2	
Barium	13.3		983		3.4		4.1		4.2		7.9		20.9	
Beryllium	0.11		0.12		0.034		0.024	U	0.058		0.12		0.2	
Cadmium	0.035	U	23.4	L	0.033	U	0.033	U	0.031	U	0.54		0.039	U
Calcium	12	U	55400		22.4		11.3	U	10.8	U	24.4		53.8	
Chromium	3.9		78.6		1.9		0.78		2		2.9		3.1	
Cobalt	0.73		6.3	K	0.62		0.22		0.29		0.24		4.5	
Copper	1.1		3040		0.73		0.31		1.1		1.5	B	1.6	B
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	2570		127000		1030		672		3000		1700		2030	
Lead	2.4		1100		3		0.78		2.6		1		2.6	
Magnesium	197		3470		89.8		42.8		74.5		49.5		156	
Manganese	30.4		1100		30.3		5		6.7		9.3		341	
Mercury	0.016	U	0.18		0.017	U	0.018	U	0.019	U	0.016	U	0.019	U
Nickel	1.3		56.8		0.59		0.3	B	0.49		0.43		1.7	
Potassium	161	B	1830	K	70.6	B	59.5	B	106	B	45.9	B	126	
Selenium	0.45	U	0.5	UL	0.42	U	0.42	U	0.4	U	0.41	U	0.5	U
Silver	0.2		389		0.11		0.094	U	0.18		0.091	U	0.11	U
Sodium	8	B	1060	K	3.9	U	3.9	U	3.7	U	6	B	5.9	B
Thallium	0.15	U	3.5	K	0.14	U	0.14	U	0.13	U	0.14	U	0.17	U
Vanadium	5.7		92		2.7		1.1		6.1		2.6		4.5	
Zinc	4.2		3550		2.7		0.75		1.5		2.6	B	5	B
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	350	U	400	U	340	U	350	U	360	U	350	U	380	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2,4,5-Trichlorophenol	880	U	1000	U	870	U	880	U	910	U	880	U	960	U
2,4,6-Trichlorophenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2,4-Dichlorophenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2,4-Dimethylphenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2,4-Dinitrophenol	880	U	1000	U	870	U	880	U	910	U	880	U	960	U
2,4-Dinitrotoluene	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2,6-Dinitrotoluene	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2-Chloronaphthalene	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2-Chlorophenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2-Methylnaphthalene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
2-Methylphenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
2-Nitroaniline	880	U	1000	U	870	U	880	UJ	910	U	880	U	960	U
2-Nitrophenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
3,3'-Dichlorobenzidine	350	U	400	U	340	U	350	U	360	U	350	U	380	U
3-Nitroaniline	880	U	1000	U	870	U	880	U	910	U	880	UJ	960	UJ
4,6-Dinitro-2-methylphenol	880	U	1000	U	870	U	880	U	910	U	880	U	960	U
4-Bromophenyl Phenyl Ether	350	U	400	U	340	U	350	UJ	360	U	350	U	380	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-110-0204**		**WOD-SU-111-0507**		**WOD-SU-112-0204**		**WOD-SU-113-0406**		**WOD-SU-114-0406**		**WOD-SU-115-0305**		**WOD-SU-116-0204**	
Laboratory ID:	**B0257-08A**		**B0257-11A**		**B0257-13A**		**B0257-15A**		**B0257-17A**		**B0258-03A**		**B0258-05A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**		**02/12/03**	
Duplicate:														
Top Depth:	**2.0**		**5.0**		**2.0**		**4.0**		**4.0**		**3.0**		**2.0**	
Bottom Depth:	**4.0**		**7.0**		**4.0**		**6.0**		**6.0**		**5.0**		**4.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4-Chloro-3-methylphenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
4-Chloroaniline	350	U	400	U	340	U	350	U	360	U	350	U	380	U
4-Chlorophenyl Phenyl Ether	350	U	400	U	340	U	350	U	360	U	350	U	380	U
4-Methylphenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
4-Nitroaniline	880	UJ	1000	U	870	UJ	880	UJ	910	UJ	880	UJ	960	U
4-Nitrophenol	880	U	1000	U	870	U	880	U	910	U	880	U	960	U
Acenaphthene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Acenaphthylene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
Acetophenone	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Anthracene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
Atrazine	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Benz(a)anthracene	350	U	45	J	340	U	350	U	360	U	350	U	390	U
Benzaldehyde	350	UJ	45	J	340	UJ	350	UJ	360	UJ	350	UJ	380	UJ
Benzo(a)pyrene	350	U	55	J	340	U	350	UJ	360	U	350	U	390	U
Benzo(b)fluoranthene	350	U	88	J	340	U	350	UJ	360	U	350	U	390	U
Benzo(g,h,i)perylene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Benzo(k)fluoranthene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Bis(2-chloroethoxy)methane	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Bis(2-chloroethyl)ether	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Bis(2-ethylhexyl)phthalate	350	U	78	J	340	U	350	U	360	U	350	U	380	U
Butylbenzylphthalate	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Caprolactam	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Carbazole	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Chrysene	350	U	73	J	340	U	350	U	360	U	350	U	390	U
Di-n-butylphthalate	350	U	400	U	340	U	350	UJ	360	U	350	U	380	U
Di-n-octylphthalate	350	U	400	U	340	U	350	UJ	360	U	350	U	380	U
Dibenz(a,h)anthracene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Dibenzofuran	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Diethylphthalate	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Dimethylphthalate	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Fluoranthene	350	U	45	J	340	U	350	U	360	U	350	U	40	J
Fluorene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Hexachlorobenzene	350	U	400	U	340	U	350	UJ	360	U	350	U	380	U
Hexachlorobutadiene	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Hexachlorocyclopentadiene	350	U	400	U	340	U	350	U	360	U	350	UJ	380	U
Hexachloroethane	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Indeno(1,2,3-cd)pyrene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Isophorone	350	U	400	U	340	U	350	U	360	U	350	U	380	U
N-Nitroso-di-n-propylamine	350	U	400	U	340	U	350	U	360	U	350	U	380	U
N-Nitrosodiphenylamine (1)	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Naphthalene	350	U	400	U	340	U	350	U	360	U	350	U	390	U
Nitrobenzene	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Pentachlorophenol	880	U	1000	U	870	U	880	U	910	U	880	U	960	U
Phenanthrene	350	U	400	U	340	U	350	UJ	360	U	350	U	390	U
Phenol	350	U	400	U	340	U	350	U	360	U	350	U	380	U
Pyrene	350	U	93	J	340	U	350	U	360	U	350	U	390	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,1,2,2-Tetrachloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-110-0204		WOD-SU-111-0507		WOD-SU-112-0204		WOD-SU-113-0406		WOD-SU-114-0406		WOD-SU-115-0305		WOD-SU-116-0204	
Laboratory ID:	**B0257-08A**		**B0257-11A**		**B0257-13A**		**B0257-15A**		**B0257-17A**		**B0258-03A**		**B0258-05A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**		**02/12/03**	
Duplicate:														
Top Depth:	**2.0**		**5.0**		**2.0**		**4.0**		**4.0**		**3.0**		**2.0**	
Bottom Depth:	**4.0**		**7.0**		**4.0**		**6.0**		**6.0**		**5.0**		**4.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
1,1,2-Trichloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,1-Dichloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,1-Dichloroethene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,2,4-Trichlorobenzene	12	U	14	UJ	11	U	12	U	10	UJ	9	UJ	14	U
1,2,4-Trimethylbenzene	12	U	4	J	11	U	12	U	10	U	9	U	14	U
1,2-Dibromo-3-chloropropane	12	U	14	UJ	11	U	12	U	10	UJ	9	UJ	14	U
1,2-Dibromoethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,2-Dichlorobenzene	12	U	14	UJ	11	U	12	U	10	UJ	9	U	14	U
1,2-Dichloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,2-Dichloroethene (cis)	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,2-Dichloropropane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,3,5-Trimethylbenzene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
1,3-Dichlorobenzene	12	U	14	UJ	11	U	12	U	10	U	9	UJ	14	U
1,4-Dichlorobenzene	12	U	14	UJ	11	U	12	U	10	UJ	9	UJ	14	U
2-Butanone	12	U	25	J	11	U	12	U	10	U	9	U	14	U
2-Hexanone	12	U	14	UJ	11	U	12	U	10	U	9	U	3	B
4-Methyl-2-pentanone	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Acetone	17	B	140	J	68	B	7	B	13	B	13	B	10	B
Benzene	12	U	42	J	11	U	12	U	10	U	9	U	14	U
Bromodichloromethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Bromoform	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Bromomethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Carbon Disulfide	12	U	4	J	11	U	12	U	10	U	9	U	14	U
Carbon Tetrachloride	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Chlorobenzene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Chloroethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Chloroform	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Chloromethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
cis-1,3-Dichloropropene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Cyclohexane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Dibromochloromethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Dichlorodifluoromethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Ethylbenzene	12	U	2	J	11	U	12	U	10	U	9	U	14	U
Isopropylbenzene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
m,p-xylene	12	U	4	J	11	U	12	U	10	U	9	U	14	U
Methyl Acetate	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Methyl Tert-butyl Ether (mtbe)	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Methylcyclohexane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Methylene Chloride	2	B	11	B	10	B	7	B	7	B	5	B	5	B
o-xylene	12	U	1	J	11	U	12	U	10	U	9	U	14	U
Styrene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Tetrachloroethene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Toluene	12	U	10	J	11	U	12	U	10	U	9	U	14	U
trans-1,3-Dichloropropene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Trichloroethene	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Trichlorofluoromethane	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Vinyl Chloride	12	U	14	UJ	11	U	12	U	10	U	9	U	14	U
Xylene (Total)	12	U	5	J	11	U	12	U	10	U	9	U	14	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-110-0204**		**WOD-SU-111-0507**		**WOD-SU-112-0204**		**WOD-SU-113-0406**		**WOD-SU-114-0406**		**WOD-SU-115-0305**		**WOD-SU-116-0204**	
Laboratory ID:	**B0257-08A**		**B0257-11A**		**B0257-13A**		**B0257-15A**		**B0257-17A**		**B0258-03A**		**B0258-05A**	
Sample Date:	**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/11/03**		**02/12/03**		**02/12/03**	
Duplicate:														
Top Depth:	**2.0**		**5.0**		**2.0**		**4.0**		**4.0**		**3.0**		**2.0**	
Bottom Depth:	**4.0**		**7.0**		**4.0**		**6.0**		**6.0**		**5.0**		**4.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Aroclor-1221	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Aroclor-1232	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Aroclor-1242	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Aroclor-1248	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Aroclor-1254	36	U	150	R	35	U	35	U	37	U	35	U	40	U
Aroclor-1260	36	U	40	U	35	U	35	U	37	U	35	U	40	U
Beta-BHC	NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA	

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-117-0102**		**WOD-SU-118-0406**		**WOD-SU-118-0406-DUP**		**WOD-SU-119-0507**		**WOD-SU-120-0406**		**WOD-SU-121-1012**	
Laboratory ID:	**B0258-07A**		**B0258-09A**		**B0258-11A**		**B0258-12A**		**B0258-15A**		**B0262-03A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**	
Duplicate:			**WOD-SU-118-0406-DUP**		**WOD-SU-118-0406**							
Top Depth:	**1.0**		**4.0**		**4.0**		**5.0**		**4.0**		**10.0**	
Bottom Depth:	**2.0**		**6.0**		**6.0**		**7.0**		**6.0**		**12.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	3520		3820		2600		8190		3920		6050	
Antimony	0.19	B	0.21	B	0.22	B	0.31	B	0.2	B	0.15	UL
Arsenic	0.79		2.7		2.3		2	L	1.3		1.5	
Barium	11.6		17.5		12.2		24.1		18.1		18.5	
Beryllium	0.2		0.21		0.18		0.37		0.27		0.19	
Cadmium	0.034	U	0.032	U	0.033	U	0.062	K	0.034		0.034	UL
Calcium	51.3		50.9		43.7		98.2		99.7		11.8	U
Chromium	3		3.3		3.9		6.5		4.3		4.5	
Cobalt	0.68		0.33		0.42		2		1.2		0.55	
Copper	0.97	B	1.5	B	1	B	2.5	B	1.2	B	1.2	B
Cyanide	NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA	
Iron	2470		2210		2220		5740		2820		2680	J
Lead	2.9		1.3		1.4		3.9		3.8		1.6	
Magnesium	252		131		144		433		308		278	
Manganese	11.9		15.3		23		48.7		37.9		21.3	J
Mercury	0.017	U	0.018	U	0.017	U	0.015	U	0.019	U	0.019	U
Nickel	1.9		1.1		0.94		4.1		2.2		1.4	
Potassium	80.8	B	87.7	B	95.5	B	162		112		211	
Selenium	0.44	U	0.41	U	0.43	U	0.44	UL	0.43	U	0.44	UL
Silver	0.11		0.091	U	0.095	U	0.21	L	0.095	U	0.26	B
Sodium	6.1	B	4.5	B	3.9	U	6.7	B	4	U	14.1	B
Thallium	0.15	U	0.14	U	0.14	U	0.15	U	0.14	U	0.15	U
Vanadium	4.6		4.2		4.3		10.2		5.8		6.3	
Zinc	6		3.3	B	2.8	B	8.1		6.6		3.3	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	370	U	360	U	360	U	350	U	370	U	370	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	370	U	360	U	360	U	350	U	370	U	370	U
2,4,5-Trichlorophenol	940	U	920	U	900	U	870	U	920	U	920	U
2,4,6-Trichlorophenol	370	U	360	U	360	U	350	U	370	U	370	U
2,4-Dichlorophenol	370	U	360	U	360	U	350	U	370	U	370	U
2,4-Dimethylphenol	370	U	360	U	360	U	350	U	370	U	370	U
2,4-Dinitrophenol	940	U	920	U	900	U	870	U	920	U	920	U
2,4-Dinitrotoluene	370	U	360	U	360	U	350	U	370	U	370	U
2,6-Dinitrotoluene	370	U	360	U	360	U	350	U	370	U	370	U
2-Chloronaphthalene	370	U	360	U	360	U	350	U	370	U	370	U
2-Chlorophenol	370	U	360	U	360	U	350	U	370	U	370	U
2-Methylnaphthalene	370	U	360	U	360	U	350	U	370	U	370	U
2-Methylphenol	370	U	360	U	360	U	350	U	370	U	370	U
2-Nitroaniline	940	U	920	U	900	U	870	U	920	U	920	U
2-Nitrophenol	370	U	360	U	360	U	350	U	370	U	370	U
3,3'-Dichlorobenzidine	370	U	360	U	360	U	350	U	370	U	370	U
3-Nitroaniline	940	UJ	920	UJ	900	UJ	870	UJ	920	UJ	920	U
4,6-Dinitro-2-methylphenol	940	U	920	U	900	U	870	U	920	U	920	U
4-Bromophenyl Phenyl Ether	370	U	360	U	360	U	350	U	370	U	370	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-117-0102**		**WOD-SU-118-0406**		**WOD-SU-118-0406-DUP**		**WOD-SU-119-0507**		**WOD-SU-120-0406**		**WOD-SU-121-1012**	
Laboratory ID:	**B0258-07A**		**B0258-09A**		**B0258-11A**		**B0258-12A**		**B0258-15A**		**B0262-03A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**	
Duplicate:			**WOD-SU-118-0406-DUP**		**WOD-SU-118-0406**							
Top Depth:	**1.0**		**4.0**		**4.0**		**5.0**		**4.0**		**10.0**	
Bottom Depth:	**2.0**		**6.0**		**6.0**		**7.0**		**6.0**		**12.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4-Chloro-3-methylphenol	370	U	360	U	360	U	350	U	370	U	370	U
4-Chloroaniline	370	U	360	U	360	U	350	U	370	U	370	U
4-Chlorophenyl Phenyl Ether	370	U	360	U	360	U	350	U	370	U	370	U
4-Methylphenol	370	U	360	U	360	U	350	U	370	U	370	U
4-Nitroaniline	940	U	920	U	900	U	870	U	920	U	920	U
4-Nitrophenol	940	U	920	U	900	U	870	U	920	UJ	920	U
Acenaphthene	370	U	360	U	360	U	350	U	370	U	370	U
Acenaphthylene	370	U	360	U	360	U	350	U	370	U	370	U
Acetophenone	370	U	360	U	360	U	350	U	370	U	370	U
Anthracene	370	U	360	U	360	U	350	U	370	U	370	U
Atrazine	370	U	360	U	360	U	350	U	370	U	370	U
Benz(a)anthracene	370	U	360	U	360	U	350	U	370	U	370	U
Benzaldehyde	370	UJ	360	UJ	360	UJ	350	UJ	370	UJ	370	U
Benzo(a)pyrene	370	U	360	U	360	U	350	U	370	UJ	370	U
Benzo(b)fluoranthene	370	U	360	U	360	U	350	U	370	U	370	U
Benzo(g,h,i)perylene	370	U	360	U	360	U	350	U	370	U	370	U
Benzo(k)fluoranthene	370	U	360	U	360	U	350	U	370	U	370	U
Bis(2-chloroethoxy)methane	370	U	360	U	360	U	350	U	370	U	370	U
Bis(2-chloroethyl)ether	370	U	360	U	360	U	350	U	370	U	370	U
Bis(2-ethylhexyl)phthalate	370	U	360	U	360	U	350	U	66	J	370	U
Butylbenzylphthalate	370	U	360	U	360	U	350	U	370	U	370	U
Caprolactam	370	U	360	U	360	U	350	U	370	U	370	U
Carbazole	370	U	360	U	360	U	350	U	370	U	370	U
Chrysene	370	U	360	U	360	U	350	U	370	U	370	U
Di-n-butylphthalate	370	U	360	U	360	U	350	U	370	U	370	U
Di-n-octylphthalate	370	U	360	U	360	U	350	U	370	UJ	370	U
Dibenz(a,h)anthracene	370	U	360	U	360	U	350	U	370	U	370	U
Dibenzofuran	370	U	360	U	360	U	350	U	370	UJ	370	U
Diethylphthalate	370	U	360	U	360	U	350	U	370	U	370	U
Dimethylphthalate	370	U	360	U	360	U	350	U	370	U	370	U
Fluoranthene	370	U	360	U	360	U	350	U	370	U	370	U
Fluorene	370	U	360	U	360	U	350	U	370	U	370	U
Hexachlorobenzene	370	U	360	U	360	U	350	U	370	U	370	U
Hexachlorobutadiene	370	U	360	U	360	U	350	U	370	U	370	U
Hexachlorocyclopentadiene	370	U	360	U	360	U	350	U	370	U	370	U
Hexachloroethane	370	U	360	U	360	U	350	U	370	U	370	U
Indeno(1,2,3-cd)pyrene	370	U	360	U	360	U	350	U	370	U	370	U
Isophorone	370	U	360	U	360	U	350	U	370	U	370	U
N-Nitroso-di-n-propylamine	370	U	360	U	360	U	350	U	370	U	370	U
N-Nitrosodiphenylamine (1)	370	U	360	U	360	U	350	U	370	U	370	U
Naphthalene	370	U	360	U	360	U	350	U	370	U	370	U
Nitrobenzene	370	U	360	U	360	U	350	U	370	U	370	U
Pentachlorophenol	940	U	920	U	900	U	870	U	920	U	920	U
Phenanthrene	370	U	360	U	360	U	350	U	370	UJ	370	U
Phenol	370	U	360	U	360	U	350	U	370	U	370	U
Pyrene	370	U	360	U	360	U	350	U	370	U	370	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	15	U	10	U	9	U	12	U	10	U	12	U
1,1,2,2-Tetrachloroethane	15	U	10	U	9	U	12	U	10	U	12	U
1,1,2-Trichloro-1,2,2-trifluoroethane	15	U	10	U	9	U	12	U	10	U	12	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-117-0102		WOD-SU-118-0406		WOD-SU-118-0406-DUP		WOD-SU-119-0507		WOD-SU-120-0406		WOD-SU-121-1012	
Laboratory ID:	B0258-07A		B0258-09A		B0258-11A		B0258-12A		B0258-15A		B0262-03A	
Sample Date:	02/12/03		02/12/03		02/12/03		02/12/03		02/12/03		02/13/03	
Duplicate:			WOD-SU-118-0406-DUP		WOD-SU-118-0406							
Top Depth:	1.0		4.0		4.0		5.0		4.0		10.0	
Bottom Depth:	2.0		6.0		6.0		7.0		6.0		12.0	
	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL	RESULT	QUAL
1,1,2-Trichloroethane	15	U	10	U	9	U	12	U	10	U	12	U
1,1-Dichloroethane	15	U	10	U	9	U	12	U	10	U	12	U
1,1-Dichloroethene	15	U	10	U	9	U	12	U	10	U	12	U
1,2,4-Trichlorobenzene	15	U	10	U	9	U	12	U	10	U	12	U
1,2,4-Trimethylbenzene	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dibromo-3-chloropropane	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dibromoethane	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dichlorobenzene	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dichloroethane	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dichloroethene (cis)	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	15	U	10	U	9	U	12	U	10	U	12	U
1,2-Dichloropropane	15	U	10	U	9	U	12	U	10	U	12	U
1,3,5-Trimethylbenzene	15	U	10	U	9	U	12	U	10	U	12	U
1,3-Dichlorobenzene	15	U	10	U	9	U	12	U	10	U	12	U
1,4-Dichlorobenzene	15	U	10	U	9	U	12	U	10	U	12	U
2-Butanone	15	U	10	U	9	U	12	U	10	U	12	U
2-Hexanone	15	U	10	U	9	U	12	U	10	U	12	U
4-Methyl-2-pentanone	15	U	10	U	9	U	12	U	10	U	12	U
Acetone	22	B	10	B	12	B	22	B	27	B	9	B
Benzene	15	U	10	U	9	U	12	U	10	U	12	U
Bromodichloromethane	15	U	10	U	9	U	12	U	10	U	12	U
Bromoform	15	U	10	U	9	U	12	U	10	U	12	U
Bromomethane	15	U	10	U	9	U	12	U	10	U	12	U
Carbon Disulfide	15	U	10	U	9	U	12	U	10	U	12	U
Carbon Tetrachloride	15	U	10	U	9	U	12	U	10	U	12	U
Chlorobenzene	15	U	10	U	9	U	12	U	10	U	12	U
Chloroethane	15	U	10	U	9	U	12	U	10	U	12	U
Chloroform	15	U	10	U	9	U	12	U	10	U	12	U
Chloromethane	15	U	10	U	9	U	12	U	10	U	12	U
cis-1,3-Dichloropropene	15	U	10	U	9	U	12	U	10	U	12	U
Cyclohexane	15	U	10	U	9	U	12	U	10	U	12	U
Dibromochloromethane	15	U	10	U	9	U	12	U	10	U	12	U
Dichlorodifluoromethane	15	U	10	U	9	U	12	U	10	U	12	U
Ethylbenzene	15	U	10	U	9	U	12	U	10	U	12	U
Isopropylbenzene	15	U	10	U	9	U	12	U	10	U	12	U
m,p-xylene	15	U	10	U	9	U	12	U	10	U	12	U
Methyl Acetate	15	U	10	U	9	U	12	U	10	U	12	U
Methyl Tert-butyl Ether (mtbe)	15	U	10	U	9	U	12	U	10	U	12	U
Methylcyclohexane	15	U	10	U	9	U	12	U	10	U	12	U
Methylene Chloride	5	B	3	B	3	B	3	B	5	B	4	B
o-xylene	15	U	10	U	9	U	12	U	10	U	12	U
Styrene	15	U	10	U	9	U	12	U	10	U	12	U
Tetrachloroethene	15	U	10	U	9	U	12	U	10	U	12	U
Toluene	15	U	10	U	9	U	12	U	10	U	12	U
trans-1,3-Dichloropropene	15	U	10	U	9	U	12	U	10	U	12	U
Trichloroethene	15	U	10	U	9	U	12	U	10	U	12	U
Trichlorofluoromethane	15	U	10	U	9	U	12	U	10	U	12	U
Vinyl Chloride	15	U	10	U	9	U	12	U	10	U	12	U
Xylene (Total)	15	U	10	U	9	U	12	U	10	U	12	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-117-0102**		**WOD-SU-118-0406**		**WOD-SU-118-0406-DUP**		**WOD-SU-119-0507**		**WOD-SU-120-0406**		**WOD-SU-121-1012**	
Laboratory ID:	**B0258-07A**		**B0258-09A**		**B0258-11A**		**B0258-12A**		**B0258-15A**		**B0262-03A**	
Sample Date:	**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/12/03**		**02/13/03**	
Duplicate:			**WOD-SU-118-0406-DUP**		**WOD-SU-118-0406**							
Top Depth:	**1.0**		**4.0**		**4.0**		**5.0**		**4.0**		**10.0**	
Bottom Depth:	**2.0**		**6.0**		**6.0**		**7.0**		**6.0**		**12.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA	
Aroclor-1016	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1221	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1232	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1242	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1248	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1254	38	U	36	U	36	U	36	U	37	U	37	U
Aroclor-1260	38	U	36	U	36	U	36	U	37	U	37	U
Beta-BHC	NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA	

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-122-1012		WOD-SU-122-1012-DUP		WOD-SU-123-1012		WOD-SU-124-0203		WOD-SU-125-0203		WOD-SU-127-0203		WOD-SU-126-0203	
Laboratory ID:	**B0262-05A**		**B0262-06A**		**B0262-08A**		**B0262-10A**		**B0262-12A**		**B0320-02A**		**B0327-02A**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/25/03**		**02/26/03**	
Duplicate:	**WOD-SU-122-1012-DUP**		**WOD-SU-122-1012**											
Top Depth:	**10.0**		**10.0**		**10.0**		**2.0**		**2.0**		**2.0**		**2.0**	
Bottom Depth:	**12.0**		**12.0**		**12.0**		**3.0**		**3.0**		**3.0**		**3.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
INORGANICS	**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**		**mg/kg**	
Aluminum	11400		8280		4190		2750		6570		5140		11100	
Antimony	0.16	UL	0.14	UL	0.14	UL	0.14	UL	0.14	UL	0.15	U	0.17	UL
Arsenic	3.2		1.6		1.4		1.4		5		2.6		2.8	
Barium	46.8		30.4		10.9		10.8		113		19.9		27.1	
Beryllium	0.35		0.23		0.13		0.088		0.25		0.14		0.21	
Cadmium	0.038	UL	0.034	UL	0.033	U	0.032	U	0.032	UL	0.035	U	0.039	UL
Calcium	26	B	27.4	B	22.8	B	166		861		47.8		13.4	U
Chromium	9.8		7.9		3.5		3.1		8.7		5.6		9.6	
Cobalt	1.1		0.86		0.38		0.76		2.2		1.7		2.4	
Copper	2		1.3	B	0.77	B	1.1	B	4.9		1.9		3.2	
Cyanide	NA		NA		NA		NA		NA		NA		NA	
Hexavalent Chromium	NA		NA		NA		NA		NA		NA		NA	
Iron	5270	J	3110	J	1680	J	2170	J	5700	J	4200		8540	
Lead	2.6	K	2.1		1.1		2.7		23.2		3.4		4.4	
Magnesium	603		389		221		185		576		387		622	
Manganese	85.8	J	47.9	J	25.7	J	23.5	J	93	J	68.9		37.7	
Mercury	0.018	U	0.017	U	0.018	U	0.016	U	0.028		0.015	U	0.019	U
Nickel	2.6		1.7		0.83		1.3		4.2		3.1		5.4	
Potassium	515		347		167		110		258		180		284	
Selenium	0.49	UL	0.43	UL	0.42	U	0.41	U	0.41	UL	0.45	U	0.5	U
Silver	0.33	B	0.18	B	0.16	B	0.15	B	0.26	B	0.24		0.46	
Sodium	17.6	B	12.9	B	7.2	B	4	B	14.8	B	12.4		20.5	K
Thallium	0.16	U	0.14	U	0.14	U	0.14	U	0.14	U	0.15	U	0.17	U
Vanadium	12.6		7.7		4.4		4.5		13.7		8.4		15	
Zinc	5.6		3.5		2.3		4.6		22.7		8.9		10.6	
SEMIVOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1-Biphenyl	390	U	360	U	360	U	350	U	360	U	360	U	380	U
1,2,4-Trichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,3-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
1,4-Dichlorobenzene	NA		NA		NA		NA		NA		NA		NA	
2,2'-Oxybis(1-chloropropane)	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2,4,5-Trichlorophenol	970	U	910	U	900	U	880	U	910	U	920	U	950	U
2,4,6-Trichlorophenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2,4-Dichlorophenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2,4-Dimethylphenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2,4-Dinitrophenol	970	U	910	U	900	U	880	U	910	U	920	U	950	U
2,4-Dinitrotoluene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2,6-Dinitrotoluene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2-Chloronaphthalene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2-Chlorophenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2-Methylnaphthalene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2-Methylphenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
2-Nitroaniline	970	U	910	U	900	U	880	U	910	U	920	U	950	U
2-Nitrophenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
3,3'-Dichlorobenzidine	390	U	360	U	360	U	350	U	360	U	360	U	380	U
3-Nitroaniline	970	U	910	U	900	U	880	U	910	U	920	UJ	950	UJ
4,6-Dinitro-2-methylphenol	970	U	910	U	900	U	880	U	910	U	920	U	950	U
4-Bromophenyl Phenyl Ether	390	U	360	U	360	U	350	U	360	U	360	U	380	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-122-1012**		**WOD-SU-122-1012-DUP**		**WOD-SU-123-1012**		**WOD-SU-124-0203**		**WOD-SU-125-0203**		**WOD-SU-127-0203**		**WOD-SU-126-0203**	
Laboratory ID:	**B0262-05A**		**B0262-06A**		**B0262-08A**		**B0262-10A**		**B0262-12A**		**B0320-02A**		**B0327-02A**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/25/03**		**02/26/03**	
Duplicate:	**WOD-SU-122-1012-DUP**		**WOD-SU-122-1012**											
Top Depth:	**10.0**		**10.0**		**10.0**		**2.0**		**2.0**		**2.0**		**2.0**	
Bottom Depth:	**12.0**		**12.0**		**12.0**		**3.0**		**3.0**		**3.0**		**3.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
4-Chloro-3-methylphenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
4-Chloroaniline	390	U	360	U	360	U	350	U	360	U	360	U	380	U
4-Chlorophenyl Phenyl Ether	390	U	360	U	360	U	350	U	360	U	360	U	380	U
4-Methylphenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
4-Nitroaniline	970	U	910	U	900	U	880	U	910	U	920	U	950	U
4-Nitrophenol	970	U	910	U	900	U	880	U	910	U	920	U	950	U
Acenaphthene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Acenaphthylene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Acetophenone	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Anthracene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Atrazine	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Benz(a)anthracene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Benzaldehyde	390	U	360	U	360	U	350	U	360	U	360	UJ	380	UJ
Benzo(a)pyrene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Benzo(b)fluoranthene	390	U	360	U	360	U	350	U	56	J	360	U	380	U
Benzo(g,h,i)perylene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Benzo(k)fluoranthene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Bis(2-chloroethoxy)methane	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Bis(2-chloroethyl)ether	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Bis(2-ethylhexyl)phthalate	390	U	360	U	360	U	350	U	360	U	190	J	63	J
Butylbenzylphthalate	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Caprolactam	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Carbazole	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Chrysene	390	U	360	U	360	U	350	U	39	J	360	U	380	U
Di-n-butylphthalate	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Di-n-octylphthalate	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Dibenz(a,h)anthracene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Dibenzofuran	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Diethylphthalate	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Dimethylphthalate	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Fluoranthene	390	U	360	U	360	U	350	U	43	J	360	U	380	U
Fluorene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Hexachlorobenzene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Hexachlorobutadiene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Hexachlorocyclopentadiene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Hexachloroethane	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Indeno(1,2,3-cd)pyrene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Isophorone	390	U	360	U	360	U	350	U	360	U	360	U	380	U
N-Nitroso-di-n-propylamine	390	U	360	U	360	U	350	U	360	U	360	U	380	U
N-Nitrosodiphenylamine (1)	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Naphthalene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Nitrobenzene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Pentachlorophenol	970	U	910	U	900	U	880	U	910	U	920	U	950	U
Phenanthrene	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Phenol	390	U	360	U	360	U	350	U	360	U	360	U	380	U
Pyrene	390	U	360	U	360	U	350	U	47	J	360	U	380	U
VOLATILES	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
1,1,1-Trichloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,1,2,2-Tetrachloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-SU-122-1012		WOD-SU-122-1012-DUP		WOD-SU-123-1012		WOD-SU-124-0203		WOD-SU-125-0203		WOD-SU-127-0203		WOD-SU-126-0203	
Laboratory ID:	**B0262-05A**		**B0262-06A**		**B0262-08A**		**B0262-10A**		**B0262-12A**		**B0320-02A**		**B0327-02A**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/25/03**		**02/26/03**	
Duplicate:	**WOD-SU-122-1012-DUP**		**WOD-SU-122-1012**											
Top Depth:	**10.0**		**10.0**		**10.0**		**2.0**		**2.0**		**2.0**		**2.0**	
Bottom Depth:	**12.0**		**12.0**		**12.0**		**3.0**		**3.0**		**3.0**		**3.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
1,1,2-Trichloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,1-Dichloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,1-Dichloroethene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2,4-Trichlorobenzene	12	UJ	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2,4-Trimethylbenzene	12	U	11	U	12	U	10	UJ	1	J	9	U	9	U
1,2-Dibromo-3-chloropropane	12	UJ	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dibromoethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dichlorobenzene	12	UJ	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dichloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dichloroethene (cis)	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dichloroethene (Total)	NA		NA		NA		NA		NA		NA		NA	
1,2-Dichloroethene (trans)	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,2-Dichloropropane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
1,3,5-Trimethylbenzene	12	U	11	U	12	U	10	UJ	1	J	9	U	9	U
1,3-Dichlorobenzene	12	UJ	11	U	12	U	10	UJ	10	U	9	U	9	U
1,4-Dichlorobenzene	12	UJ	11	U	12	U	10	UJ	10	U	9	U	9	U
2-Butanone	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
2-Hexanone	12	U	11	U	3	B	10	UJ	3	B	9	U	9	U
4-Methyl-2-pentanone	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Acetone	19	B	8	B	11	B	27	B	20	B	8	J	20	B
Benzene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Bromodichloromethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Bromoform	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Bromomethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Carbon Disulfide	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Carbon Tetrachloride	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Chlorobenzene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Chloroethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Chloroform	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Chloromethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
cis-1,3-Dichloropropene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Cyclohexane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Dibromochloromethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Dichlorodifluoromethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Ethylbenzene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Isopropylbenzene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
m,p-xylene	12	U	11	U	12	U	10	UJ	1	J	9	U	9	U
Methyl Acetate	12	U	11	U	12	U	5	J	10	U	9	U	9	U
Methyl Tert-butyl Ether (mtbe)	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Methylcyclohexane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Methylene Chloride	6	B	2	B	7	B	5	B	5	B	5	B	6	B
o-xylene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Styrene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Tetrachloroethene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Toluene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
trans-1,3-Dichloropropene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Trichloroethene	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Trichlorofluoromethane	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Vinyl Chloride	12	U	11	U	12	U	10	UJ	10	U	9	U	9	U
Xylene (Total)	12	U	11	U	12	U	10	UJ	1	J	9	U	9	U

Appendix A, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-SU-122-1012**		**WOD-SU-122-1012-DUP**		**WOD-SU-123-1012**		**WOD-SU-124-0203**		**WOD-SU-125-0203**		**WOD-SU-127-0203**		**WOD-SU-126-0203**	
Laboratory ID:	**B0262-05A**		**B0262-06A**		**B0262-08A**		**B0262-10A**		**B0262-12A**		**B0320-02A**		**B0327-02A**	
Sample Date:	**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/13/03**		**02/25/03**		**02/26/03**	
Duplicate:	**WOD-SU-122-1012-DUP**		**WOD-SU-122-1012**											
Top Depth:	**10.0**		**10.0**		**10.0**		**2.0**		**2.0**		**2.0**		**2.0**	
Bottom Depth:	**12.0**		**12.0**		**12.0**		**3.0**		**3.0**		**3.0**		**3.0**	
	RESULT	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**	**RESULT**	**QUAL**
PESTICIDES/PCBS	**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**		**ug/kg**	
4,4'-DDD	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Aroclor-1016	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1221	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1232	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1242	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1248	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1254	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Aroclor-1260	39	U	36	U	36	U	35	U	37	U	36	U	39	U
Beta-BHC	NA		NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA		NA	

Appendix E, Table 2
Data Summary of Waste Oil Dump Subsurface Soil Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
JN -- Positive result is considered presumptively present.
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOSB.DBF data retrieved on: 07/29/03

A3

GROUNDWATER

ANALYTICAL RESULTS

A3A - UNFILTERED GW

A3B - FILTERED GW

A3a

UNFILTERED GW

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	MW3R-20030220		MW3R-20030312		WOD-MW4		WOD-WFF15-GW1		WOD-WFF15-GW2		WOD-WFF15-GW7		WOD-WFF16-GW1	
Sample Date:	02/20/03		03/12/03		03/17/03		03/12/03		03/12/03		03/14/03		03/18/03	
Duplicate:														
Upgradient Well (Y/N):	Y		Y		N		N		N		N		N	
INORGANICS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	297		376	J	8220		831	J	2410	J	116	B	17.4	B
Antimony	3	U	4.1	B	3	U	4.5	B	3.6	B	3	U	3	U
Arsenic	3	U	3	U	4.6	B	3	U	4.4	B	15.6	B	3	U
Barium	21.6		21.8	B	52.4		33.4		32.4		68.1		71.3	
Beryllium	0.5	U	0.5	U	1.1	B	0.5	U	0.5	U	0.66	B	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Calcium	6740		11600		5940		9240		4740		4130		28000	
Chromium	0.6	U	2.7	B	6.1		1.3	B	3.2	B	0.88	B	147	
Cobalt	0.9	U	2.4	B	3.4	B	3.9	B	3.5	B	4.1	B	1.2	B
Copper	4	U	12.6	B	31.9	B	15.3	B	10.7	B	15.2	B	8.1	B
Iron	148	B	203		2210		1990		6810		16400		516	
Lead	4	U	4	U	5.1		4	U	4	U	68.6		4	U
Magnesium	4970		4350		1690		9330		2840		4350		4610	
Manganese	13.4		6.8	B	18.8		220	J	15.2	J	641		32.6	
Mercury	0.14	U	0.13	U	0.14	U	0.13	U	0.13	U	0.13	UL	0.14	U
Nickel	0.8	U	2.3	B	5.2	B	1.9	B	3.1	B	2.8	B	40.2	
Potassium	1880		1460		2980		1160		1610		1900		5180	
Selenium	9	U	9	U	9	U	9	U	9	U	9	U	9	U
Silver	2	U	2.3		2.9		2	U	2.8		2	U	8.3	B
Sodium	4190		3250		9370		3390		12700		7290		6600	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	1.5		1.1	B	9.9		0.7	U	3.9	B	2.4	B	2.2	B
Zinc	7	U	48.4	B	62.3	B	44.3	B	46.4	B	37	B	7	U
SEMIVOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
2,2'-Oxybis(1-chloropropane)	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4,5-Trichlorophenol	20	U	20	U	20	U	20	U	20	U	20	U	20	U
2,4,6-Trichlorophenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4-Dichlorophenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,4-Dimethylphenol	5	U	5	UR	5	U	5	UR	5	UR	5	UR	5	UL
2,4-Dinitrophenol	20	U	20	U	20	U	20	U	20	U	20	U	20	U
2,4-Dinitrotoluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2,6-Dinitrotoluene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Chloronaphthalene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Chlorophenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Methylnaphthalene	5	U	5	U	5	U	5	U	5	U	130		5	U
2-Methylphenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
2-Nitroaniline	20	U	20	U	20	U	20	U	20	U	20	U	20	U
2-Nitrophenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
3,3'-Dichlorobenzidine	5	UJ	5	UL	5	UJ	5	UL	5	UL	5	UL	5	U
3-Nitroaniline	20	UJ	20	U	20	U	20	U	20	U	20	U	20	U
4,6-Dinitro-2-methylphenol	20	U	20	U	20	U	20	U	20	U	20	U	20	U
4-Bromophenyl Phenyl Ether	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Chloro-3-methylphenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Chloroaniline	5	U	5	U	5	U	5	U	5	U	5	U	5	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	MW3R-20030220		MW3R-20030312		WOD-MW4		WOD-WFF15-GW1		WOD-WFF15-GW2		WOD-WFF15-GW7		WOD-WFF16-GW1	
Sample Date:	02/20/03		03/12/03		03/17/03		03/12/03		03/12/03		03/14/03		03/18/03	
Duplicate:														
Upgradient Well (Y/N):	Y		Y		N		N		N		N		N	
4-Chlorophenyl Phenyl Ether	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methylphenol	5	U	5	U	5	U	5	U	42		5	U	5	U
4-Nitroaniline	20	U	20	U	20	UJ	20	U	20	U	20	U	20	U
4-Nitrophenol	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Acenaphthene	5	U	5	U	5	U	5	U	5	U	9		5	U
Acenaphthylene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Anthracene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benz(a)anthracene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Benzo(a)pyrene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(b)fluoranthene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(g,h,i)perylene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(k)fluoranthene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Bis(2-chloroethoxy)methane	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bis(2-chloroethyl)ether	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Bis(2-ethylhexyl)phthalate	5	U	5	U	5	U	5	U	5	U	4	J	5	U
Butylbenzylphthalate	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Chrysene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Di-n-butylphthalate	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Di-n-octylphthalate	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Dibenz(a,h)anthracene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Dibenzofuran	5	U	5	U	5	U	5	U	5	U	4	J	5	U
Diethylphthalate	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Dimethylphthalate	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Fluoranthene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Fluorene	5	U	5	U	5	U	2	J	5	U	12		5	U
Hexachlorobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Hexachlorobutadiene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Hexachlorocyclopentadiene	5	U	5	UL	5	U	5	UL	5	UL	5	UL	5	U
Hexachloroethane	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Indeno(1,2,3-cd)pyrene	5	U	5	UJ	5	U	5	U	5	U	5	U	5	U
Isophorone	5	U	5	U	5	U	5	U	5	U	5	U	5	U
N-Nitroso-di-n-propylamine	5	U	5	U	5	U	5	U	5	U	5	U	5	U
N-Nitrosodiphenylamine (1)	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Naphthalene	5	U	5	U	5	U	5	U	5	U	130		5	U
Nitrobenzene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Pentachlorophenol	20	U	20	U	20	U	20	U	20	U	20	U	20	U
Phenanthrene	5	U	5	U	5	U	2	J	5	U	15		5	U
Phenol	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Pyrene	5	U	5	U	5	U	5	U	5	U	5	U	5	U
VOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
1,1,1-Trichloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	MW3R-20030220		MW3R-20030312		WOD-MW4		WOD-WFF15-GW1		WOD-WFF15-GW2		WOD-WFF15-GW7		WOD-WFF16-GW1	
Sample Date:	02/20/03		03/12/03		03/17/03		03/12/03		03/12/03		03/14/03		03/18/03	
Duplicate:														
Upgradient Well (Y/N):	Y		Y		N		N		N		N		N	
1,1-Dichloroethene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	170		1	U
1,2-Dibromo-3-chloropropane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)	1	U	1	U	1	U	3		1	U	1		1	U
1,2-Dichloroethene (trans)	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	74		1	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	5	U	5	U	5	U	5	U	6		5	U	5	U
2-Hexanone	5	U	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	5	U	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	5	U	5	U	5	U	5	B	4	B	44	B	5	UR
Benzene	1	U	1	U	1	U	1	U	1	U	11		1	U
Bromodichloromethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	1	U	1	U	1	U	1	U	1	U	68		1	U
Isopropylbenzene	1	U	1	U	1	U	1	U	1	U	6		1	U
m,p-xylene	1	U	1	U	1	U	1	U	1	U	370		1	U
Methyl Acetate	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Tert-butyl Ether (mtbe)	1	U	1	U	1	U	1	U	1	U	1	U	1	UL
Methylcyclohexane	1	U	1	U	1	U	1	U	1	U	18		1	U
Methylene Chloride	1	B	2	U	2	U	2	B	2	U	2	U	2	U
o-xylene	1	U	1	U	1	U	1	U	1	U	170		1	U
Styrene	1	U	1	U	1	U	1	U	1	U	5		1	U
Tetrachloroethene	1	U	1	U	1	U	1	U	1	U	5		1	U
Toluene	1	U	1	U	1	U	1	U	2		120		1	U
trans-1,3-Dichloropropene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	1	U	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	1	U	1	U	1	U	1	U	1	U	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**MW3R-20030220**		**MW3R-20030312**		**WOD-MW4**		**WOD-WFF15-GW1**		**WOD-WFF15-GW2**		**WOD-WFF15-GW7**		**WOD-WFF16-GW1**	
Sample Date:	**02/20/03**		**03/12/03**		**03/17/03**		**03/12/03**		**03/12/03**		**03/14/03**		**03/18/03**	
Duplicate:														
Upgradient Well (Y/N):	**Y**		**Y**		**N**		**N**		**N**		**N**		**N**	
Xylene (Total)	1	U	1	U	1	U	1	U	1	U	540		1	U
PESTICIDES/PCBS	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aroclor-1016	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1221	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1232	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1242	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1248	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1254	NA		1	U	1	U	1	U	1	U	1	U	1	U
Aroclor-1260	NA		1	U	1	U	1	U	1	U	1	U	1	U
4,4'-DDD	0.1	UJ	NA		NA		NA		NA		NA		NA	
4,4'-DDE	0.1	UJ	NA		NA		NA		NA		NA		NA	
4,4'-DDT	0.1	UJ	NA		NA		NA		NA		NA		NA	
Aldrin	0.05	UJ	NA		NA		NA		NA		NA		NA	
Alpha-BHC	0.05	UJ	NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	0.05	UJ	NA		NA		NA		NA		NA		NA	
Beta-BHC	0.05	UJ	NA		NA		NA		NA		NA		NA	
Delta-BHC	0.05	UJ	NA		NA		NA		NA		NA		NA	
Dieldrin	0.1	UJ	NA		NA		NA		NA		NA		NA	
Endosulfan I	0.05	UJ	NA		NA		NA		NA		NA		NA	
Endosulfan II	0.1	UJ	NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	0.1	UJ	NA		NA		NA		NA		NA		NA	
Endrin	0.1	UJ	NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	0.1	UJ	NA		NA		NA		NA		NA		NA	
Endrin Ketone	0.1	UJ	NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	0.05	UJ	NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	0.05	UJ	NA		NA		NA		NA		NA		NA	
Heptachlor	0.05	UJ	NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	0.05	UJ	NA		NA		NA		NA		NA		NA	
Methoxychlor	0.5	UJ	NA		NA		NA		NA		NA		NA	
Toxaphene	5	UJ	NA		NA		NA		NA		NA		NA	
MISCELLANEOUS PARAMETERS														
Carbon Dioxide (mg/L)	NA		17.7		51		93.6		35.4		222.8		75.9	
Chloride (mg/L)	NA		4.6		5.6		4.4		25		8.1		7.3	
Ethane (ug/L)	NA		0.01	U	0.01	U	0.08		0.01	U	1.15		0.01	U
Ethene (ug/L)	NA		0.01	U	0.01		0.01	U	0.04		0.06		0.01	U
Hydrogen (nm/L as gas)	NA		2		2.4		2.5		2.2		2.7		4.8	
Methane (ug/L)	NA		26.2		0.2	U	444.2		168.4		529.7		2.9	
Nitrate (mg/L)	NA		0.38	J	0.74		0.072	J	0.1	UJ	0.033	J	2.5	
Nitrite (mg/L)	NA		0.1	UJ	0.1	U	0.1	UJ	0.1	UJ	0.003	UJ	0.003	U
Nitrogen (mg/L)	NA		6.7		14.3		9.2		10.7		10.2		9.1	
Oxygen (mg/L)	NA		3.43		2.89		0.15	U	0.15	U	0.18		3.86	
Sulfate (mg/L)	NA		16		9.1		6.3		13		6.4		21	
Total Organic Carbon (mg/L)	NA		6	U	6	U	6	U	8.2		13		6	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-WFF16-GW2D		WOD-WFF16-GW2S		WOD-WFF16-GW3		WOD-WFF16-GW4		WOD-WFF16-GW5		WOD-WFF16-GW6	
Sample Date:	**03/12/03**		**03/12/03**		**03/18/03**		**03/14/03**		**03/13/03**		**03/17/03**	
Duplicate:												
Upgradient Well (Y/N):	**N**		**N**		**N**		**N**		**N**		**N**	
INORGANICS	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	155	B	211	B	117	B	1530		927		109	B
Antimony	4	B	5.3	B	3	U	3	U	3	B	3	U
Arsenic	21.4		12.5	B	3	U	3	U	3	U	3	U
Barium	47.2		117		16.1	B	37.1		38.5		44.7	
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.62	B
Cadmium	0.92	K	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Calcium	6980		30800		1690		1230		26600		40500	
Chromium	2.7	B	0.91	B	124		2.2	B	1.5	B	0.99	B
Cobalt	1.8	B	2.8	B	1.4	B	2	B	2	B	2.3	B
Copper	8.8	B	23.9	B	9.1	B	14.4	B	14.9	B	21.2	B
Iron	21700		5970		596		1570		662		50.6	
Lead	4	U	4	U	4	U	4	U	4	U	4	U
Magnesium	6040		10300		2280		1520		19900		6590	
Manganese	97.1	J	44.1	J	15		15.5		30.6		17.3	
Mercury	0.13	U	0.13	U	0.14	U	0.13	UL	0.13	U	0.14	U
Nickel	1.6	B	1.8	B	49.1		3.6	B	2.1	B	3.2	B
Potassium	2140		2390		1280		1160		10900		1590	
Selenium	9	UL	9	U	9	U	9	U	9	U	9	U
Silver	3.1	K	2	U	12.3	B	2	U	2	U	2	
Sodium	7630		3160		4460		2810		3920		8710	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	0.7	UL	0.72	B	2.2	B	4.3	B	1.7	B	0.88	B
Zinc	37.1	B	44.8	B	12.9	B	37.3	B	36.8	B	42.6	B
SEMIVOLATILES	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
2,2'-Oxybis(1-chloropropane)	5	UJ	5	U	5	U	5	U	5	U	5	U
2,4,5-Trichlorophenol	20	UR	20	U	20	U	20	U	20	U	20	U
2,4,6-Trichlorophenol	5	UR	5	U	5	U	5	U	5	U	5	U
2,4-Dichlorophenol	5	UR	5	U	5	U	5	U	5	U	5	U
2,4-Dimethylphenol	5	UR	5	UR	5	UL	5	UR	5	UR	5	U
2,4-Dinitrophenol	20	UR	20	U	20	U	20	U	20	U	20	U
2,4-Dinitrotoluene	5	UJ	5	U	5	U	5	U	5	U	5	U
2,6-Dinitrotoluene	5	UJ	5	U	5	U	5	U	5	U	5	U
2-Chloronaphthalene	5	UJ	5	U	5	U	5	U	5	U	5	U
2-Chlorophenol	5	UR	5	U	5	U	5	U	5	U	5	U
2-Methylnaphthalene	5	UJ	5	U	5	U	5	U	5	U	5	U
2-Methylphenol	5	UR	5	U	5	U	5	U	5	U	5	U
2-Nitroaniline	20	UR	20	U	20	U	20	U	20	U	20	UJ
2-Nitrophenol	5	UR	5	U	5	U	5	U	5	U	5	U
3,3'-Dichlorobenzidine	5	UR	5	UL	5	U	5	UL	5	UJ	5	UJ
3-Nitroaniline	20	UR	20	U	20	U	20	U	20	UJ	20	U
4,6-Dinitro-2-methylphenol	20	UR	20	U	20	U	20	U	20	U	20	U
4-Bromophenyl Phenyl Ether	5	UJ	5	U	5	U	5	U	5	U	5	U
4-Chloro-3-methylphenol	5	UR	5	U	5	U	5	U	5	U	5	U
4-Chloroaniline	5	UR	5	U	5	U	5	U	5	U	5	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-WFF16-GW2D		WOD-WFF16-GW2S		WOD-WFF16-GW3		WOD-WFF16-GW4		WOD-WFF16-GW5		WOD-WFF16-GW6	
Sample Date:	03/12/03		03/12/03		03/18/03		03/14/03		03/13/03		03/17/03	
Duplicate:												
Upgradient Well (Y/N):	N		N		N		N		N		N	
4-Chlorophenyl Phenyl Ether	5	UJ	5	U	5	U	5	U	5	U	5	U
4-Methylphenol	5	UR	5	U	5	U	5	U	5	U	5	U
4-Nitroaniline	20	UR	20	U	20	U	20	U	20	U	20	UJ
4-Nitrophenol	20	UR	20	U	20	U	20	U	20	U	20	U
Acenaphthene	5	UJ	1	J	5	U	5	U	5	U	5	U
Acenaphthylene	5	UJ	5	U	5	U	5	U	5	U	5	U
Anthracene	5	UJ	5	U	5	U	5	U	5	U	5	U
Benz(a)anthracene	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(a)pyrene	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(b)fluoranthene	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(g,h,i)perylene	5	UJ	5	U	5	U	5	U	5	U	5	U
Benzo(k)fluoranthene	5	UJ	5	U	5	U	5	U	5	U	5	U
Bis(2-chloroethoxy)methane	5	UJ	5	U	5	U	5	U	5	U	5	U
Bis(2-chloroethyl)ether	5	UJ	5	U	5	U	5	U	5	U	5	U
Bis(2-ethylhexyl)phthalate	5	UJ	2	J	5	U	5	U	5	U	5	U
Butylbenzylphthalate	5	UJ	5	U	5	U	5	U	5	U	5	U
Chrysene	5	UJ	5	U	5	U	5	U	5	U	5	U
Di-n-butylphthalate	5	UJ	5	U	5	U	5	U	5	U	5	U
Di-n-octylphthalate	5	UJ	5	U	5	U	5	U	5	U	5	U
Dibenz(a,h)anthracene	5	UJ	5	U	5	U	5	U	5	U	5	U
Dibenzofuran	5	UJ	5	U	5	U	5	U	5	U	5	U
Diethylphthalate	5	UJ	5	U	5	U	5	U	5	U	5	U
Dimethylphthalate	5	UJ	5	U	5	U	5	U	5	U	5	U
Fluoranthene	5	UJ	5	U	5	U	5	U	5	U	5	U
Fluorene	5	UJ	5	U	5	U	5	U	5	U	5	U
Hexachlorobenzene	5	UJ	5	U	5	U	5	U	5	U	5	U
Hexachlorobutadiene	5	UJ	5	U	5	U	5	U	5	U	5	U
Hexachlorocyclopentadiene	5	UJ	5	UL	5	U	5	UL	5	UJ	5	U
Hexachloroethane	5	UJ	5	U	5	U	5	U	5	U	5	U
Indeno(1,2,3-cd)pyrene	5	UJ	5	U	5	U	5	U	5	U	5	U
Isophorone	5	UJ	5	U	5	U	5	U	5	U	5	U
N-Nitroso-di-n-propylamine	5	UR	5	U	5	U	5	U	5	U	5	U
N-Nitrosodiphenylamine (1)	5	UR	5	U	5	U	5	U	5	U	5	U
Naphthalene	5	UJ	5	U	5	U	5	U	5	U	5	U
Nitrobenzene	5	UJ	5	U	5	U	5	U	5	U	5	U
Pentachlorophenol	20	UR	20	U	20	U	20	U	20	U	20	U
Phenanthrene	5	UJ	5	U	5	U	5	U	5	U	5	U
Phenol	5	UJ	5	U	5	U	5	U	5	U	5	U
Pyrene	5	UJ	5	U	5	U	5	U	5	U	5	U
VOLATILES	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
1,1,1-Trichloroethane	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2,2-Tetrachloroethane	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloroethane	1	U	1	U	1	U	1	U	1	U	1	U
1,1-Dichloroethane	1	U	1	U	1	U	1	U	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-WFF16-GW2D		WOD-WFF16-GW2S		WOD-WFF16-GW3		WOD-WFF16-GW4		WOD-WFF16-GW5		WOD-WFF16-GW6	
Sample Date:	03/12/03		03/12/03		03/18/03		03/14/03		03/13/03		03/17/03	
Duplicate:												
Upgradient Well (Y/N):	N		N		N		N		N		N	
1,1-Dichloroethene	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U
1,2,4-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethene (cis)	2		1		1	U	1	U	1	U	1	U
1,2-Dichloroethene (trans)	1	U	1	U	1	U	1	U	1	U	1	U
1,2-Dichloropropane	1	U	1	U	1	U	1	U	1	U	1	U
1,3,5-Trimethylbenzene	1	U	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U
2-Butanone	5	U	5	U	5	U	5	U	5	U	5	U
2-Hexanone	5	U	5	U	5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	5	U	5	U	5	U	5	U	5	U	5	U
Acetone	5	U	4	B	5	UR	5	UR	5	U	5	U
Benzene	8		1	U	1	U	1	U	1	U	1	U
Bromodichloromethane	1	U	1	U	1	U	1	U	1	U	1	U
Bromoform	1	U	1	U	1	U	1	U	1	U	1	U
Bromomethane	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Disulfide	1	U	1	U	1	U	1	U	1	U	1	U
Carbon Tetrachloride	1	U	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	1	U	1	U	1	U	1	U	1	U	1	U
Chloroethane	1	U	1	U	1	U	1	U	1	U	1	U
Chloroform	1	U	1	U	1	U	1	U	1	U	1	U
Chloromethane	1	U	1	U	1	U	1	U	1	U	1	U
cis-1,3-Dichloropropene	1	U	1	U	1	U	1	U	1	U	1	U
Cyclohexane	1	U	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	1	U	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	1	U	1	U	1	U	1	U	1	U	1	U
Ethylbenzene	8		1	U	1	U	1	U	1	U	1	U
Isopropylbenzene	1		1	U	1	U	1	U	1	U	1	U
m,p-xylene	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Acetate	1	U	1	U	1	U	1	U	1	U	1	U
Methyl Tert-butyl Ether (mtbe)	1	U	1	U	1	UL	1	U	1	U	1	U
Methylcyclohexane	1	U	1	U	1	U	1	U	1	U	1	U
Methylene Chloride	2	U	2	U	2	U	2	U	2	U	2	U
o-xylene	1	U	1	U	1	U	1	U	1	U	1	U
Styrene	1	U	1	U	1	U	1	U	1		1	U
Tetrachloroethene	1	U	1	U	1	U	1	U	1	U	1	U
Toluene	1	U	1	U	1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	1	U	1	U	1	U	1	U	1	U	1	U
Trichloroethene	1	U	1	U	1	U	1	U	1	U	1	U
Trichlorofluoromethane	1	U	1	U	1	U	1	U	1	U	1	U
Vinyl Chloride	1	U	1	U	1	U	1	U	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	WOD-WFF16-GW2D		WOD-WFF16-GW2S		WOD-WFF16-GW3		WOD-WFF16-GW4		WOD-WFF16-GW5		WOD-WFF16-GW6	
Sample Date:	03/12/03		03/12/03		03/18/03		03/14/03		03/13/03		03/17/03	
Duplicate:												
Upgradient Well (Y/N):	N		N		N		N		N		N	
Xylene (Total)	1	U	1	U	1	U	1	U	1	U	1	U
PESTICIDES/PCBS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aroclor-1016	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1221	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1232	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1242	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1248	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1254	1	U	1	U	1	U	1	U	1	UJ	1	U
Aroclor-1260	1	U	1	U	1	U	1	U	1	UJ	1	U
4,4'-DDD	NA		NA		NA		NA		NA		NA	
4,4'-DDE	NA		NA		NA		NA		NA		NA	
4,4'-DDT	NA		NA		NA		NA		NA		NA	
Aldrin	NA		NA		NA		NA		NA		NA	
Alpha-BHC	NA		NA		NA		NA		NA		NA	
Alpha-Chlordane	NA		NA		NA		NA		NA		NA	
Beta-BHC	NA		NA		NA		NA		NA		NA	
Delta-BHC	NA		NA		NA		NA		NA		NA	
Dieldrin	NA		NA		NA		NA		NA		NA	
Endosulfan I	NA		NA		NA		NA		NA		NA	
Endosulfan II	NA		NA		NA		NA		NA		NA	
Endosulfan Sulfate	NA		NA		NA		NA		NA		NA	
Endrin	NA		NA		NA		NA		NA		NA	
Endrin Aldehyde	NA		NA		NA		NA		NA		NA	
Endrin Ketone	NA		NA		NA		NA		NA		NA	
Gamma-BHC (Lindane)	NA		NA		NA		NA		NA		NA	
Gamma-Chlordane	NA		NA		NA		NA		NA		NA	
Heptachlor	NA		NA		NA		NA		NA		NA	
Heptachlor Epoxide	NA		NA		NA		NA		NA		NA	
Methoxychlor	NA		NA		NA		NA		NA		NA	
Toxaphene	NA		NA		NA		NA		NA		NA	
MISCELLANEOUS PARAMETERS												
Carbon Dioxide (mg/L)	74.1		43.3		10.6		5.4		60.5		139.3	
Chloride (mg/L)	4		5.7		8.6		4.2		3.4		12	
Ethane (ug/L)	0.5		0.05		0.01	U	0.01	U	0.01	U	0.01	
Ethene (ug/L)	0.04		0.01		0.01	U	0.01	U	0.01	U	0.01	U
Hydrogen (nm/L as gas)	14		10.2		1.9		39.2		NA		3.1	
Methane (ug/L)	876.3		495.5		10.6		1		8.1		0.2	U
Nitrate (mg/L)	0.1	UJ	0.03	J	1.5		0.23	J	0.22		12	
Nitrite (mg/L)	0.1	UJ	0.1	UJ	0.003	U	0.003	UJ	0.1	U	0.1	U
Nitrogen (mg/L)	8.1		7.6		7		13.7		13		12.8	
Oxygen (mg/L)	0.15	U	0.82		3.21		7.16		0.45		0.86	
Sulfate (mg/L)	7.2		6.2		4.4		4.7		26		38	
Total Organic Carbon (mg/L)	6	U	10		6	U	6	U	6	U	7.5	

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-WFF16-GW7**		**WOD-WFF16-GW7-DUP**	
Sample Date:	**03/18/03**		**03/18/03**	
Duplicate:	**WOD-WFF16-GW7-DUP**		**WOD-WFF16-GW7**	
Upgradient Well (Y/N):	**N**		**N**	
INORGANICS	**ug/L**		**ug/L**	
Aluminum	510	B	258	B
Antimony	3	UL	3	UL
Arsenic	3	UL	3	UL
Barium	70.5		63.8	
Beryllium	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U
Calcium	10600		10300	
Chromium	2.3	B	3.4	B
Cobalt	5.3	B	4.8	B
Copper	14.8	B	45.2	B
Iron	49900		47400	
Lead	4	U	4	U
Magnesium	11200		10900	
Manganese	310		306	
Mercury	0.13	U	0.13	U
Nickel	0.8	U	0.8	U
Potassium	2640		2530	
Selenium	9	U	9	U
Silver	18.6	B	7.2	B
Sodium	29200		30200	
Thallium	3	U	3	U
Vanadium	5.9	B	5.2	B
Zinc	15.3	B	36.7	B
SEMIVOLATILES	**ug/L**		**ug/L**	
2,2'-Oxybis(1-chloropropane)	5	U	5	U
2,4,5-Trichlorophenol	20	U	20	U
2,4,6-Trichlorophenol	5	U	5	U
2,4-Dichlorophenol	5	U	5	U
2,4-Dimethylphenol	5	UL	5	UL
2,4-Dinitrophenol	20	U	20	U
2,4-Dinitrotoluene	5	U	5	U
2,6-Dinitrotoluene	5	U	5	U
2-Chloronaphthalene	5	U	5	U
2-Chlorophenol	5	U	5	U
2-Methylnaphthalene	5	U	5	U
2-Methylphenol	5	U	5	U
2-Nitroaniline	20	U	20	U
2-Nitrophenol	5	U	5	U
3,3'-Dichlorobenzidine	5	U	5	U
3-Nitroaniline	20	U	20	U
4,6-Dinitro-2-methylphenol	20	U	20	U
4-Bromophenyl Phenyl Ether	5	U	5	U
4-Chloro-3-methylphenol	5	U	5	U
4-Chloroaniline	5	U	5	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-WFF16-GW7**		**WOD-WFF16-GW7-DUP**	
Sample Date:	**03/18/03**		**03/18/03**	
Duplicate:	**WOD-WFF16-GW7-DUP**		**WOD-WFF16-GW7**	
Upgradient Well (Y/N):	**N**		**N**	
4-Chlorophenyl Phenyl Ether	5	U	5	U
4-Methylphenol	5	U	5	U
4-Nitroaniline	20	U	20	U
4-Nitrophenol	20	U	20	U
Acenaphthene	5	U	5	U
Acenaphthylene	5	U	5	U
Anthracene	5	U	5	U
Benz(a)anthracene	5	U	5	U
Benzo(a)pyrene	5	U	5	U
Benzo(b)fluoranthene	5	U	5	U
Benzo(g,h,i)perylene	5	U	5	U
Benzo(k)fluoranthene	5	U	5	U
Bis(2-chloroethoxy)methane	5	U	5	U
Bis(2-chloroethyl)ether	5	U	5	U
Bis(2-ethylhexyl)phthalate	5	U	18	
Butylbenzylphthalate	5	U	5	U
Chrysene	5	U	5	U
Di-n-butylphthalate	5	U	5	U
Di-n-octylphthalate	5	U	5	U
Dibenz(a,h)anthracene	5	U	5	U
Dibenzofuran	5	U	5	U
Diethylphthalate	5	U	5	U
Dimethylphthalate	5	U	5	U
Fluoranthene	5	U	5	U
Fluorene	5	U	5	U
Hexachlorobenzene	5	U	5	U
Hexachlorobutadiene	5	U	5	U
Hexachlorocyclopentadiene	5	U	5	U
Hexachloroethane	5	U	5	U
Indeno(1,2,3-cd)pyrene	5	U	5	U
Isophorone	5	U	5	U
N-Nitroso-di-n-propylamine	5	U	5	U
N-Nitrosodiphenylamine (1)	5	U	5	U
Naphthalene	5	U	5	U
Nitrobenzene	5	U	5	U
Pentachlorophenol	20	U	20	U
Phenanthrene	5	U	5	U
Phenol	5	U	5	U
Pyrene	5	U	5	U
VOLATILES	**ug/L**		**ug/L**	
1,1,1-Trichloroethane	1	U	1	U
1,1,2,2-Tetrachloroethane	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U	1	U
1,1,2-Trichloroethane	1	U	1	U
1,1-Dichloroethane	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-WFF16-GW7**		**WOD-WFF16-GW7-DUP**	
Sample Date:	**03/18/03**		**03/18/03**	
Duplicate:	**WOD-WFF16-GW7-DUP**		**WOD-WFF16-GW7**	
Upgradient Well (Y/N):	**N**		**N**	
1,1-Dichloroethene	1	U	1	U
1,2,4-Trichlorobenzene	1	U	1	U
1,2,4-Trimethylbenzene	1	U	1	U
1,2-Dibromo-3-chloropropane	1	U	1	U
1,2-Dibromoethane	1	U	1	U
1,2-Dichlorobenzene	1	U	1	U
1,2-Dichloroethane	1	U	1	U
1,2-Dichloroethene (cis)	1	U	1	U
1,2-Dichloroethene (trans)	1	U	1	U
1,2-Dichloropropane	1	U	1	U
1,3,5-Trimethylbenzene	1	U	1	U
1,3-Dichlorobenzene	1	U	1	U
1,4-Dichlorobenzene	1	U	1	U
2-Butanone	5	U	5	U
2-Hexanone	5	U	5	U
4-Methyl-2-pentanone	5	U	5	U
Acetone	5	UR	4	B
Benzene	1	U	1	U
Bromodichloromethane	1	U	1	U
Bromoform	1	U	1	U
Bromomethane	1	U	1	U
Carbon Disulfide	1	U	1	U
Carbon Tetrachloride	1	U	1	U
Chlorobenzene	1	U	1	U
Chloroethane	1	U	1	U
Chloroform	1	U	1	U
Chloromethane	1	U	1	U
cis-1,3-Dichloropropene	1	U	1	U
Cyclohexane	1	U	1	U
Dibromochloromethane	1	U	1	U
Dichlorodifluoromethane	1	U	1	U
Ethylbenzene	1	U	1	U
Isopropylbenzene	1	U	1	U
m,p-xylene	1	U	1	U
Methyl Acetate	1	U	1	U
Methyl Tert-butyl Ether (mtbe)	1	UL	1	UL
Methylcyclohexane	1	U	1	U
Methylene Chloride	2	U	2	U
o-xylene	1	U	1	U
Styrene	1	U	1	U
Tetrachloroethene	1	U	1	U
Toluene	1	U	1	U
trans-1,3-Dichloropropene	1	U	1	U
Trichloroethene	1	U	1	U
Trichlorofluoromethane	1	U	1	U
Vinyl Chloride	1	U	1	U

Appendix A, Table 3a
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-WFF16-GW7**		**WOD-WFF16-GW7-DUP**	
Sample Date:	**03/18/03**		**03/18/03**	
Duplicate:	**WOD-WFF16-GW7-DUP**		**WOD-WFF16-GW7**	
Upgradient Well (Y/N):	**N**		**N**	
Xylene (Total)	1	U	1	U
PESTICIDES/PCBS	**ug/L**		**ug/L**	
Aroclor-1016	1	U	1	U
Aroclor-1221	1	U	1	U
Aroclor-1232	1	U	1	U
Aroclor-1242	1	U	1	U
Aroclor-1248	1	U	1	U
Aroclor-1254	1	U	1	U
Aroclor-1260	1	U	1	U
4,4'-DDD	NA		NA	
4,4'-DDE	NA		NA	
4,4'-DDT	NA		NA	
Aldrin	NA		NA	
Alpha-BHC	NA		NA	
Alpha-Chlordane	NA		NA	
Beta-BHC	NA		NA	
Delta-BHC	NA		NA	
Dieldrin	NA		NA	
Endosulfan I	NA		NA	
Endosulfan II	NA		NA	
Endosulfan Sulfate	NA		NA	
Endrin	NA		NA	
Endrin Aldehyde	NA		NA	
Endrin Ketone	NA		NA	
Gamma-BHC (Lindane)	NA		NA	
Gamma-Chlordane	NA		NA	
Heptachlor	NA		NA	
Heptachlor Epoxide	NA		NA	
Methoxychlor	NA		NA	
Toxaphene	NA		NA	
MISCELLANEOUS PARAMETERS				
Carbon Dioxide (mg/L)	211.7		223.2	
Chloride (mg/L)	24		24	
Ethane (ug/L)	0.01	U	0.01	U
Ethene (ug/L)	0.01	U	0.01	U
Hydrogen (nm/L as gas)	2.6		2	
Methane (ug/L)	9521.8		10263.8	
Nitrate (mg/L)	0.41		0.38	
Nitrite (mg/L)	0.003	U	0.003	U
Nitrogen (mg/L)	2.2		2.7	
Oxygen (mg/L)	0.15	U	0.15	U
Sulfate (mg/L)	28		27	
Total Organic Carbon (mg/L)	17		17	

Appendix E, Table 2
Data Summary of Waste Oil Dump Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOGW.DBF data retrieved on: 07/07/03

A3b

FILTERED GW

Appendix A, Table 3b
Data Summary of Waste Oil Dump Filtered Metals Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	MW3RF-20030220		MW3RF-20030312		WOD-MW4F		WOD-WFF15-GW1F		WOD-WFF15-GW2F		WOD-WFF15-GW7F		WOD-WFF16-GW1F		WOD-WFF16-GW2DF	
Sample Date:	02/20/03		03/12/03		03/17/03		03/12/03		03/12/03		03/14/03		03/18/03		03/12/03	
Duplicate:																
Upgradient Well (Y/N):	Y		Y		N		N		N		N		N		N	
INORGANICS	ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L		ug/L	
Aluminum	17	U	20.5	B	3470		51.2	B	1370	J	20.8	B	17	U	45.2	B
Antimony	3		3	U	3	U	3.6	B	3.3	B	3	U	3	U	4.6	B
Arsenic	3	U	3	U	3.4	B	3	U	3.4	B	15.1	B	3	U	19.5	
Barium	20.6		19.7	B	25.2		29.1	B	29.1	B	70.6		72.8		45.6	
Beryllium	0.5	U	0.5	U	0.66	B	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.78	K
Calcium	6610		12100		5360		9290		4430		4880		28800		6950	
Chromium	0.6	U	6.5		3.1	B	0.64	B	2.2	B	0.63	B	43.5		1.1	B
Cobalt	0.9	U	1.5	B	2.6	B	3.6	B	3.6	B	5	B	1.4	B	1.6	B
Copper	4	U	13.1	B	16.4	B	5.4	B	9.1	B	7.1	B	26.2	B	7	B
Iron	26	U	68.5	B	951		1690		6680		17700		64.6	B	21400	
Lead	4	U	4	U	4	U	4	U	4	U	54.7		4	U	4	U
Magnesium	5090		4240		1440		8500		2640		4760		4620		6030	
Manganese	12.8	B	6.2	B	11	B	214	J	14.5	J	663		21.8		97.3	J
Mercury	0.14	U	0.13	U	0.13	U	0.13	U	0.13	U	0.14	UL	0.13	U	0.13	U
Nickel	0.8	U	1.7	B	4	B	1.4	B	3.4	B	3.3	B	0.8	U	0.98	B
Potassium	1850		1390		2810		1230		1600		1930		5160		2120	
Selenium	9	U	9	U	9	U	9	U	9	U	9	U	9	U	9	UL
Silver	2	U	2	U	2		2	U	2	U	2	U	6.9	B	2	K
Sodium	4300		3200		9520		3230		11900		7660		6700		7560	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	1.1		0.7	U	4.6	B	0.7	U	2.6	B	1.6	B	1.5	B	0.7	UL
Zinc	7	U	42.6	B	38.6	B	25.9	B	37.8	B	26.1	B	26.2	B	31.2	B

Appendix A, Table 3b
Data Summary of Waste Oil Dump Filtered Metals Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Sample ID:	**WOD-WFF16-GW2SF**		**WOD-WFF16-GW3F**		**WOD-WFF16-GW4F**		**WOD-WFF16-GW5F**		**WOD-WFF16-GW6F**		**WOD-WFF16-GW7F**		**WOD-WFF16-GW7F-DUP**	
Sample Date:	**03/12/03**		**03/18/03**		**03/14/03**		**03/13/03**		**03/17/03**		**03/18/03**		**03/18/03**	
Duplicate:											**WOD-WFF16-GW7F-DUP**		**WOD-WFF16-GW7F**	
Upgradient Well (Y/N):	**N**		**N**		**N**		**N**		**N**		**N**		**N**	
INORGANICS	**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**		**ug/L**	
Aluminum	38.2	B	37	B	40.8	B	85.2	B	41.5	B	107	B	40.8	B
Antimony	3	B	3	U	3	U	3	U	3	U	3	UL	3	UL
Arsenic	9.5	B	3	U	3	U	3	U	3	U	3	UL	3	UL
Barium	110		14.5	B	22	B	31.3		42		57.2		57.7	
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U	0.7	U
Calcium	32500		1720		1140		26400		41000		9580		9450	
Chromium	0.67	B	0.94	B	0.71	B	0.89	B	0.69	B	3.8	B	1.2	B
Cobalt	2.4	B	1.2	B	1.9	B	2.2	B	2.2	B	5.8	B	5.5	B
Copper	5.2	B	13.8	B	6.3	B	6.5	B	12.5	B	22.5	B	6.9	B
Iron	5300		51.6	B	26	U	267		26	U	42000		40700	
Lead	4	U	4	U	4	U	4	U	4	U	4	U	4	U
Magnesium	10900		2210		1390		19300		6630		10500		10200	
Manganese	41.8	J	3.9	B	13.6		29.8		17.7		314		309	
Mercury	0.14	U	0.15	U	0.14	UL	0.13	U	0.13	U	0.13	U	0.13	U
Nickel	1.3	B	0.8	U	3	B	1.5	B	2.9	B	0.8	U	0.8	U
Potassium	2420		1260		1020		10700		1640		2410		2370	
Selenium	9	U	9	U	9	U	9	U	9	U	9	U	9	U
Silver	2	U	10	B	2	U	2	U	2	U	15	B	6.5	B
Sodium	3010		4390		2910		3790		8560		28400		31800	
Thallium	3	U	3	U	3	U	3	U	3	U	3	U	3	U
Vanadium	0.7	U	1.2	B	0.7	U	0.7	U	0.74	B	4.7	B	4.3	B
Zinc	20.9	B	19.3	B	19.7	B	27.8	B	28.6	B	23.9	B	9.4	B

Appendix E, Table 3
Data Summary of Waste Oil Dump Filtered Metals Groundwater Data
CTO 848, NASA Wallops Flight Facility
Wallops Island, Virginia

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\CTO848FTA_WOD\DATASUMDATABASES\WDWOGW.DBF data retrieved on: 07/07/03

APPENDIX B
SURVEY DATA

HORIZONTAL/VERTICAL COORDINATES
WALLOPS ISLAND FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA
SITE 16
DATE OF SURVEY MARCH 05, 2003

MONITORING WELL	TOP OF PVC (M)	RIM CASING (M)	GROUND(M)	NORTHING (M)	EASTING (M)	COMMENTS
FTA-MW104S	2.719	2.905	2.10	1183554.6728	3766334.6160	STICK-UP
WFF-MW4	3.149	3.210	2.47	1183554.1339	3766429.5123	STICK-UP
WFF15-MW3R	9.882	9.988	9.08	1183388.8387	3766392.7780	STICK-UP
WFF09-GW1	8.720	8.778	8.78	1183251.3246	3766420.2512	FLUSH
WFF15-GW1	1.911		1.31	1183465.8414	3766333.9686	NO-CASING
WFF15-GW2	2.807		1.98	1183435.8862	3766330.5993	NO-CASING
WFF15-GW3	2.652		1.71	1183411.9384	3766328.5660	NO-CASING
WFF15-GW7	9.321	9.388	8.47	1183434.9557	3766381.7628	STICK-UP
WFF16-GW1	9.263	9.293	8.41	1183439.8148	3766422.6826	STICK-UP
WFF16-GW2D	6.511	6.538	5.30	1183461.6788	3766368.0611	STICK-UP
WFF16-GW2S	6.480	6.553	5.30	1183461.5023	3766368.1965	STICK-UP
WFF16-GW3	4.932	5.017	4.18	1183495.5272	3766403.8651	STICK-UP
WFF16-GW4	4.554	4.621	3.72	1183502.7775	3766379.9886	STICK-UP
WFF16-GW5	3.804	3.819	2.99	1183495.9624	3766352.2127	STICK-UP
WFF16-GW6	2.944	3.112	2.26	1183486.7815	3766439.1924	STICK-UP
WFF16-GW7	2.731	2.807	1.92	1183462.4895	3766488.4007	STICK-UP

HORIZONTAL/VERTICAL COORDINATES
WALLOPS ISLAND FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA
SITE 16
DATE OF SURVEY MARCH 05, 2003

SOIL BORING	TOP OF PVC (M)	RIM CASING (M)	GROUND(M)	NORTHING (M)	EASTING (M)	COMMENTS
WOD-SB101			7.92	1183436.6245	3766366.6514	
WOD-SB102			8.90	1183424.6132	3766383.4359	
WOD-SB103			8.75	1183435.8445	3766417.1871	
WOD-SB104			7.89	1183442.7753	3766446.7219	
WOD-SB105			6.83	1183445.8715	3766470.0724	
WOD-SB106			5.52	1183458.2943	3766358.5715	
WOD-SB107			6.04	1183455.5078	3766368.5479	
WOD-SB108			5.73	1183460.7092	3766383.0582	
WOD-SB109			5.70	1183463.2802	3766406.1963	
WOD-SB110			4.79	1183484.6199	3766389.7413	
WOD-SB111			4.39	1183485.8040	3766364.6913	
WOD-SB112			1.98	1183510.4688	3766355.2720	
WOD-SB113			3.60	1183508.5227	3766379.6094	
WOD-SB114			3.17	1183532.3852	3766389.5938	
WOD-SB115			3.54	1183508.1188	3766403.2165	
WOD-SB116			2.96	1183530.9243	3766414.1165	
WOD-SB117			1.43	1183529.7298	3766438.5810	
WOD-SB118			4.54	1183483.6122	3766414.2113	
WOD-SB119			5.33	1183466.1718	3766431.2371	
WOD-SB120			3.20	1183505.6795	3766428.6235	
WOD-SB121			8.81	1183423.4714	3766375.9829	
WOD-SB122			8.99	1183425.7477	3766390.9379	
WOD-SB123			9.02	1183417.3062	3766384.1762	
WOD-SB124			2.87	1183483.4647	3766437.2027	
WOD-SB125			3.51	1183469.7212	3766455.1488	
WOD-SB126			2.41	1183453.5696	3766494.0197	

HORIZONTAL/VERTICAL COORDINATES
WALLOPS ISLAND FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA
SITE 16
DATE OF SURVEY MARCH 05, 2003

SOIL BORING	TOP OF PVC (M)	RIM CASING (M)	GROUND(M)	NORTHING (M)	EASTING (M)	COMMENTS
WOD-SB128			0.67	1183472.4081	3766479.0887	
WOD-SS129			0.79	1183472.8711	3766492.6542	
WOD-SS130			0.64	1183498.4210	3766458.8698	
WOD-SS131			0.58	1183521.9427	3766440.5833	
WOD-SS132			0.52	1183561.5238	3766445.4820	
WOD-SS133			0.55	1183568.5693	3766401.8699	
WOD-SS134			0.24	1183536.1998	3766372.5618	
WOD-SS135			0.40	1183529.4978	3766349.9346	
WOD-SS136			0.61	1183481.5042	3766335.5612	
WOD-SS137			0.82	1183453.6979	3766326.8893	
WOD-SS138			1.22	1183425.6151	3766322.8750	
WOD-SS139			0.61	1183476.0068	3766470.5863	

APPENDIX C
SAMPLE LOGS

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WOJ-WFF16-GW1
Sample Location: WOJ
Sampled By: Mike Shickora
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3-18-03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1440	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder pump	clear	6.69	0.281	15.0	0.6	6.89	147	0.0

PURGE DATA:

Date: 3-18-03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material		(see low flow purge sheets for details)						
Type: 2inch PVC								
Total Well Depth (TD): 26.48								
Static Water Level (WL): 24.27								
One Casing Volume(gal/ft): 0.28								
Start Purge (hrs): 1330								
End Purge (hrs): 1435								
Total Purge Time (min): 65								
Total Vol. Purged (gal/ft): 1.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Hydrogen Sulfide → 0.0
Alkalinity → 15 drops
FE^2 → 0.0

Circle if Applicable:

MS/MSD	Duplicate ID No.:
—	—

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-WFF16-GW1
DATE: 3/18/03

Time	Water Level	Flow	pH	Cond.	Turb.	DO	Temp.	Sal.	ORP	Comments
1330	25.01	100	7.38	0.375	873	7.68	15.6	0.0	40	start pump (very cloudy)
1335	25.10	100	6.83	0.331	54.6	7.71	15.4	0.0	108	very slight Tint (Tan)
1340	24.96	100	6.54	0.329	26.6	7.74	15.0	0.0	137	"
1345	24.87	100	6.55	0.330	13.7	7.74	14.7	0.0	142	clear
1350	24.87	100	6.55	0.331	4.41	7.73	14.6	0.0	145	"
1355	24.87	95	6.54	0.317	3.0	7.38	14.8	0.0	147	"
1400	24.88	95	6.53	0.307	2.8	7.01	14.9	0.0	148	"
1405	25.88	100	6.55	0.293	2.7	6.91	15.0	0.0	146	"
1410	25.84	100	6.58	0.288	1.7	6.89	15.0	0.0	147	"
1415	25.88	100	6.60	0.286	1.6	6.90	14.9	0.0	146	"
1420	25.89	100	6.63	0.285	1.0	6.91	14.9	0.0	147	"
1425	25.88	100	6.68	0.283	0.8	6.90	15.0	0.0	147	"
1430	25.89	100	6.69	0.282	0.9	6.90	15.0	0.0	148	"
1435	25.89	100	6.69	0.281	0.6	6.89	15.0	0.0	147	End purge
										collect sample

SIGNATURE(S): _____

PAGE___OF___

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: VS
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW1
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 3/18/03	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Time: 1440	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder Pump	Clear	6.69	0.281	15.0	0.6	8.89	0.0	147

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 147 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: Hach Model AL-APMG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 75 mg/L CaCO

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1 =	mg/L
_____	x 0.2 =	mg/L
_____	x 1.0 =	mg/L
_____	x 2.0 =	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: VS
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WOD-WFF16-GW1
Sample Location: Waste Oil Pump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: VS
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WOD-WFF16-GW1
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml: _____ 0.2ml: _____ 0.3ml: _____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0.0 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOO-WFF16-GW3
Sample Location: WFF16-GW3
Sampled By:
C.O.C. No.:

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/18/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1210	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Straw Method	Clear	5.01	0.070	12.5	2.31	7.98	283	0.0

PURGE DATA:

Date: 3/18/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Peristaltic Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 11.80								
Static Water Level (WL): 11.26								
One Casing Volume(gal/ft): 0.10								
Start Purge (hrs): 1055								
End Purge (hrs): 1205								
Total Purge Time (min): 60								
Total Vol. Purged (gal/ft): 1.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Hydrogen Sulfide = 0.0
Alkalinity = 35 ± 17.1
Ferrous Iron = 0.0

Circle If Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-WFF16-GW3
DATE: 3/18/03

Time	Water Level	Flow	pH	Cond.	Turb.	DO	Temp.	Sal.	ORP	Comments
(hrs)	(ft. BTOC)	(mL/min)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(deg C)	(ppt)	(mV)	
1055	11.36	100	5.82	0.074	4.8	8.16	12.9	0.0	214	Water clear No odor
1100	11.36	100	5.69	0.073	5.43	7.62	12.8	0.0	223	Purging done with
1105	11.36	100	5.52	0.072	2.71	7.47	12.9	0.0	231	peristaltic pump down
1110	11.36	100	5.39	0.072	2.51	7.47	12.8	0.0	237	to water level
1115	11.36	100	5.22	0.072	2.50	7.60	12.8	0.0	242	
1120	11.36	100	5.04	0.071	2.48	7.71	12.6	0.0	256	
1125	11.36	100	4.97	0.071	2.47	7.77	12.5	0.0	266	
1130	11.36	100	4.94	0.071	2.48	7.72	12.4	0.0	278	
1135	11.36	100	4.95	0.070	2.57	7.95	12.1	0.0	285	
1140	11.36	100	4.95	0.071	2.37	7.98	12.1	0.0	280	
1145	11.36	100	4.95	0.070	2.30	7.92	12.5	0.0	278	
1150	11.36	100	4.97	0.070	2.23	7.96	12.4	0.0	282	
1055	11.36	100	4.99	0.069	2.20	7.97	12.5	0.0	280	
1200	11.36	100	5.00	0.069	2.23	7.98	12.6	0.0	282	
1205	11.36	100	5.01	0.070	2.31	7.98	12.5	0.0	283	

SIGNATURE(S): _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW3
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/18/03								
Time: 1210	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Straw Method	Clear	5.01	0.070	12.15	2.31	7.98		283

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 283 Electrode Make & Model: Horiba D-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier	Concentration
_____	x 0.01 =	mg/L
_____	x 0.02 =	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: Hach Model AL-APMG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 75 mg/L CaCO

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1 =	mg/L
_____	x 0.2 =	mg/L
_____	x 1.0 =	mg/L
_____	x 2.0 =	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW3
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials): ____

Sample ID No.: WOD-WFF16-GW3
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml: _____ 0.2ml: _____ 0.3ml: _____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0.0 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WOD-WFF16-GW2
Sample Location: WFF16-GW7
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/18/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 0950	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	Clear	7.14	0.573	10.9	9.0	0.68	-51	0.0

PURGE DATA:

Date: 3/18/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material Type: 2" PVC		(See Low Flow Purge Data)						
Total Well Depth (TD): 11.45								
Static Water Level (WL): 4.95								
One Casing Volume(gal/L): 1.06								
Start Purge (hrs): 0755								
End Purge (hrs): 0935								
Total Purge Time (min): 100								
Total Vol. Purged (gal/L): 2.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	4
TCL SVOC	4 C	1 Liter Amber Glass	2
TCL Pest	4 C	1 Liter Amber Glass	2
TAL Metals	HNO3	500 ml Poly	2
Dissolved Metals	HNO3	500 ml Poly	2
TOC	HCl	40 ml VOA Vial	4
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	2

OBSERVATIONS / NOTES:

Duplicate Collected
Assigned time
1640

Circle if Applicable:

MS/MSD

Duplicate ID No.: DUP WOD-WFF16-GW17
Assigned time 1640

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: NOO-WFF16-GW7
DATE: 3/18/03

Time	Water Level	Flow	pH	Cond.	Turb.	DO	Temp.	Sal.	ORP	Comments
(Hrs)	(Ft. BTOC)	(mL/min)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(Deg. C)	(ppt)	(mV)	
0755	5.37	100	7.00	0.590	188	2.64	10.2	0.0	-49	start pumping
0800	5.65	100	7.05	0.577	164	1.82	10.6	0.0	-51	slight Tint (Tan)
0805	5.64	100	7.06	0.575	132	1.69	10.8	0.0	-50	"
0810	5.65	100	7.05	0.573	130	1.63	11.0	0.0	-49	"
0815	5.68	100	7.04	0.576	111	1.39	10.4	0.0	-50	"
0820	5.73	100	7.06	0.574	96	1.26	10.2	0.0	-51	"
0825	5.81	100	7.03	0.571	90	1.10	10.3	0.0	-48	"
0830	5.83	100	7.04	0.570	83	1.02	10.4	0.0	-51	"
0835	5.85	100	7.09	0.571	67	0.93	10.4	0.0	-52	"
0840	5.88	100	7.06	0.568	52	0.86	10.5	0.0	-51	"
0845	5.90	100	7.12	0.571	45	0.80	10.6	0.0	-53	"
0850	5.92	100	7.11	0.569	39	0.76	10.8	0.0	-52	"
0855	5.94	100	7.12	0.569	33	0.75	10.9	0.0	-53	"
0900	5.95	100	7.14	0.570	29	0.74	10.9	0.0	-53	clear
0905	5.96	100	7.13	0.571	27	0.74	10.8	0.0	-52	"
0910	5.97	100	7.14	0.572	25	0.71	10.7	0.0	-52	"
0915	5.98	100	7.14	0.572	16	0.70	10.7	0.0	-51	"
0920	5.98	100	7.14	0.572	13	0.69	10.8	0.0	-51	"
0925	5.99	100	7.14	0.572	9.9	0.68	10.8	0.0	-50	"
0930	5.99	100	7.14	0.573	9.4	0.69	10.8	0.0	-51	"
0935	5.99	100	7.14	0.573	9.0	0.68	10.9	0.0	-51	" End purge
										Collect Sample

SIGNATURE(S):

PAGE___OF___

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW7
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/18/03								
Time: 0950	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder Pump	clear	7.14	0.573	10.9	9.0	0.68	0.0	-51

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): -51 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: Hach Model AL-APMG/L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 25 mg/L $CaCO_3$

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16 GW7
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOO-WFF16-GW7
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8__ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8__ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0.0 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WOD-WFF16-GW6
Sample Location: GW-6
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/17/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1550	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	Clear	5.88	0.351	9.3	2.9	1.30	148	0.0

PURGE DATA:

Date: 3/17/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 2" PVC		See Low Flow Purge data						
Total Well Depth (TD): 10.93								
Static Water Level (WL): 5.40								
One Casing Volume(gal/l): 0.90								
Start Purge (hrs): 1500								
End Purge (hrs): 1550								
Total Purge Time (min): 50								
Total Vol. Purged (gal/l): 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-WFF16-GW6
DATE: 3/17/03

Time	Water Level	Flow	pH	Cond.	Turb.	DO	Temp.	Sal.	ORP	Comments
(Hrs)	(Ft. BTOC)	(mL/Min.)	(S.U.)	(mS/cm)	(NTU)	(mg/L)	(Deg. C)	(ppt)	(mV)	
1500	5.42	280	6.61	0.342	230	6.18	10.9	0.0	85	start pump
1505	5.42	280	6.58	0.339	145	5.05	10.4	0.0	89	slightly cloudy (Tan)
1510	5.43	280	6.28	0.341	68	4.13	9.8	0.0	110	"
1515	5.46	290	6.06	0.346	30	2.28	9.5	0.0	130	very slight Tint (Tan)
1520	5.47	290	5.98	0.353	16	1.71	9.4	0.0	137	clear
1525	5.48	290	5.89	0.353	9.5	1.47	9.3	0.0	143	"
1530	5.48	290	5.88	0.352	5.4	1.35	9.3	0.0	144	"
1535	5.48	290	5.89	0.352	3.5	1.33	9.3	0.0	144	"
1540	5.48	290	5.88	0.351	3.2	1.32	9.3	0.0	146	"
1545	5.48	290	5.88	0.352	3.3	1.31	9.3	0.0	147	"
1550	5.48	290	5.88	0.351	2.9	1.30	9.3	0.0	148	"

SIGNATURE(S): _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW6
Sample Location: Waste Oil Pump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/17/03								
Time: 1550	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	ORP
Method: Bladder Pump	Clear	5.88	0.351	9.3	2.9	1.30	0.0	148

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 148 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: Hach Model AL-APMG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 50 mg/L CaCO

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials): ____

Sample ID No.: WOD-WFF16-GW6
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: NASA WFF

Project No.: CTO 848

Sampled By: CMJ VS

Field Analyst: CM

Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WOD-WFF-16-GW6

Sample Location: Waste Oil Dump

Duplicate: ☐

Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8__ HACH MN-5 Other: _____ Analysis Time: _____

Program/Module: 525nm 41

Concentration: _____ mg/L Filtered: ☐

Digestion: ☐

Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes: _____

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8__ (IR-18C Color Wheel) Other: _____ Analysis Time: _____

Program/Module: 500nm 33

Concentration: 0 mg/L Filtered: ☐

Notes: _____

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____

Concentration: 0 mg/L Exceeded 5.0 mg/L range on color chart: ☐

Notes: _____

QA/QC Checklist:

All data fields have been completed as necessary: ☐

Correct measurement units are cited in the SAMPLING DATA block: ☐

Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐

Mulitplication is correct for each *Multiplier* table: ☐

Final calulated concentration is within the appropriate *Range Used* block: ☐

Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐

QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐

Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐

Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD - MW4
Sample Location: MW-4
Sampled By:
C.O.C. No.:

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/17/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1330	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	Le Brown	6.49	0.105	12.3	130	3.98	174	0.0

PURGE DATA:

Date: 3/17/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 2" PVC		(See	Low	Flow	Purge	Data	Sheet)	
Total Well Depth (TD): 24.75								
Static Water Level (WL): 6.37								
One Casing Volume(gal/L): 1.63								
Start Purge (hrs): 1055								
End Purge (hrs): 1320								
Total Purge Time (min): 145								
Total Vol. Purged (gal/L): 4.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-MW4
DATE: 3/17/03

Time (Hrs)	Water Level (Ft below TOC)	Flow (mL/Min)	pH (SU)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP (Mv)	Comments
1055	6.23	180	6.41	0.202	357	4.80	12.7	0.0	211	start purge - cloudy
1100	7.00	200	6.48	0.155	426	4.68	12.7	0.0	206	cloudy (tan)
1105	6.95	120	6.53	0.133	586	4.38	12.4	0.0	195	"
1110	6.95	120	6.51	0.127	598	4.31	12.4	0.0	193	"
1115	6.99	140	6.52	0.123	591	4.18	12.4	0.0	191	"
1120	7.05	140	6.50	0.118	571	4.11	12.4	0.0	192	"
1125	6.99	120	6.48	0.120	558	4.07	12.3	0.0	191	"
1130	6.98	120	6.44	0.122	542	4.03	12.2	0.0	190	"
1135	6.97	120	6.43	0.117	521	4.00	12.3	0.0	190	"
1140	6.96	120	6.44	0.116	503	4.01	12.2	0.0	187	"
1145	6.95	120	6.44	0.114	478	3.98	12.3	0.0	184	"
1150	6.95	120	6.45	0.115	441	3.97	12.4	0.0	177	"
1155	6.95	120	6.45	0.115	429	3.98	12.4	0.0	175	"
1200	6.94	120	6.46	0.115	404	3.96	12.4	0.0	177	"
1205	6.94	120	6.47	0.114	379	3.95	12.5	0.0	176	"
1210	6.94	120	6.47	0.113	299	3.96	12.4	0.0	178	"
1215	6.94	120	6.47	0.112	266	3.94	12.3	0.0	180	"
1220	6.94	120	6.47	0.111	234	3.93	12.3	0.0	182	"
1225	6.95	120	6.47	0.111	217	3.91	12.3	0.0	184	"
1230	6.95	120	6.48	0.110	202	3.90	12.2	0.0	183	"
1235	6.95	120	6.48	0.109	191	3.89	12.3	0.0	182	"
1240	6.95	120	6.47	0.109	177	3.87	12.3	0.0	179	"
1245	6.95	120	6.46	0.108	160	3.88	12.4	0.0	177	"
1250	6.94	120	6.45	0.108	155	3.90	12.3	0.0	176	"
1255	6.94	120	6.43	0.107	142	3.96	12.4	0.0	178	"
1300	6.94	120	6.45	0.106	136	3.98	12.4	0.0	175	"
1305	6.95	120	6.46	0.105	127	3.97	12.4	0.0	173	"
1310	6.95	120	6.47	0.105	121	3.97	12.4	0.0	171	"
1315	6.95	120	6.49	0.105	126	3.98	12.4	0.0	172	"
1320	6.96	120	6.49	0.105	130	3.98	12.3	0.0	174	"

SIGNATURE(S): _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-MW4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/17/03								
Time: 1330	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	ORP
Method: Bladder Pump	LT Brown	6.49	0.105	12.3	130	3.98	0.10	174

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 174 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: Hach AL-APMG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 20 mg/L CaCO

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1 =	mg/L
_____	x 0.2 =	mg/L
_____	x 1.0 =	mg/L
_____	x 2.0 =	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WOD-MW4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/VS
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WOD-MW 4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0.0 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type: _____
[] QA Sample Type: _____

Sample ID No.: WOD-WFF16-GW4
Sample Location: Waste Oil Dump
Sampled By: _____
C.O.C. No.: _____
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/14/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1000	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	Lt Brown	5.95	0.040	8.9	90.7	9.76	231	0.0

PURGE DATA:

Date: 3/14/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 2" PVC		(See Low Flow Purge Data Sheet)						
Total Well Depth (TD): 13.31								
Static Water Level (WL): 10.31								
One Casing Volume(gal/l): 0.49								
Start Purge (hrs): 0810								
End Purge (hrs): 0955								
Total Purge Time (min): 105								
Total Vol. Purged (gal/l): 2.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-WFF16-GW04
DATE: _____

Time (Hrs)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP (Mv)	Comments
0810	10.25	150	6.90	0.043	94.9	10.08	8.3	0.0	90	Lt. brown -
0815	10.73	100	5.96	0.043	87.6	8.62	8.0	0.0	147	
0820	10.69	100	5.41	0.040	127.5	8.52	8.2	0.0	173	
0825	10.70	100	5.27	0.040	89.0	8.63	8.3	0.0	188	
0830	10.70	150	5.23	0.040	80.8	8.90	8.3	0.0	197	
0835	10.70	100	5.22	0.040	167	9.28	8.6	0.0	227	
0840	10.60	100	5.25	0.040	100.5	9.39	8.6	0.0	2	
0845	10.60	100	5.27	0.040	95.7	9.46	8.5	0.0	237	
0850	10.65	100	5.29	0.040	78.7	9.52	8.4	0.0	242	
0855	10.63	100	5.32	0.040	64.9	9.56	8.5	0.0	244	
0900	10.64	100	5.35	0.040	56.2	9.56	8.6	0.0	244	
0905	10.63	100	5.39	0.041	50.9	9.59	8.6	0.0	245	
0910	10.62	100	5.42	0.040	45.5	9.55	8.6	0.0	240	
0915	10.62	100	5.49	0.039	42.2	9.44	8.5	0.0	243	
0920	10.61	100	5.49	0.039	40.1	9.49	8.7	0.0	245	
0925	10.60	100	5.50	0.040	38.5	9.53	8.9	0.0	246	
0930	10.60	100	5.55	0.040	35.4	9.72	9.4	0.0	246	
0935	10.70	125	5.72	0.040	40.1	9.81	9.1	0.0	242	
0940	10.78	150	5.76	0.040	49.5	9.83	9.2	0.0	241	
0945	10.78	100	5.96	0.041	52.8	9.78	8.9	0.0	233	
0950	10.80	100	5.95	0.040	78.9	9.74	8.9	0.0	234	
0955	10.80	100	5.95	0.040	90.7	9.76	8.9	0.0	231	Samples taken @ 1000 Hydrogen taken @ 1054

SIGNATURE (S): _____

PAGE___OF___

Tetr

PROJECT SIT
PROJECT NU

Time (Hrs.)	W (Ft
0810	
0815	
0820	
0825	
0830	
0835	
0840	
0845	
0850	
0855	
0900	
0905	
0910	
0915	
0920	
0925	
0930	
0935	
0940	
0945	
0950	
0955	

SIGNATURE(S): _

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 3/14/03	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	ORP (Eh)
Time: 1000	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	(+/- mv)
Method: Bladder Pump	Lt Brown	5.95	0.040	8.9	90.7	9.76	0.0	231

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv) 231 MV
Electrode Make & Model: Horiba U-22 ORP Meter
Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	0 to 1 ppm	K-7510	
☐	1 to 12 ppm	K-7512	

Analysis Time: _____

Equipment: HACH Digital Titrator OX-DT

Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	10 to 100 ppm	K-1910	
☐	100 to 1000 ppm	K-1920	
☐	250 to 2500 ppm	K-1925	

Analysis Time: _____

Equipment: HACH Digital Titrator CA-DT

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Notes:

Hydrogen, dissolved

Equipment: Bubble strip sampling field method

Start stripper at _____ (time)
End stripper at _____ (time)
Total stripper time _____
Pump rate _____ milliliters/minute

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM

Sample ID No.: WOD-WFF16-GW4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

Alkalinity: Hach Model AL-AP MG-L

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	10 to 100 ppm	K-9810	
☐	50 to 500 ppm	K-9815	
☐	100 to 1000 ppm	K-9820	

Analysis Time: _____

Filtered: ☐

Equipment: HACH Digital Titrator AL-DT

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Notes: 35 mg/L CaCO

Ferrous Iron (Fe^{2+}):

Equipment: DR-850 DR-8__ Range: 0 - 3.00 mg/L

Program/Module: 500nm 33

Concentration: 0.0 ppm

Analysis Time: _____

Equipment: IR-18C Color Wheel Range: 0 - 10 mg/L

Notes:

Filtered: ☐

Hydrogen Sulfide (H_2S):

Range: 0 - 5 mg/L

Equipment: HS-C Other: _____

Concentration: 0.0 ppm

Exceeded 5.0 mg/L range on color chart: ☐

Analysis Time: _____

Notes:

Sulfide (S^{2-}):

Equipment: Chemetrics Test Kit Range: 0 - 10 mg/L

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	0 to 1 ppm	K-9510	
☐	1 to 10 ppm	K-9510	

Analysis Time: _____

Filtered: ☐

Equipment: DR-850 DR-8__ Range: 0 - 0.70 mg/L

Program/Module: 610nm 93

Notes:

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SC
Field Analyst: CM

Sample ID No.: WOD-WFF16-GW4
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

Sulfate (SO_4^{2-}):

Equipment: DR-850 DR-8__ Range: 0 - 70 mg/L Concentration: _____ ppm
Program/Module: _____ 91 Analysis Time: _____
Standard Solution: ☐ Results: _____ Filtered: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrate (NO_3^--N):

Equipment: DR-850 DR-8__ Range: 0 - 0.50 mg/L (1) Concentration: _____ ppm
Program/Module: 55 Analysis Time: _____ Filtered: ☐
Standard Solution: ☐ Results: _____ Nitrite Interference Treatment: ☐ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Alternate forms: NO_2 _____ $NaNO_2$ _____ mg/L

Notes (1): If results are over limit use dilution method at step 3, 5ml sample 10ml DI result X3, range upto 1.5mg/L

Notes:

Nitrite (NO_2^--N):

Concentration: _____ ppm
Equipment: DR-850 DR-8__ Range: 0 - 0.350 mg/L Analysis Time: _____ Filtered: ☐
Program/Module: 62
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Notes:

Manganese (Mn^{2+}):

Concentration: _____ ppm
Equipment: DR-850 DR-8__ Range: 0 - 20.0 mg/L Analysis Time: _____ Filtered: ☐
Program/Module: 525nm 41
Standard Solution: ☐ Results: _____ Digestion: ☐ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Equipment: HACH MN-5 Range: 0 - 3 mg/L
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WWF 15 GW 7
Sample Location: GW-7
Sampled By: DW/VS
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Date: 3/14/03	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Time: 0955								
Method: Bladder Pump	slightly cloudy	5.42	0.116	13.1	15	0.79	3	0

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Date: 3/14/03								
Method: Bladder Pump								
Monitor Reading (ppm): 10.4	—	SEE	LOW FLOW	PURGE	DATA	SHEETS	—	—
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 33.08								
Static Water Level (WL): 24.92								
One Casing Volume(gal/L): 1.63								
Start Purge (hrs): 0808								
End Purge (hrs): 0950								
Total Purge Time (min): 102								
Total Vol. Purged (gal/L): 3								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Pvol.L = 24.80
WL = 24.92

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Donald W Kaber

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WFF 15 GW 7
DATE: 3/19/03

Time (Hrs)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP (Mv)	Comments
0808	24.92	110								Start
0815		110	4.97	.104	155	9.92	11.4	0	123	
0820		110	5.07	.097	127	1.92	12.8	0	102	
0825		110	5.12	.096	96	1.62	12.8	0	93	
0830		110	5.11	.095	93	1.48	12.9	0	88	
0835		110	5.11	.094	91	1.27	13.3	0	84	
0840		110	5.12	.093	92	1.17	13.5	0	81	
0845		110	5.12	.093	82	1.08	13.8	0	74	
0850		110	5.14	.094	45	1.08	14.0	0	67	
0855		110	5.17	.095	38	1.02	13.9	0	56	
0900		110	5.20	.096	31	0.99	13.4	0	49	
0905		110	5.24	.099	27	0.94	12.6	0	40	
0910		110	5.28	0.102	21	0.90	12.9	0	32	
0915		110	5.31	0.106	19	0.84	12.8	0	24	
0920		110	5.33	0.107	~~22~~ 17	0.81	13.3	0	22	
0925		110	5.35	0.109	16	0.81	13.3	0	17	
0930		110	5.37	0.111	15	0.80	13.4	0	14	
0935		110	5.39	0.112	15	0.79	13.8	0	10	
0940		110	5.40	0.114	15	0.78	13.7	0	8	
0945		110	5.41	0.114	15	0.79	13.5	0	6	
0950		110	5.42	0.116	15	0.79	13.1	0	3	
0955		110								Collect Sample

SIGNATURE(S): _____

PAGE___OF___

FP
3 6 50

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF15 GW7
Sample Location:
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/14/03								
Time: 0955	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder Pump	slightly cloudy	5.42	0.116	13.1	15	0.79	0	

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 3 Electrode Make & Model:

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: ____mg/L) Analysis Time:

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
	x 0.01	=	mg/L
	x 0.02	=	mg/L

CHEMetrics: ____mg/L

Notes:

Alkalinity:

Analysis Time:

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: ____mg/L) Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	____ & ____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	____ & ____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	____ & ____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	____ & ____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	____ & ____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	____ & ____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: ____mg/L

Notes: 50 mg/l as $CaCO_3$

Standard Additions: ☐ Titrant Molarity:____ Digits Required: 1st.:____ 2nd.:____ 3rd.:____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: ____mg/L) Analysis Time:

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
	x 0.1	=	mg/L
	x 0.2	=	mg/L
	x 1.0	=	mg/L
	x 2.0	=	mg/L

CHEMetrics: ____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:____ Digits Required: 1st.:____ 2nd.:____ 3rd.:____

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Page __ of __

Project Site Name: _____ Sample ID No.: _____

Project No.: _____ Sample Location: _____

Sampled By: _____ Duplicate: ☐

Field Analyst: _____ Blank: ☐

Field Form Checked as per QA/QC Checklist (initials): _____

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____

Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐

Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____

Program/Module: 91

Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

Nitrite (NO_2^--N):

Analysis Time: _____

Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐

Program/Module: 60

Concentration: _____ mg/L Reagent Blank Correction: ☐

Standard Solution: ☐ Results: ☐

Notes:

Nitrate (NO_3^--N):

Analysis Time: _____

Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐

Program/Module: 55

Concentration: _____ mg/L

Nitrite Interference Treatment: ☐

Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: _____ Sample ID No.: WFF15GW7

Project No.: _____ Sample Location: _____

Sampled By: _____ Duplicate: ☐

Field Analyst: _____ Blank: ☐

Field Form Checked as per QA/QC Checklist (initials): _____

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____

Program/Module: 525nm 41

Concentration: _____ mg/L Filtered: ☐

Digestion: ☐

Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐

Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Notes: _____

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____

Program/Module: 500nm 33

Concentration: 6 mg/L Filtered: ☐

Notes: _____

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____

Concentration: 3 mg/L Exceeded 5.0 mg/L range on color chart: ☐

Notes: _____

QA/QC Checklist:

All data fields have been completed as necessary: ☐

Correct measurement units are cited in the SAMPLING DATA block: ☐

Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐

Mulitplication is correct for each *Multiplier* table: ☐

Final calulated concentration is within the appropriate *Range Used* block: ☐

Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐

QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐

Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐

Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WOD-WFF16-GW5
Sample Location: WOD-WFF16-GW5
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	TBD
Date: 3/13/03	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	541 %
Time: 0750								
Method: Bladder Pump	Lt Brn	7.72	0.324	10.2	27.4	3.06	3	0.0

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Date: 3/12/03								
Method: Bladder pump								
Monitor Reading (ppm): 0.8								
Well Casing Diameter & Material Type: 2" PVC		(See Low Flow Purge Data Sheet)						
Total Well Depth (TD): 11.70'								
Static Water Level (WL): 8.32'								
One Casing Volume(gal/ℓ): 0.57								
Start Purge (hrs): 1420								
End Purge (hrs): 1530								
Total Purge Time (min): 40								
Total Vol. Purged (gal/ℓ): 1.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD WFF 16-GW5
DATE: 3/12/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP MV	Comments
1420	9.30	100	7.70	0.378	48.5	5.05	10.5	0.0	-33	
1425	9.58	100	7.71	0.394	46.2	2.72	10.4	0.0	-39	
1430	9.70	100	7.68	0.392	42.9	2.25	10.4	0.0	-37	
1435	10.0'	50	7.63	0.386	41.3	1.87	10.2	0.0	-32	
1440	10.28	50	7.60	0.376	40.5	1.96	10.1	0.0	-27	
1445	10.30	50	7.61	0.315	38.9	2.30	10.0	0.0	-17	
1450	10.35	25	7.56	0.316	35.6	5.40	10.4	0.0	5	Well dry " " Recovery
1455										
1500										
1505										
1510										
1515										
1520	9.70	100	7.75	0.327	76.0	5.46	10.4	0.0	10	
1525	9.84	100	7.75	0.326	50.6	3.35	10.2	0.0	12	
1530	10.30	100	7.72	0.324	27.4	3.06	10.2	0.0	3	
1535		50								

PAGE___OF___

SIGNATURE(S): _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-GW5
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/13/03								
Time: 0750	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	ORP
Method: Bladder Pump	LT Brn	7.72	0.324	10.12	27.4	3.06	0.0	3

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 3 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity:

Hach Model AL-APMG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 675 mg/L CaCO

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1 =	mg/L
_____	x 0.2 =	mg/L
_____	x 1.0 =	mg/L
_____	x 2.0 =	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: ETO 848
Sampled By: SG/CM
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-6-W5
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: SB/CM
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WDD-WFF16-GWS
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8__ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8__ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0.1 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WFF16-GW-25
Sample Location: Waste Oil Dump
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/12/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1435	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	clear	6.77	0.258	12.1	9	2.79	-51	0

PURGE DATA:

Date: 3/12/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.5								
Well Casing Diameter & Material	—	SEE LOW FLOW PURGE DATA SHEET					—	
Type: 2" PVC								
Total Well Depth (TD): 23.03								
Static Water Level (WL): 15.98								
One Casing Volume(gal/L): 1.15								
Start Purge (hrs): 1244								
End Purge (hrs): 1430								
Total Purge Time (min): 106								
Total Vol. Purged (gal/L): 2.3								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald Whalen

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD GW2S
DATE: 3/12/03

Time (Hrs)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP (MV)	Comments
1244	15.98									start purge
1245	16.51	110	6.83	0.300	83	5.69	12.8	0	-3	
1250	16.88	110	6.83	0.299	46	3.12	12.7	0	-7	
1255	17.28	150	6.83	0.299	39	2.88	12.9	0	-8	
1300	17.34	50	6.83	0.304	36	2.83	12.9	0	-6	
1305	17.43	60	6.84	0.302	34	2.84	12.6	0	-21	
1310	17.51	100	6.84	0.300	33	2.85	12.5	0	-35	
1315	17.58	100	6.83	0.297	31	2.79	12.5	0	-41	
1320	17.61	100	6.83	0.294	27	2.76	12.5	0	-47	
1325	17.62	100	6.83	0.292	24	2.73	12.7	0	-48	
1330	17.85	100	6.82	0.290	23	2.68	12.4	0	-49	
1335	17.98	100	6.82	0.288	21	2.64	12.1	0	-50	
1340	18.12	100	6.82	0.285	19	2.84	12.1	0	-49	
1345	18.23	100	6.82	0.284	18	3.12	12.1	0	-48	
1350	18.28	100	6.81	0.281	17	3.03	12.2	0	-49	
1355	18.31	100	6.81	0.279	15	2.92	12.4	0	-53	
1400	18.37	100	6.81	0.279	14	2.84	12.5	0	-53	
1405	18.44	100	6.80	0.270	14	2.71	12.5	0	-53	
1410	18.47	100	6.80	0.268	13	2.79	12.5	0	-53	
1415	18.50	100	6.79	0.266	13	2.78	12.4	0	-53	
1420	18.53	100	6.78	0.263	11	2.77	12.3	0	-52	
1425	18.57	100	6.78	0.260	10	2.76	12.2	0	-52	
1430		100	6.77	0.258	9	2.79	12.1	0	-51	
1435										collect SAMPLE

SIGNATURE(S): Daniel Wheeler

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-GW-25'
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/12/03								
Time: 1435	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder Pump	clear	6.77	0.258	12.1	9	2.79	0	

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): -51 Electrode Make & Model:

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity:

Analysis Time: _____

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 160 mg/L as $CaCO_3$

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: NASA WFF | Sample ID No.: WFF16-GW25
Project No.: CTO 848 | Sample Location: Waste Oil Dup
Sampled By: VS/DW | Duplicate: ☐
Field Analyst: DW | Blank: ☐
Field Form Checked as per QA/QC Checklist (initials): ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Project Site Name: NASA WFF
Project No.: CTO 548
Sampled By: VS/DW
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WFF16-GW2S
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8__ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8__ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 3.8 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-WFF15-GW1
Sample Location: WOD-WFF15-GW1
Sampled By:
C.O.C. No.:

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

	Color Visual	pH Standard	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/l	ORP mv	TBD Sal %
Date: 3/12/03								
Time: 1230								
Method: Bladder Pump	Clear	6.84	0.133	12.4	2.31	0.71	38	0.0

PURGE DATA:

	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Date: 3/12/03								
Method: Bladder pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material Type: 2" PVC		(See Low Flow Purge Data Sheet)						
Total Well Depth (TD): 10.30'								
Static Water Level (WL): 2.88'								
One Casing Volume(gal/L): 1.21								
Start Purge (hrs): 1115								
End Purge (hrs): 1220								
Total Purge Time (min): 65								
Total Vol. Purged (gal/L): 3.0								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	6
TCL SVOC	4 C	1 Liter Amber Glass	3
TCL Pest	4 C	1 Liter Amber Glass	3
TAL Metals	HNO3	500 ml Poly	3
Dissolved Metals	HNO3	500 ml Poly	3
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chlo	4 C	500 ml Poly	3

OBSERVATIONS / NOTES:

Alk. = $\frac{50}{17.1}$ =
Hyd. Sulfide = 0.1
Ferris Fe = 2.0

MS/MSD collected

Circle if Applicable:

(MS/MSD) | Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD-WFF15-GW1
DATE: 3/12/03

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP mV	Comments
1115	3.40	300	6.87	0.143	94.0	5.62	12.2	0.0	49	Yellowish-Orange
1120	3.65	200	6.90	0.141	60.1	1.84	12.2	0.0	45	
1125	3.58	100	6.90	0.142	54.9	1.34	12.1	0.0	48	
1130	3.58	125	6.90	0.140	51.0	0.98	12.1	0.0	57	
1135	3.59	125	6.90	0.140	49.8	0.91	12.2	0.0	59	
1140	3.60	125	6.88	0.138	35.6	0.79	12.1	0.0	41	
1145	3.59	125	6.87	0.138	12.9	0.76	12.1	0.0	39	
1150	3.58	200	6.86	0.135	7.35	0.76	12.1	0.0	39	Clear
1155	SG 3.77	150	6.85	0.133	6.86	0.81	12.1	0.0	38	
1200	3.59	175	6.86	0.133	5.10	0.84	12.2	0.0	38	
1205	3.62	175	6.90	0.133	4.56	0.73	12.4	0.0	38	
1210	3.65	175	6.89	0.133	3.65	0.75	12.4	0.0	38	
1215	3.66	175	6.88	0.133	2.97	0.72	12.4	0.0	38	
1220	3.68	175	6.89	0.133	2.31	0.71	12.4	0.0	38	
										Samples taken @ 1230
										Hydrogen taken @ 1355

SIGNATURE(S): _____

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF16-G-W.1
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

Date: 3/12/03	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	ORP (Eh)
Time: 1330	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	(+/- mv)
Method:	clear	6.89	0.133	12.4	2.31	0.71	0.0	38

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv) 38 MV Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Analysis Time: _____

Range Used:	Range	Method	Concentration ppm
☐	0 to 1 ppm	K-7510	
☐	1 to 12 ppm	K-7512	

Equipment: HACH Digital Titrator OX-DT

Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

Notes:

Carbon Dioxide:

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Analysis Time: _____

Range Used:	Range	Method	Concentration ppm
☐	10 to 100 ppm	K-1910	
☐	100 to 1000 ppm	K-1920	
☐	250 to 2500 ppm	K-1925	

Equipment: HACH Digital Titrator CA-DT

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Notes:

Hydrogen, dissolved

Equipment: Bubble strip sampling field method

Start stripper at _____ (time)

End stripper at _____ (time)

Total stripper time _____

Pump rate _____ milliliters/minute

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: SG/CM
Field Analyst: CM

Sample ID No.: WOD-WFF15-GW1
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

Alkalinity: Hach Model AL-APMG-L

Equipment: Chemetrics Test Kit

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	10 to 100 ppm	K-9810	
☐	50 to 500 ppm	K-9815	
☐	100 to 1000 ppm	K-9820	

Analysis Time: _____

Filtered: ☐

Equipment: HACH Digital Titrator AL-DT

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier	Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1 =	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4 =	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0 =	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0 =	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0 =	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0 =	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Notes: 250 mg/L CaCO

Ferrous Iron (Fe^{2+}):

Equipment: DR-850 DR-8__ Range: 0 - 3.00 mg/L
Program/Module: 500nm 33

Concentration: 2.0 ppm

Analysis Time: _____

Equipment: (IR-18C Color Wheel) Range: 0 - 10 mg/L

Notes:

Filtered: ☐

Hydrogen Sulfide (H_2S):

Range: 0 - 5 mg/L

Equipment: (HS-C) Other: _____

Concentration: 0.1 ppm

Exceeded 5.0 mg/L range on color chart: ☐

Analysis Time: _____

Notes:

Sulfide (S^{2-}):

Equipment: Chemetrics Test Kit Range: 0 - 10 mg/L

Concentration: _____ ppm

Range Used:	Range	Method	Concentration ppm
☐	0 to 1 ppm	K-9510	
☐	1 to 10 ppm	K-9510	

Analysis Time: _____

Filtered: ☐

Equipment: DR-850 DR-8__ Range: 0 - 0.70 mg/L
Program/Module: 610nm 93

Notes:

Note: Analyte, method, and/or equipment may be deleted from form if not being performed.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Sample ID No.: WOD-WFF15-6W1
Project No.: CTO 848
Sample Location: Waste Oil Dump
Sampled By: CM/SC
Duplicate: ☐
Field Analyst: CM
Blank: ☐

Sulfate (SO_4^{2-}):

Equipment: DR-850 DR-8__ Range: 0 - 70 mg/L Concentration: _____ ppm
Program/Module: _____ 91 Analysis Time: _____
Standard Solution: ☐ Results: _____ Filtered: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrate (NO_3^--N):

Equipment: DR-850 DR-8__ Range: 0 - 0.50 mg/L (1) Concentration: _____ ppm
Program/Module: 55 Analysis Time: _____ Filtered: ☐
Standard Solution: ☐ Results: _____ Nitrite Interference Treatment: ☐ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Alternate forms: NO_2 _____ $NaNO_2$ _____ mg/L

Notes (1): If results are over limit use dilution method at step 3, 5ml sample 10ml DI result X3, range upto 1.5mg/L

Notes:

Nitrite (NO_2^--N):

Concentration: _____ ppm
Equipment: DR-850 DR-8__ Range: 0 - 0.350 mg/L Analysis Time: _____ Filtered: ☐
Program/Module: 62
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Notes:

Manganese (Mn^{2+}):

Concentration: _____ ppm
Equipment: DR-850 DR-8__ Range: 0 - 20.0 mg/L Analysis Time: _____ Filtered: ☐
Program/Module: 525nm 41
Standard Solution: ☐ Results: _____ Digestion: ☐ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____

Equipment: HACH MN-5 Range: 0 - 3 mg/L
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WFF16-GW-20
Sample Location: WOD
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/12/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 1135	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	Clear	6.32	0.160	14.3	7.5	0.49	-51	0

PURGE DATA:

Date: 3/12/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0	—	see	low flow Purge Data			sheet	—	
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 32.12								
Static Water Level (WL): 16.38								
One Casing Volume(gal/ft): 1.63								
Start Purge (hrs): 1019								
End Purge (hrs): 1120								
Total Purge Time (min): 1135								
Total Vol. Purged (gal/L): 3.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): Donald W Kalen

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOD GW 2D
DATE: 3/12/03

Time (Hrs)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP (MV)	Comments
1019	16.38	250								start purge
1020	16.64	190	6.04	0.146	76	5.52	13.5	0	-17	
1025	16.53	190	6.27	0.149	50	1.63	13.7	0	-32	
1030	16.53	190	6.28	0.153	35	1.10	13.7	0	-39	
1035	16.53	190	6.30	0.156	20	0.81	13.9	0	-45	
1040	16.53	190	6.31	0.157	19	0.76	13.9	0	-46	
1045	16.53	190	6.31	0.159	18	0.70	13.9	0	-49	
1050	16.53	190	6.28	0.151	14	0.71	14.0	0	-41	
1055	16.53	190	6.29	0.158	11	0.63	14.1	0	-47	
1100	16.53	220	6.31	0.161	8.6	0.56	14.2	0	-51	
1105	16.53	220	6.31	0.161	7.2	0.52	14.3	0	-52	
1110	16.53	220	6.32	0.162	7.2	0.50	14.3	0	-53	
1115	16.53	220	6.32	0.161	7.9	0.50	14.3	0	-52	
1120	16.53	220	6.32	0.160	7.5	0.49	14.3	0	-51	
1135										collect sample

SIGNATURE(S): David Mahaffey

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-GW-2D
Sample Location: WOD
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/12/03								
Time: 1135	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder pump	clear	6.32	0.160	14.3	7.5	0.49	0	

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): -51 Electrode Make & Model:

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: ____mg/L) Analysis Time:

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
	x 0.01	=	mg/L
	x 0.02	=	mg/L

CHEMetrics: ____mg/L

Notes:

Alkalinity:

Analysis Time:

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: ____mg/L) Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	____ & ____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	____ & ____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	____ & ____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	____ & ____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	____ & ____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	____ & ____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: ____mg/L

Notes: 90 mg/l as $CaCO_3$

Standard Additions: ☐ Titrant Molarity:____ Digits Required: 1st.:____ 2nd.:____ 3rd.:____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: ____mg/L) Analysis Time:

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
	x 0.1 =	mg/L
	x 0.2 =	mg/L
	x 1.0 =	mg/L
	x 2.0 =	mg/L

CHEMetrics: ____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:____ Digits Required: 1st.:____ 2nd.:____ 3rd.:____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Page __ of __

Project Site Name: Waste Oil Dump
Project No.: CTO 548
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-6-W-2D
Sample Location: WOD
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Tetra Tech NUS, Inc.

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Page __ of __

Project Site Name: Waste Oil Dump
Project No.: CTO 848
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-GW-2D
Sample Location: WOD
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8__ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8__ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 9 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.1 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type:
[] QA Sample Type:

Sample ID No.: WOD-WFF15-GW2
Sample Location: Waste Oil Dump
Sampled By:
C.O.C. No.:
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/12/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	TBD
Time: 0950	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	Sal o/oo
Method: Bladder Pump	LT Brn	6.29	0.141	8.8	18.09	2.33	0	0.0

PURGE DATA:

Date: 3/12/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0.0								
Well Casing Diameter & Material								
Type: 2" PVC		(See Low Flow Purge Data Sheet)						
Total Well Depth (TD): 8.77								
Static Water Level (WL): 4.54								
One Casing Volume(gal/L): 0.89								
Start Purge (hrs): 0810								
End Purge (hrs): 0945								
Total Purge Time (min): 95								
Total Vol. Purged (gal/L): 2.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chlo	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WOOMW-GW2
DATE:

Time (Hrs.)	Water Level (Ft. below TOC)	Flow (mL/Min.)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Celsius)	Sal. (%)	ORP MV	Comments
0810	4.60	75	6.11	0.146	52.6	2.94	9.1	0.0	30	Lt. grey color
0815	4.61	125	6.18	0.140	45.9	2.52	8.8	0.0	29	
0820	4.60	125	6.13	0.135	35.2	2.46	8.6	0.1	29	
0825	4.61	100	6.04	0.136	27.8	2.58	8.6	0.1	35	
0830	4.61	100	5.89	0.142	25.4	2.95	8.5	0.1	41	
0835	4.61	100	6.00	0.143	23.1	2.72	8.5	0.0	28	
0840	4.61	100	6.02	0.144	21.9	2.55	8.4	0.0	26	
0845	4.61	100	6.04	0.143	20.9	2.61	8.5	0.0	23	
0850	4.61	100	6.06	0.143	20.6	2.57	8.4	0.0	21	
0900	4.61	100	6.10	0.142	19.28	2.45	8.5	0.0	18	
0905	4.62	100	6.22	0.143	18.85	2.17	8.4	0.0	3	
0910	4.62	100	6.24	0.143	18.65	2.17	8.4	0.0	2	
0915	4.62	100	6.25	0.141	18.59	2.09	8.4	0.0	2	
0920	4.63	100	6.29	0.142	18.05	2.13	8.5	0.0	-2	
0925	4.61	100	6.36	0.141	17.79	2.13	8.4	0.0	-6	
0930	4.60	100	6.36	0.142	18.00	2.97	8.4	0.0	-5	
0935	4.59	150	6.31	0.140	18.09	2.38	8.9	0.0	-1	
0940	4.59	150	6.31	0.141	18.10	2.35	8.9	0.0	-1	
0945	4.59	150	6.29	0.141	18.09	2.33	8.8	0.0	0	
										Samples taken @ 0950

SIGNATURE(S): _____

PAGE___OF___

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF15-GW2
Sample Location: WFF15-GW2
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/12/03								
Time: 0950	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	ORP
Method: Bladder Pump	LT Brn	6.29	0.141	5.18	18.09	2.33	0.10	0

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 0 Electrode Make & Model: Horiba U-22 ORP Meter

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: 10 + 17.1

Analysis Time: _____

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: 50 mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count			Concentration
_____	x 0.1	=	mg/L
_____	x 0.2	=	mg/L
_____	x 1.0	=	mg/L
_____	x 2.0	=	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity:_____ Digits Required: 1st.:_____ 2nd.:_____ 3rd.:_____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD-WFF15-GW2
Sample Location: West Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 848
Sampled By: CM/SG
Field Analyst: CM
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WOD WFF15-G-WZ
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml: _____ 0.2ml: _____ 0.3ml: _____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 2.5 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0.5 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

GROUNDWATER SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[] Domestic Well Data
[X] Monitoring Well Data
[] Other Well Type: _____
[] QA Sample Type: _____

Sample ID No.: WFF16-MW3R
Sample Location: WOD
Sampled By: _____
C.O.C. No.: _____
Type of Sample:
[X] Low Concentration
[] High Concentration

SAMPLING DATA:

Date: 3/12/03	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	SAL
Time: 0900	Visual	Standard	mS/cm	°C	NTU	mg/l	mv	(%)
Method: Bladder Pump	clear	6.41	0.113	14.8	5.8	8.56	107	0

PURGE DATA:

Date: 3/12/03	Volume	pH	S.C.	Temp. (C)	Turbidity	DO	ORP	TBD
Method: Bladder Pump								
Monitor Reading (ppm): 0	—	See Low Flow Purge Data Sheet					—	
Well Casing Diameter & Material								
Type: 2" PVC								
Total Well Depth (TD): 32.3								
Static Water Level (WL): 26.33								
One Casing Volume(gal/ft): 1.00								
Start Purge (hrs): 0753								
End Purge (hrs): 0855								
Total Purge Time (min): 62								
Total Vol. Purged (gal/ft): 3.5								

SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected
TCL VOC	HCl	40 ml VOA Vial	2
TCL SVOC	4 C	1 Liter Amber Glass	1
TCL Pest	4 C	1 Liter Amber Glass	1
TAL Metals	HNO3	500 ml Poly	1
Dissolved Metals	HNO3	500 ml Poly	1
TOC	HCl	40 ml VOA Vial	2
Methane, Ethane, Ethene, Hydrogen	HCl	40 ml VOA Vial	2
Nitrate, Nitrite, Sulfate, Chloride	4 C	500 ml Poly	1

OBSERVATIONS / NOTES:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): David W Kalen

TBD: To Be Determined

Tetra Tech NUS, Inc.

LOW FLOW PURGE DATA SHEET

PROJECT SITE NAME: NASA WFF
PROJECT NUMBER: CTO 848

WELL ID.: WFF 16 MW 3R
DATE: 3/12/03

Time (Hrs)	Water Level (Ft. below TOC)	Flow (mL/Min)	pH (S.U.)	Cond. (mS/cm)	Turb. (NTU)	DO (mg/L)	Temp. (Deg.C)	Sal. (%)	ORP (Mv)	Comments
0753	26.33									Start Purge
0755			6.26	0.115	180	9.83	14.9	0	202	
0800	26.46	200	6.38	0.115	180	9.62	14.3	0	159	
0805	26.42	200	6.40	0.116	110	8.59	14.3	0	118	
0810	26.42	200	6.41	0.121	75	8.60	14.0	0	89	
0815	26.42	200	6.42	0.126	21	8.60	14.2	0	63	
0820	26.42	200	6.43	0.123	15	8.47	14.4	0	74	
0825	26.42	200	6.43	0.121	14	8.53	14.3	0	77	
0830	26.42	200	6.43	0.119	12	8.62	14.1	0	80	
0835	26.42	200	6.42	0.116	9.1	8.55	14.3	0	88	
0840	26.42	200	6.42	0.115	7.8	8.56	14.2	0	95	
0845	26.42		6.42	0.113	5.7	8.63	14.3	0	100	
0850	26.42	200	6.41	0.113	4.9	8.45	14.8	0	103	
0855	26.42	200	6.41	0.113	5.8	8.56	14.8	0	107	
0900										collect samples

SIGNATURE(S): _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 818
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-MW 3R
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLING DATA:

	Color	pH	S.C.	Temp.	Turbidity	DO	Salinity	Other
Date: 3/12/03								
Time: 0900	(Visual)	(S.U.)	(mS/cm)	(°C)	(NTU)	(mg/l)	(%)	
Method: Bladder Pump	clear	6.41	.113	14.18	5.8	8.56	0	

SAMPLE COLLECTION/ANALYSIS INFORMATION:

ORP (Eh) (+/- mv): 107 Electrode Make & Model: _____

Reference Electrode (circle one): Silver-Silver Chloride / Calomel / Hydrogen

Dissolved Oxygen:

Equipment: HACH Digital Titrator OX-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	1-5 mg/L	200 ml	0.200 N	0.01
☐	2-10 mg/L	100 ml	0.200 N	0.02

Titration Count	Multiplier		Concentration
_____	x 0.01	=	mg/L
_____	x 0.02	=	mg/L

CHEMetrics: _____mg/L

Notes:

Alkalinity: HACH Model AL-AP MG-L

Equipment: HACH Digital Titrator AL-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____ Filtered: ☐

Range Used:	Range	Sample Vol.	Cartridge	Multiplier	Titration Count	Multiplier		Concentration
☐	10-40 mg/L	100 ml	0.1600 N	0.1	_____ & _____	x 0.1	=	mg/L
☐	40-160 mg/L	25 ml	0.1600 N	0.4	_____ & _____	x 0.4	=	mg/L
☐	100-400 mg/L	100 ml	1.600 N	1.0	_____ & _____	x 1.0	=	mg/L
☐	200-800 mg/L	50 ml	1.600 N	2.0	_____ & _____	x 2.0	=	mg/L
☐	500-2000 mg/L	20 ml	1.600 N	5.0	_____ & _____	x 5.0	=	mg/L
☐	1000-4000 mg/L	10 ml	1.600 N	10.0	_____ & _____	x 10.0	=	mg/L

Parameter:	Hydroxide	Carbonate	Bicarbonate
Relationship:			

CHEMetrics: _____mg/L

Notes: 40mg/l as $CaCO_3$

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

Carbon Dioxide:

Equipment: HACH Digital Titrator CA-DT CHEMetrics (Range: _____mg/L) Analysis Time: _____

Range Used:	Range	Sample Vol.	Cartridge	Multiplier
☐	10-50 mg/L	200 ml	0.3636 N	0.1
☐	20-100 mg/L	100 ml	0.3636 N	0.2
☐	100-400 mg/L	200 ml	3.636 N	1.0
☐	200-1000 mg/L	100 ml	3.636 N	2.0

Titration Count		Concentration
_____	x 0.1 =	mg/L
_____	x 0.2 =	mg/L
_____	x 1.0 =	mg/L
_____	x 2.0 =	mg/L

CHEMetrics: _____mg/L

Notes:

Standard Additions: ☐ Titrant Molarity: _____ Digits Required: 1st.: _____ 2nd.: _____ 3rd.: _____

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 548
Sampled By: DW/VS
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials):

Sample ID No.: WFF16-MW312
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Sulfide (S^{2-}):

Equipment: DR-700 DR-8 __ HS-WR Color Wheel Other: _____ Analysis Time: _____
Program/Module: 610nm 93

Concentration: _____ mg/L Filtered: ☐
Notes:

Sulfate (SO_4^{2-}):

Equipment: DR-700 DR-8 __ Other: _____ Analysis Time: _____
Program/Module: 91
Concentration: _____ mg/L Filtered: ☐

Standard Solution: ☐ Results: _____
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

Nitrite (NO_2^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 60
Concentration: _____ mg/L Reagent Blank Correction: ☐
Standard Solution: ☐ Results: ☐
Notes:

Nitrate (NO_3^--N):

Analysis Time: _____
Equipment: DR-700 DR-8 __ Other: _____ Filtered: ☐
Program/Module: 55
Concentration: _____ mg/L

Nitrite Interference Treatment: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml:_____ 0.2ml:_____ 0.3ml:_____
Notes:

FIELD ANALYTICAL LOG SHEET
GEOCHEMICAL PARAMETERS

Tetra Tech NUS, Inc.

Project Site Name: NASA WFF
Project No.: CTO 548
Sampled By: VS/DW
Field Analyst: DW
Field Form Checked as per QA/QC Checklist (initials): ☐

Sample ID No.: WFF16 GW312
Sample Location: Waste Oil Dump
Duplicate: ☐
Blank: ☐

SAMPLE COLLECTION/ANALYSIS INFORMATION:

Manganese (Mn^{2+}):

Equipment: DR-700 DR-8 __ HACH MN-5 Other: _____ Analysis Time: _____
Program/Module: 525nm 41
Concentration: _____ mg/L
Filtered: ☐
Digestion: ☐
Standard Solution: ☐ Results: _____ Reagent Blank Correction: ☐
Standard Additions: ☐ Digits Required: 0.1ml: _____ 0.2ml: _____ 0.3ml: _____
Notes:

Ferrous Iron (Fe^{2+}):

Equipment: DR-700 DR-8 __ (IR-18C Color Wheel) Other: _____ Analysis Time: _____
Program/Module: 500nm 33
Concentration: 0 mg/L
Filtered: ☐
Notes:

Hydrogen Sulfide (H_2S):

Equipment: (HS-C) Other: _____ Analysis Time: _____
Concentration: 0 mg/L Exceeded 5.0 mg/L range on color chart: ☐
Notes:

QA/QC Checklist:

All data fields have been completed as necessary: ☐
Correct measurement units are cited in the SAMPLING DATA block: ☐
Values cited in the SAMPLING DATA block are consistent with the Groundwater Sample Log Sheet: ☐
Mulitplication is correct for each *Multiplier* table: ☐
Final calulated concentration is within the appropriate *Range Used* block: ☐
Alkalinity *Relationship* is determined appropriatly as per manufacturer (HACH) instructions: ☐
QA/QC sample (e.g., Std. Additions, etc.) frequency is appropriate as per the project planning documents: ☐
Nitrite Interference treatment was used for Nitrate test if Nitrite was detected: ☐
Title block on each page of form is initialized by person who performed this QA/QC Checklist: ☐

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-127-0203
Sample Location: WOD-SU-127
Sampled By: VS
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/25/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1520	2-3'	Orange Brown	Fine Grained Sand Trace Clay
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCLVOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-101
Sample Location: SB-101
Sampled By: VSISG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0808	0 - 0.5'	Dark Brown	Silty Fine grained sand with tree & Grass Roots
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings or odor or soil staining observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-102
Sample Location: SB-102
Sampled By: VS/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0853	0-0.5'	orange Brown	silty Fine grained Sand with grass Roots
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or Soil staining was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-103
Sample Location: SB-103
Sampled By: VS/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0955	0-0.5'	Dark Brown	Silty Fine Grained Sand with Grass Roots
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or Soil staining was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: W00-SS-104
Sample Location: SB-104
Sampled By: VSISG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1145	0 - 0.5'	Dark Brown	Silty Fine Grained Sand with Grass Roots
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOO-SS-105
Sample Location: SS 105
Sampled By: DWISE
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0840	0-0.5'	Brown	Silty Fine Grained Sand with Some Grass Roots
Method: S.S Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-106
Sample Location: SB-106
Sampled By: DW/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1145	0-0.5'	Brown	silty sand with grass roots
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was noted

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-107
Sample Location: SB-107
Sampled By: DWISG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1245	0-0.5'	Brown	Silty Sand moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or Stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-108
Sample Location: SB-108
Sampled By: SG/DW
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1345	0-0.5'	Brown	Silty sand Moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-109
Sample Location: SB-109
Sampled By: DW/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0755	0-0.5'	Brown	Silty Sand Moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	6	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	2	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	2	
Grain Size	8 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

Duplicate Sample collected

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: Assigned time 0855
WOD-SS-Dup 5

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WON-SS-110
Sample Location: SB-110
Sampled By: DW/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0925	0-0.5'	Light Brown	Fine to Medium grained sand some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-111
Sample Location: SB-111
Sampled By: DW/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1040	0 - 0.5'	Light Brown	Fine to Medium Grained sand Some Silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCI VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOO-SS-112
Sample Location: SB-112
Sampled By: DW/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1125	0 - 0.5'	Light Brown	Fine Grained silty Sand with
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID reading odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: W00-SS-113
Sample Location: SB-113
Sampled By: DWJSG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1215	0-0.5'	Light Brown	Fine to Medium grained sand trace to some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCI VOC	5 Gram Encore Sampler		
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth		
TAL Metals, pH	4 oz Amber Glass Wide Mouth		
TOC, % Moisture	4 oz Amber Glass Wide Mouth		
Grain Size	8 oz Amber Glass Wide Mouth		

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-114
Sample Location: SB-114
Sampled By: DWISO
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1315	0-0.5'	BROWN	Fine Grained sand some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCI VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOO-SS-115
Sample Location: SB-115
Sampled By: DWISG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0825	0-0.5'	Brown	Silty Sand moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	5	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SS-116
Sample Location: SB-116
Sampled By: DWJSG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0905	0-0.5'	Brown	Silty Sand Moist
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-117
Sample Location: SB-117
Sampled By: DWISG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0950	0-0.5'	Light Brown	Humus
Method: SS Trowel			
Monitor Reading (ppm): 0.4			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: W00-SS-118
Sample Location: SB-118
Sampled By: DW/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1110	0-0.5'	Light Brown	Fine to coarse Grained sand some Silt + Pebbles
Method: SS Trowel			
Monitor Reading (ppm): 0.-			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler		
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth		
TAL Metals, pH	4 oz Amber Glass Wide Mouth		
TOC, % Moisture	4 oz Amber Glass Wide Mouth		
Grain Size	8 oz Amber Glass Wide Mouth		

OBSERVATIONS / NOTES:

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-119
Sample Location: SB-119
Sampled By: DWJGO
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1205	0-0.5'	Dark Brown	Silty Fine grained sand with some clay
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: W00-SS-120
Sample Location: SB-120
Sampled By: OW/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 2/12/03	0-0.5'	Dark Brown	silty Sand & clay
Method: 1255			
Monitor Reading (ppm): SS Trowel			
0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed.

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-121
Sample Location: SB-121
Sampled By: DW/SG
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	0-0.5'	Brown	Silty Sand with some clay Moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-122
Sample Location: SB-122
Sampled By: DW/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0955	0-0.5'	Brown	Silty Sand moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-123
Sample Location: SB-123
Sampled By: DW/SL
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1100	0-0.5'	Brown	Silty Sand moist
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings Odors or stained Soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-124
Sample Location: SB-124
Sampled By: DWISO
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1240	0-0.5'	Brown	Silty Fine Grained Sand moist
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings Odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOO-SS-125
Sample Location: SB-125
Sampled By: DW/SG
C.O.C. No.: ___

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: ___
[] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1310	0-0.5	Brown	Silty Fine Grained Sand Moist
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOO-SS-126
Sample Location: SB-126
Sampled By: DW/KM
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/21/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0930	0-0.5'	Brown	Fine grained sandy Silt
Method: S.S Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	2	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	2	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID reading odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-127
Sample Location: SB-127
Sampled By: DWICM
C.O.C. No.:

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/21/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0958	0-0.5'	Brown	Fine Grained sandy silt
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[X] Surface Soil
[] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SS-128
Sample Location: SS-128
Sampled By: DW/CM
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/21/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1012	0-0.5'	Brown	Fine grained sandy silt with trace clay
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCl VOC	5 Gram Encore Sampler	6	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	2	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	2	
Grain Size	8 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-129
Sample Location: SS-129
Sampled By: VSJCM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1040	0-0.5'	Orange Brown to Brown	Silty Fine to medium grained sand with some Black organic material
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	4	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	2	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	2	
Grain Size	8 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings were noted a slight sulfur odor was noted

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-130
Sample Location: SS-130
Sampled By: VS/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/14/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1105	0-0.5'	Light Brown to Tan	Silty sand with some black organic material
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings were noted. A slight sulfur odor was noted

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-131
Sample Location: SS-131
Sampled By: VS/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1116	0-0.5'	Black to Brown	0-0.2 feet was organic material to a silty fine to medium grained sand.
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings were noted a slight sulfur odor was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-132
Sample Location: SS 132
Sampled By: VS/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1130	0-0.5'	Black to Brown to Tan	Silty Sand with organics to silty fine to medium grained sand
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings were noted a slight sulfur odor was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-133
Sample Location: SS-133
Sampled By: VS/CM
C.O.C. No.: ___

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type: ___

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1142	0-0.5'	Black to Light Brown	organic material leaf and roots to a silty sand
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	6	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	2	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	2	
Grain Size	8 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings were observed a slight sulfur odor was noted

Dup 04 was collected

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.: WOD-SS-Dup 9

Assigned time: 1242

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-134
Sample Location: SS134
Sampled By: SG/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 3/26/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	0-0.5'	Gray	Fine grained sandy silt with organic material
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Sample ID No.: WOD-SS-135
Sample Location: SS-135
Sampled By: SG/CM
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/26/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1000	0-0.5'	Brown to gray	Fine to medium grained sandy silt with some organic material
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings were observed a slight sulfur odor was noted

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type: ____

Sample ID No.: WOD-SS-136
Sample Location: SS-136
Sampled By: VS/CM
C.O.C. No.: ____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1234	0 - 0.5'	Brown	Silt Trace Clay
Method: SS, Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings or odors were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: W017-SS-137
Sample Location: SS-137
Sampled By: VS/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1217	0-0.5'	Brown	Silt with trace clay
Method: S.S. Trowel			
Monitor Reading (ppm): 8.42			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

A PID reading of 8.42 was recorded
No odors were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-138
Sample Location: SS-138
Sampled By: VS/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/19/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1249	0-0.5'	Brown	Silt with trace clay and fine sand
Method: S.S. Trowel			
Monitor Reading (ppm): 24.7			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

A high PID reading of 24.7 may have been caused by evergreen roots being cut through. There were no odors associated with the sample

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SS-139
Sample Location: SS-139
Sampled By: DW/CM
C.O.C. No.:

[] Surface Soil
[] Subsurface Soil
[] Sediment
[X] Other: Marsh Sediment
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/21/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1102	0-0.5'	Light Brown	Silty Sand very moist
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, pH	4 oz Amber Glass Wide Mouth	1	
TOC, % Moisture	4 oz Amber Glass Wide Mouth	1	
Grain Size	8 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-101-1315
Sample Location: SB-101
Sampled By: VS/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0840	13-15'	Gray Brown Brown Black Brown Orange	Silty Fine grained sand trace Med Sand 0.25' stained layer silty fine grain sand Fine to medium grained sand with trace Sand and round Quartz Pebbles
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings or odors a 0.25" band of stained soil was observed and sampled.

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-102-1517
Sample Location: SB-102
Sampled By: VS/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	15-17'	Tan Gray Brown	Fine to Medium grained sand with trace silt
Method: SS Trowel			
Monitor Reading (ppm): 117			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

PID readings of up to 117 ppm and a petroleum/solvent odor was observed. No soil staining was observed.

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SV-103-1113
Sample Location: SB-103
Sampled By: VS/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1055	11-13'	Brown Orange Tan	Clay with trace silt Fine grained sand with trace silt Silty fine grained sand with trace medium grained sand
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-104-1012
Sample Location: SB-104
Sampled By: VS/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/6/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1227	10 - 12'	Tan orange Brown	Fine grained sand with trace silt to Fine to medium grained sand with trace silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-105-0507
Sample Location: SB-105
Sampled By: DW156
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date:	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0905	5-7'	Brown to Orange Brown	Fine grained sand some silt with some thin clayey sand layers to Fine grained sand with some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odor or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-106-0608
Sample Location: SB-106
Sampled By: DWISG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1225	6-8'	Light Brown to Orange Brown	Fine grained to coarse grained sand with trace silt and some clay layers
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-107-0608
Sample Location: SB-107
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1305	0 - 0.5'	Brown	Fine to Medium grained sand trace to some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or soil staining was observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-108-0608
Sample Location: SB-108
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/10/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1415	6-8'	Light Brown to Orange Brown	Fine grained to course grained sand trace to some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-104-0608
Sample Location: SB-109
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0830	6-8'	Orange Brown	Fine to Medium Grained Sand trace to some Silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOO-SO-110-0204
Sample Location: SB-110
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0955	2-4'	Brown	Sandy Clay
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOO SB-111-0507
Sample Location: SB-111
Sampled By: DW/SG-
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1110	5-7'	Brown Dark Brown + Black	Sandy Silt to Silty Sand with fill glass concrete metal frag ceramic and charred material
Method: SS trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings or odors were observed Soil staining along with fill material was observed from 6-10 feet.

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SD-112-0204
Sample Location: SB-112
Sampled By:
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1140	2-4'	Light Brown	Fine Grained Silty Sand
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WDD-SU-113-0406
Sample Location: SB-113
Sampled By: DWISG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1235	2-4'	Light Brown	Fine grained sand with trace silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	9	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	3	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	3	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MS/MSD collected

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-114-0406
Sample Location: SB-114
Sampled By: DW/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/11/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1335	4-6'	Light brown to Orange Brown	Fine grained sand moist Fine to medium grained sand some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD | Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other: _____
[] QA Sample Type: _____

Sample ID No.: WOD-SU-115-0305
Sample Location: SB-115
Sampled By: DW/SG
C.O.C. No.: _____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0845	3-5'	Light Brown	Fine grained sand trace to some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were Noted

MAP:

Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WFF-SO-116-0204
Sample Location: SB-116
Sampled By: DWISE
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0925	2-4'	Light Brown	Fine grained sand trace to some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOO-SO-117-0102
Sample Location: SB-117
Sampled By: DW/SO
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1010	1 - 2'	Light Brown	Fine Grained silty Sand
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were noted.

MAP:

Circle if Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

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SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-118-0406
Sample Location: SB-118
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1130	4-6'	Light Brown	Fine to coarse Grained sand with some silt + Pebbles
Method: SS Trowel			
Monitor Reading (ppm): 0.1			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	6	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.: WOD-SU-DUP6 Assigned time 1145

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

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Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD SO-119-0507
Sample Location: SB 119
Sampled By: DWISO
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1230	5-7'	Orange Brown Light Gray	Silty Fine grained sand some clay Fine to medium grained sand with some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-120-0406
Sample Location: SB-120
Sampled By: DWISG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/12/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1315	4-6'	Brown	Fine Grained sand with some silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

NO PID Readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-121-1012
Sample Location: SB-121
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0940	10-12'	Light Brown	Fine grained sand to silty sand
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-122-1012
Sample Location: SB-122
Sampled By: DW/SG
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1040	10-12'	Light Brown Light Gray	Fine grained sand, trace silt to silty to Fine grained sand with trace silt
Method: SS Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	6	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	2	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	2	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.: WOD-SU-DUP2

Assigned time = 1055

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WOD-SU-123-1012
Sample Location: SB-123
Sampled By: DWISE
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1140	10-12'	Light Brown	Fine Grained sand some silt to silty
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	9	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	3	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	3	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MS/MSD collected

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SO-124-0005
Sample Location: SB-124
Sampled By: DW156
C.O.C. No.: ____

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other: ____
[] QA Sample Type: ____

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1300	2 - 3'	Brown to Light Brown	Silty Fine grained sand to Fine grained sand with some silt
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or Soil Staining Was observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Page___ of ___

Project Site Name: NASA WFF
Project No.: CTO 848

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Sample ID No.: WDD-SU-125-0203
Sample Location: SB-125
Sampled By: DW/SG
C.O.C. No.:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/13/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1335	2-3'	Brown	Silty Fine Grained sand with some Fine Gravel
Method: S.S. Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD

Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NASA WFF
Project No.: CTO 848

Sample ID No.: WOD-SU-126-0203
Sample Location: SB-126
Sampled By: VS
C.O.C. No.:

[] Surface Soil
[X] Subsurface Soil
[] Sediment
[] Other:
[] QA Sample Type:

Type of Sample:
[X] Low Concentration
[] High Concentration

GRAB SAMPLE DATA:

Date: 2/26/03	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 0829	2-3'	Orange Brown	Silty Fine grained sand with trace medium grained sand
Method: S.S. / Trowel			
Monitor Reading (ppm): 0.0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

SAMPLE COLLECTION INFORMATION:

Analysis	Container Requirements	Collected	Other
TCL VOC	5 Gram Encore Sampler	3	
TCL SVOC, PCB	4 oz Amber Glass Wide Mouth	1	
TAL Metals, % Moisture	4 oz Amber Glass Wide Mouth	1	

OBSERVATIONS / NOTES:

No PID readings odors or stained soils were observed

MAP:

Circle If Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

APPENDIX D

BORING LOGS

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E Drilling
DRILLING RIG: Geoprobe

BORING No.: WOD-SB-101
DATE: 2-6-03
GEOLOGIST: Vince Shickora
DRILLER: Aaron Eichleberger

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0814	S-1						Dark Brn	Silty FGR Sand with Tree/grass roots		moist	0	0	0	0
		1												
							org Brn	Silty FGR Sand		moist	0	0	0	0
		2												
							org Tan	FGR Sand with Trace Silt		moist	0	0	0	0
		3					Brn							
		4		45/48			Brn Tan	Same as above		moist	0	0	0	0
0819	S-2													
		5					Brn org	Same as above		moist	0	0	0	0
		6					Tan Brn	FGR Sand with Trace MGR Sand + Silt		moist	0	0	0	0
							Gry							
		7												
							Tan Gry	Same as above		moist	0	0	0	0
		8		46/48			Tan org	FGR to MGR Sand with Trace Silt		moist	0	0	0	0
0824	S-3													
		9					org Brn	Same as above						
							Tan	with Trace round quartz pebbles		moist	0	0	0	0
		10												
							Tan org	Same as above		moist	0	0	0	0
		11					Brn							
							Tan							
		12		47/48			org Brn	Same as above		moist	0	0	0	0
0829	S-3													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Geoprobe Rig - 2" x 4' Rods / Acetate Sleeves

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 1740
DRILLING COMPANY: CT+E
DRILLING RIG: Geoprobe

BORING No.: WOA-SB-101
DATE: 2-6-03
GEOLOGIST: V. Shickora
DRILLER: A. Eichleberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	13					Gry Brn	Silty FGR Sand with Trace MGR sand		moist	0	0	0	0
						Brn Blk	3 inch stained layer of Silty FGR Sand		moist No odors	0	0	0	0
	14												
						Brn org	FGR to MGR Sand with Trace Silt and		very moist	0	0	0	0
	15					Tan	round quartz pebbles						
	16		46/48			Brn org	Same as above		very moist	0	0	0	0
S-5													
	17												
						Brn org	Same as above		very moist	0	0	0	0
	18					Tan							
	19												
				++++		Brn org	Same as above		wet at 19.5' BGS No odors	0	0	0	0
	20		45/48			Tan							
				EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see page 1)

Converted to Well: Yes _____ No ✓ Well I.D. #: _____

T.L.T.L.W.O., Inc.

Page 1 of 2

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E Drilling
DRILLING RIG: Geoprobe

BORING No.: WOF-SB-102
DATE: 2-6-03
GEOLOGIST: Vince Stickora
DRILLER: Hans Eichleberger

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0903	S-1						org Brn	Silty FGR Sand with grass roots		damp to moist	0	0	0	0
		1												
							org Brn	Silty FGR Sand		moist	0	0	0	0
		2												
							Brn Tan	FGR Sand with Trace Silt		moist	0	0	0	0
		3												
							Brn Tan	Same as above		moist	0	0	0	0
		4		46/48										
0908	S-2													
		5					Brn Tan	Same as above		moist	0	0	0	0
		6												
0915	~~S-3~~						Tan Grey	FGR Sand with Trace MGR Sand + Silt		moist	0	0	0	0
		7												
							org							
		8		47/48			Tan Grey	Same as above		moist	0	0	0	0
0914	S-3													
		9					org							
							Tan Brn	Same as above		moist	0	0	0	0
		10												
		11												
							org Tan	FGR to MGR Sand with Trace Silt		moist	0	0	0	0
		12		46/48			Brn							
0919	S-4													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Geoprobe Rig - 2" x 4' Rods / Acetate Sleeves

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E
DRILLING RIG: Geoprobe

BORING No.: WOF-SB-102
DATE: 2-6-03
GEOLOGIST: V. Shickora
DRILLER: A. Eichlebergor

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	13					Tan Brn	FGR Sand with Trace Silt		very moist	0	0	0	0
	14					Tan Gry	FGR to MGR Sand with Trace Silt			0	0	0	0
						Brn			slight fuel odor				
	15					Tan	Same as above		very moist	2	0	51	0
						Gry Brn							
	16		47/48						Fuel/solvent odor				
0926 S-5						Tan Gry	Same as above		very moist	63	0	31	0
	17					Brn			strong fuel odor				
						Gry Brn	FGR Sand with Trace Silt		very moist	117	0	24	0
	18					Gry							
						Tan Brn	FGR to MGR Sand with Trace Silt and clay		very moist	77	0	24	0
	19												
	20		46/48			Tan Brn	Same as above			94	0	24	0
0931 S-6													
	21								strong fuel odor				
				****		Tan Gry Brn	Same as above		wet at ≈ 21.5 BGS	206	0	51	0
	22												
									strong fuel odor				
	23					Brn Gry	Same as above		wet				
	24		45/48			Gray	Silty FGR to MGR Sand		wet	191	0	51	0
				EOB					Strong fuel odor				
	25						~~Same as above~~ VAS			177	0	51	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See page 1)

Converted to Well: Yes _____ No ✓ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E drilling
DRILLING RIG: Geoprobe

BORING No.: WOF-SB-103
DATE: 2-6-03
GEOLOGIST: Vince Shickora
DRILLER: Aaron Eichleberger

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1005	S-1						Dark Brn	Silty FGR Sand with grass roots		moist	0	0	0	0
		1												
							Tan Brn	FGR Sand with Trace silt		moist	0	0	0	0
		2												
							org Brn	FGR to MGR Sand with Trace silt		moist	0	0	0	0
		3												
							Gry Blk	Clayey Silt with Trace FGR Sand		moist to damp	0	0	0	0
		4		44/48										
1011	S-2							Same as above		damp to moist	0	0	0	0
		5								(moderate)				
							org Brn	Silty Clay with Trace FGR Sand		Firm - (Plasticity (damp to moist)	0	0	0	0
		6												
							org Brn	Same as above		Firm (damp to moist)	0	0	0	0
		7												
		8		47/48			Gry Brn	Silty-clayey FGR to MGR Sand		very moist	0	0	0	0
1019	S-3													
		9					Brn org	Clay with Trace silt		Firm - (slight plasticity) (moist)	0	0	0	0
		10					Brn org	Same as above		Firm (moist) Slight Plasticity				
		11					Brn org	Same as above		moist	0	0	0	0
		12		49/48			Brn org	FGR Sand with Trace silt		moist	0	0	0	0
1032	S-4						Tan							

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Geoprobe Rig 2"x4' Rods / Acetate Sleeves

Converted to Well: Yes _____ No ✓ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E
DRILLING RIG: Geoprobe

BORING No.: WOD-SB-103
DATE: 2-6-03
GEOLOGIST: V. Shuckra
DRILLER: A. Eichleberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	13					Brn Tan	Silty FGR Sand with Trace MGR Sand		moist	0	0	0	0
						Gry							
	14												
						Brn							
	15					Tan Gry	Same as above		moist	0	0	0	0
						Tan Org	FGR to MGR Sand with Trace Silt		very moist	0	0	0	0
	16		45/48			Brn							
1040 S-5						Brn							
	17					Tan Gry	Silty FGR Sand with Trace clay		very moist	0	0	0	0
	18					Tan Org	FGR to MGR Sand with Trace CGR Sand and		very moist	0	0	0	0
						Brn	found quartz pebbles						
	19												
						Tan							
	20		47/48			Org Brn	Same as above		very moist	0	0	0	0
1048 S-6													
	21					Tan							
						Org Brn	Same as above		very moist	0	0	0	0
	22												
				***					wet at 22' BGS No odors	0	0	0	0
	23					Tan							
						Org Brn	Same as above		wet	0	0	0	0
	24		46/48										
				EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See page 1)

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4746
DRILLING COMPANY: CT+E Drilling
DRILLING RIG: Geoprobe

BORING No.: WOF-SB-104
DATE: 2-6-03
GEOLOGIST: V. Shickora
DRILLER: A. Eichleberger

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
1152	S-1						Dark Brn	Silty FGR Sand with grass roots		Moist	0	0	0	0
		1												
							Gry Brn	Clayey Silt with Trace FGR Sand		Firm (moist)	0	0	0	0
		2					Tan							
		3					Org Brn	Same as above		Firm (moist)	0	0	0	0
		4		46/48			Brn Tan	FGR Sand with Trace Silt.		moist	0	0	0	0
1159	S-2													
		5												
							Brn Tan	Same as above		moist	0	0	0	0
		6												
							Org Brn	Clayey Silt with Trace FGR Sand		Firm slight (moist) Plasticity	0	0	0	0
		7												
							Org Brn	Same as above		Firm (moist)	0	0	0	0
		8		45/48										
1204	S-3													
		9					Org Brn	Same as above		Firm slight (moist) Plasticity	0	0	0	0
		10					Tan Brn	FGR Sand with Trace Silt.		moist	0	0	0	0
		11					Tan							
							Org Brn	FGR to MGR Sand with Trace Silt.		moist	0	0	0	0
		12		47/48										
1209	S-4													

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: Geoprobe Rig - 2"x4' Rods / Acetate Sleeves

Converted to Well: Yes _____ No ✓ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E
DRILLING RIG: Geoprobe

BORING No.: WOD-SB-104
DATE: 2-6-03
GEOLOGIST: V. Shickora
DRILLER: A. Eichleberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
	13					Brn Tan	Same as above		moist	0	0	0	0
	14					Brn Tan	Silty FGR to MGR Sand		moist	0	0	0	0
						org							
	15					Tan							
						Brn org	Same as above		very moist	0	0	0	0
	16		46/48										
1214	S-5												
	17					Tan Brn	FGR to MGR Sand with Trace round quartz Pebbles		very moist	0	0	0	0
	18					Tan Brn	Same as above		very moist	0	0	0	0
	19					org Brn	Clayey Silt with Trace FGR to MGR Sand		very moist	0	0	0	0
						Tan							
	20		45/48			org Brn	FGR to MGR Sand with Trace CGR Sand and round quartz Pebbles		very moist	0	0	0	0
1220	S-6												
	21					Tan Wht.	FGR to MGR Sand with Trace silt.		very moist	0	0	0	0
	22					Brn org	Clayey Silt with Trace FGR to MGR Sand		very moist	0	0	0	0
				****					wet at 22.5' BGS	0	0	0	0
	23								No odors				
						Brn org	Same as above		wet. NO odors	0	0	0	0
	24		46/48			Gry							
				EoB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (see page 1)

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-105
DATE: 2/11/05
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Drifter BZ**
						BRN	Silty FGR sand (sand subordinate)		moist				
S-1 TO 0840			42/48			↓							
						Orange BRN	FGR sand some silt						
	4					Lt BRN to							
							~10% thin clayey sand layers						
S-2 TO 0900			46/48			Orange BRN	FGR sand some silt						
	8												
S-3 @ 0853			48/48			↓	↓						
	12					Orange BRN	clayey sand FGR sand some silt		↓ WET @ 13'				
							↓						
S-4 TO 0900			48/48			↓	↓						
						Orange BRN	clayey sand		↓				
	16					↓	↓						
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: collect sample WOD-SV-105-0507

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-106
DATE: 2/10/03
GEOLOGIST: D. Whalen
DRILLER: E. Eichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
S-1 @ 1155	2		36/48			Brn	silty sand			0			
						Brn to Gray Brn	FGR. sand w/ silt, tr. mica		wet, sat	6			
	4		48							0			
S-2 @ 1204	6		48/48			14. Brn	tr silt FGR sand well sorted		well sorted	0			
	8		48/48			Brn	FGR to coarser sand/ CGR tr. silt some clay layers some fine gravel rounded		well sorted	0			
S-3 @ 1206	10		48/48				@ 12'			0			
	12					Lt Brn to Brn	FGR to CGR sand tr to some silt some gravel			0			
S-4 @ 1210	14		48/48			Brn			wet	0			
	16					Gray Brn	sandy clay/ clayey sand			0			
S-5 @ 1222	18									0			
	20					Gray Brn	FGR to CGR silty sand						
				TD.									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: 1225 collect SVOC-SB-106-0608

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-107
DATE: 2/10/05
GEOLOGIST: D. Whalen
DRILLER: E. Eichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn	silty sand		moist	0	0	0	0
S-1 @ 1250			34/48			lt Brn to brn	FGR sand tr to some silt						
	4					Brn				0	0	0	0
							FGR to MGR sand tr. to some silt			0	0	0	0
S-2 @ 125			40/48										
	8									0	0	0	0
										0	0	0	0
S-3 @ 1255			46/48				FGR to CGR sand tr to some silt						
	12					Hi Brn to Brn	silty			0	0	0	0
S-4 @ 1305			48/48			BRN				0	0	0	0
	16			TD					wet	0	0	0	0

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1305 collect sample WOD-SB-107-0608

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-108
DATE: 2/10/03
GEOLOGIST: D. Wahlen
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
			32/			Brn	silty sand		moist				
S-1 @ 1358			48			Brn	clayey silty sand			0			
	4									0			
			44				FGR sand tr silt						
S-2 @ 1402			14"			Brn	FGR-CGR sand tr silt to some			0			
	8					Brn			thin clay layer at 7'	0			
S-3 @ 1408										0			
	12									0			
S-4 @ 1412				9'					WET	0			
	16					Gray	clayey sand			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Remarks: 1415 collect WOD-SB-108-0108

Drilling Area Background (ppm): 0

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-109
DATE: 3/11/03
GEOLOGIST: D. Walsh
DRILLER: E. Eichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						BRN	Silty Sand		moist				
S-1 @ 0807			36/48			LT BRN	FGR sand trace silt			C			
	4					LT BRN	FGR to CGR sand some silt			0			
						Red Brn	FGR to MGR Sand trace to some silt						
S-2 @ 0810			40/48							0			
	8									0			
S-3 @ 0816			42/48							0			
	12									0			
S-4 @ 0821			44/48				silty sand some clay		wet at 14.5'	0			
	16									0			
				T.D.									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm):

Remarks: 0820 Collect sample WOD-SB-109-0608 F-MGR sand fraction

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOP-SB-110 A
DATE: 2/4/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						grey	FGR-MGR sand						
S-1			24/			Brn				0			
@ 0933			48						V. SOFT				
	4									0			
S-2			10/			Brn	Fill			0.1			
@ 0937			48				wire, cord, etc.						
	8									0			
S-3										0			
@ 0941			6/48							-			
	12								wet	0			
				TP									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: ____

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-110B
DATE: 3/11/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						LT Brn	F-MGR sand some silt		moist				
S1			24/			Brn	↓		↓	0			
@ 0943			18				sandy clay						
	4						<no recov>			0			
						Black	Fill						
S2 @ 0945			20/ 48			Gray Brown	Fill Same as above, wood, concrete		wet soft	6			
	8									0			
S3 @ 0949			5/ 48							0			
	12			TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 955 collect WOD-SU-110-0204

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-111 (AOB)
DATE: 2/11/03
GEOLOGIST: Dundler
DRILLER: E. Fichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Tan	F-MC f sand some silt		moist				
S-1 @ 1043			26/48			Brn				0			
	4									0			
				2'-4'		Brn	Sandy silt						
S-2 @ 1047			31/48	4'-6'		Dk Brn to Blk	silt + sand Fill glass, concrete, metal frags ceramic, char at material			0			
	8									0			
S-3 @ 1053			34/48	8'-10'		Brn	F-MC f sand some silt		WET ~ 10.0'	0			
	12			10'-12'		Lt Gray	Sandy clay		WET	0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: DO 2 borings to get DPT recovery at 8-12'
1110 collect WOD-SV-111-5-7

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-112
DATE: 2/11/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Drifter BZ**
						L. Tan	Silty Sand FGR Sand						
S-1 @ 1128			30/48				some silt		V. Soft	0			
	4									0			
						↓	↓						
S-2 @ 1131			40/48			Gray Brn	silty sand			0			
						Dk Brn	[redacted] silt w/ roots sulfur odor		WET				
	8					L. Gray	silty sand		↓ ↓	0			
				TD									
S-3 @													
	12												

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1140 collect WOD-SU-112-0204

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-113
DATE: 3/11/03
GEOLOGIST: D. Wharton
DRILLER: E. Eichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						10 YR	F GR - MGR sand tr silt		wet				
S1 @ 1214			35/48							0			
	4						F GR sand tr silt			0			
S2 @ 1222			39/48							0			
	8									0			
						10 YR	silty sand						
S-3 @ 1227			47/48				clay / F-C sand to silt		wet at 16'	0			
	12						clayey sand			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1235 collect WOD-SV-113-C406 F GR sand tr silt

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-114
DATE: 2/11/03
GEOLOGIST: S. Whalen
DRILLER: E. Frichelberger

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn to lt. Brn	F-C-F sand some Si. lt		moist				
SB1			32/48			Brn to Dk Brn				0			
1320						Brn	↓						
	4					Lt Gray	F-C-F sand (clay)			0			
							F-M-C Sand						
SB1			44/48			Brn to Lt Gray	↓ some Si. lt			0			
1322						Lt. Gray	clay						
	8									0			
						Lt. Brn	F-C-F sand +t to some Si. lt		wet @ 8'				
SB1			48/48			Gray				0			
1328						Lt. Gray	clayey sand						
	12					↓	↓		↓	0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1325 collect WOD-SB-0406

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-115
DATE: 2/12/03
GEOLOGIST: D. Whalen
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn	silty sand FGR sand to 10 some silt		moist	0			
S-1 @ 0852			25/48			Lt BRN				0			
	4									0			
										0			
S-2 @ 0858			36/48			clayey	silty sand		moist/wet	0			
	8					gray	sandy clay		clay	0			
S-3 @ 0911			45/48			Lt Brn Gray	Fgr sand some silt		wet	0			
	12					Lt. Gray	clayey sand			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 0895 collect WOD-SD-115-0305

Converted to Well: Yes _____ No _____ Well I.D. #: _____

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Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-116
DATE: 2/12/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn Lt	silty sand			4			
S-1 @ 10			37/			Brn	F GR sand tr. to some silt		Pink odor	5			
0918			/48			↓	↓			1			
	4					↓	↓			0			
						Lt Brn	F-MGR sand tr. silt			0			
S-2 @ 32			42/			Gray	silty sand			0			
0922			/48			Brn/ Gray	sandy clay		wet at 47'	0			
	8					Gray	F-GR sand tr. silt silty sand some clay		↓	0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 0425 collect WOD-SB-116-0204

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-117
DATE: 2/12/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						LT	ROOTS			24			
S-1 @ 1000			36/48			Brn	FGR silty sand		wet at 1.5'				
						Gray Brn	sandy clay			0			
	4						↓						
						Brn	clayey sand			0			
S-2 @ 1005			44/48										
							silty sand			0			
	8						↓		↓				
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1010 WOD-SB-117-0102

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-118
DATE: 2/12/03
GEOLOGIST: D. Wahl
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						LT Brn	F-C GR sand			0.2			
S-1			39/48				some silt some pebbles		moist	0			
@ 1115										0			
	4									0			
										0			
S-2 @ 1119			41/48							0.1			
										0			
	8									0			
							silty sand		wet @ 9'	0			
S-3 @			44/48				silty sand some clay			0			
1124							F-MGR sand (clean)			0			
	12						silty sand some clay			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1130 WOD-SB-118-0406 DUP 06 (1145)

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-119
DATE: 2/12/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						Brn	silty sand		moist	0			
S-1 @ 1210			43/48				silty sand, some clay			0			
						Brn	silty sand, some clay			0			
	4									0			
S-2 @ 1223			38/48			lt gray brn	F-MER sand, some silt			0			
	8									0			
						lt BRN							
S-3 @ 1217			39/48							0			
	12									0			
S-4 @ 1223			43/48						wet at 13.5'	0			
						lt Brn-gray	sandy clay						
	16					lt BRN	silty sand			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: 1330 WOD-SB-119-0507

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-120
DATE: 3/12/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	MATERIAL DESCRIPTION: Color	MATERIAL DESCRIPTION: Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						DK Brn	silty sand & org. material		moist				
S1 @ 1300			32/48			Brn	silty FGR sand			0			
	4						FGR sand some silt			0			
S2 @ 1308			36/48			BRN	silty sand some clay			0			
	8						sandy clayey silt			0			
						Gray	clayey silt		wet at 9'				
S3 @ 1308							silty sand some clay			0			
	12						FGR sand some silt			0			
				TD.									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): ____

Remarks: 1315 WOD-SO-120-0406
FGR sand some silt

Converted to Well: Yes ____ No ____ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-121
DATE: 2/13/03
GEOLOGIST: D. Whalen
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm) Sample	Sampler BZ	Borehole**	Driller BZ**
						BRN	SILTY SAND, SOME CLAY		MOIST	0			
S-1 @ 0854			38/48			Lt. BRN	FGR SAND, SOME SILT			0			
	4									0			
							FGR SAND TR. SILT TO SILTY			0			
S-2 @ 0856			39/48							0			
	8									0			
										0			
S-3 @ 0900			42/48							0			
	12									0			
							FGR TO CGR SAND TR. TO SOME SILT		WET	0			
S-4 @ 0905			45/48							0			
	16									0			
										0			
S-5 @ 0909			48/48							0			
	20						SOME GRAVEL			0			
										0.8			
S-6 @ 0915			46/48							5			
	24					GRAY			PETROLEUM ODOR SATURATED @ 23'	40			
				TD=24'						200			

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 0940 collect sample WOD-SU-121-1012

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-122
DATE: 2/13/03
GEOLOGIST: D. Whalen
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						BRN	SILTY SAND		MOIST	0			
S-1			39/48			LT. BRN	FGR SAND, SOME SILT			0			
@ 1003							FGR SAND, Trace SILT to SILTY			0			
	4									0			
										0			
S-2			41/48							0			
@ 1006										0			
	8									0			
										0			
S-3			44/48							0			
@ 1010						↓	↓			0			
	12					LT. GRAY BRN	FGR SAND TR. SILT			0			
									↓	0			
S-4			42/48			LT. BRN	FGR to MGR SAND TR. to SOME SILT		WET	0			
@ 1014						↓	↓			0			
	16					↓	↓			0			
						LT. GRAY	FGR to CGR SAND TR. to SOME SILT			0			
S-5			42/48			BRN to				0			
@ 1019						ORANGE BRN				0			
	20					↓				0			
						LT. BRN				0.6			
S-6			42/48			↓				35			
@ 1025						↓			↓	10			
	24					GRAY	↓		OIL ODOR SATURATED at 23'	99			
				TD=24'									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1040 COLLECT sample WOD-SU-122-1012 and DUPLICATE DUP-07 (1055)

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WOD-SB-123
DATE: 2/13/03
GEOLOGIST: D. Whalen
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
						BRN	SILTY SAND		MOIST	0			
S-1 @ 1106			38/48			LT. BRN	FGR SAND, SOME SILT			0			
							↓			0			
	4						FGR SAND TR. SILT to SILTY			0			
										0			
S-2 @ 1110			39/48				↓			0			
										0			
	8						↓			0			
							FGR SAND, SOME SILT to SILTY			0			
S-3 @ 1115			47/48							0			
										0			
	12									0			
							FGR to CGR SAND TR. to SOME SILT		↓	0			
S-4 @ 1119									WET	0			
										0			
	16									0			
										0			
S-5 @ 1124										0			
										0			
	20						SOME GRAVEL			0			
										0			
S-6 @ 1130									↓	0			
						↓			OIL ODOR at 23'	0			
	24					GRAY	↓		SATURATED at 23'	75			
				TD=24'									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: _____

Converted to Well: Yes _____ No _____ Well I.D. #: _____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig / ATV Rig

BORING No.: WOD - SB - 124
DATE: 2/13/03 / 2-24-03
GEOLOGIST: D. Whalen / V. Shickora
DRILLER: Bob Jordan

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
Time													
						Brn	silty sand FGR		moist	C			
S-1 @			30/			↓	↓		↓	C			
1251			/48			LT BRN	FGR sand some silt			O			
	4					↓	↓			O			
						Grey BRN	SLTY sand to sandy silt		↓	O			
S-2			40/			↓			WET at 5'	C			
@			/48			Brn	pieces of varying ~~plant matter~~ wood			O			
1253	8					↓	↓ some clay		↓	O			
2-13													
2-24 ↓				VAS									
S-1 @	9	4/4											
1512	10	4/4	21/24			Brn Grey	Silty Clay with Trace FGR Sand		very moist to wet (Plastic)	O	O	O	O
S-2 @	11	5/7											
1517	12	6/8	23/24			Grey Brn	Clayey Silt		damp to moist (No plasticity)	O	O	O	O
S-3 @	13	8/9											
1527	14	9/9	21/24			Grey Brn	Same as above		damp to moist	O	O	O	O
				EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: ATV - HSA Rig - 140 pound Hammer - 3.25" X 5' HSAs.
1305 WOD - SB - 124 - 0203
2" x 2' split spoons FGR sand and some silt

Converted to Well: Yes ____ No ✓ Well I.D. #: ~~WOT WFF16 GW6~~ (VAS) VAS

Tetra Tech NUS, Inc.

BORING LOG

Page ___ of ___

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: Geoprobe Rig

BORING No.: WDP-SB-125
DATE: 3/13/03
GEOLOGIST:
DRILLER:

Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ***
						BRN	silty FGR sand		moist	0			
S-1 @ 1219			32/48							0			
							Fine gravel (concrete?)						
	4					Lt BRN	FGR sand some silt			0			
										0			
S-2 @ 1337			40/48			BRN	clayey silty sand			0			
							FGR sand some silt		wet at 6'	0			
	8					BRN	FGR silty sand + clay			0			
				TD									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 1335 Collect WDP-SB-125-G202

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: ATV Rig

BORING No.: WOS-SB-126
DATE: 2-26-03
GEOLOGIST: Vince Shickora
DRILLER: Bob Jordan

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample BZ	Borehole**	Driller BZ**
0815	S-1	1	4/3				Brn	Sandy Silt with Trace Tree Roots		Very Moist	0	0	0	0
		2	4/3	20/24										
0821	S-2	3	5/6				Org Brn	Silty FGR Sand with Trace MGR Sand		very moist	0	0	0	0
		4	6/6	20/24										
0828	S-3	5	5/4		****					wet at ± 4.2' BGS	0	0	0	0
		6	3/2	21/24			Brn Gry	Silty Clay with Trace FGR Sand		wet	0	0	0	0
					EoB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: ATV HSA Rig - 2"x2' Split Spoons

Converted to Well: Yes ____ No ✓ Well I.D. #: ____

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: NASA WFF
PROJECT NUMBER: CTO 848
DRILLING COMPANY: Tetra Tech NUS
DRILLING RIG: ATV Rig

BORING No.: WOA-SB-127
DATE: 2-25-03
GEOLOGIST: Vince Shickora
DRILLER: Bob Jordan

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sample BZ	Borehole**	Driller BZ**
1512	S-1	1	4/4				Dark Brn	Sandy Silt with some Tree roots		very moist	0	0	0	0
		2	3/4	18/24			org Brn	Silty FGR Sand with Trace clay		moist	0	0	0	0
1518	S-2	3	4/3											
		4	4/3	17/24	***		org Brn	Same as above		wet at ± 4.0' BGS	0	0	0	0
	S-3	5	4/3											
1523		6	3/3	19/24			org Brn	Silty FGR to MGR Sand		wet	0	0	0	0
1530	S-4	7	2/4											
		8	3/2	18/24			Brn Gry	Sandy Silt		wet	0	0	0	0
	S-5	9	2/1											
		10	1/2	21/24			Gry Brn	Silty Clay with Trace FGR Sand		wet	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: ATV - HSA Rig - 3.25"x5' HSAs - 2"x2' Split Spoons
140 pound Hammer with wire line

Converted to Well: Yes ✓ No ___ Well I.D. #: WFF16-GW7

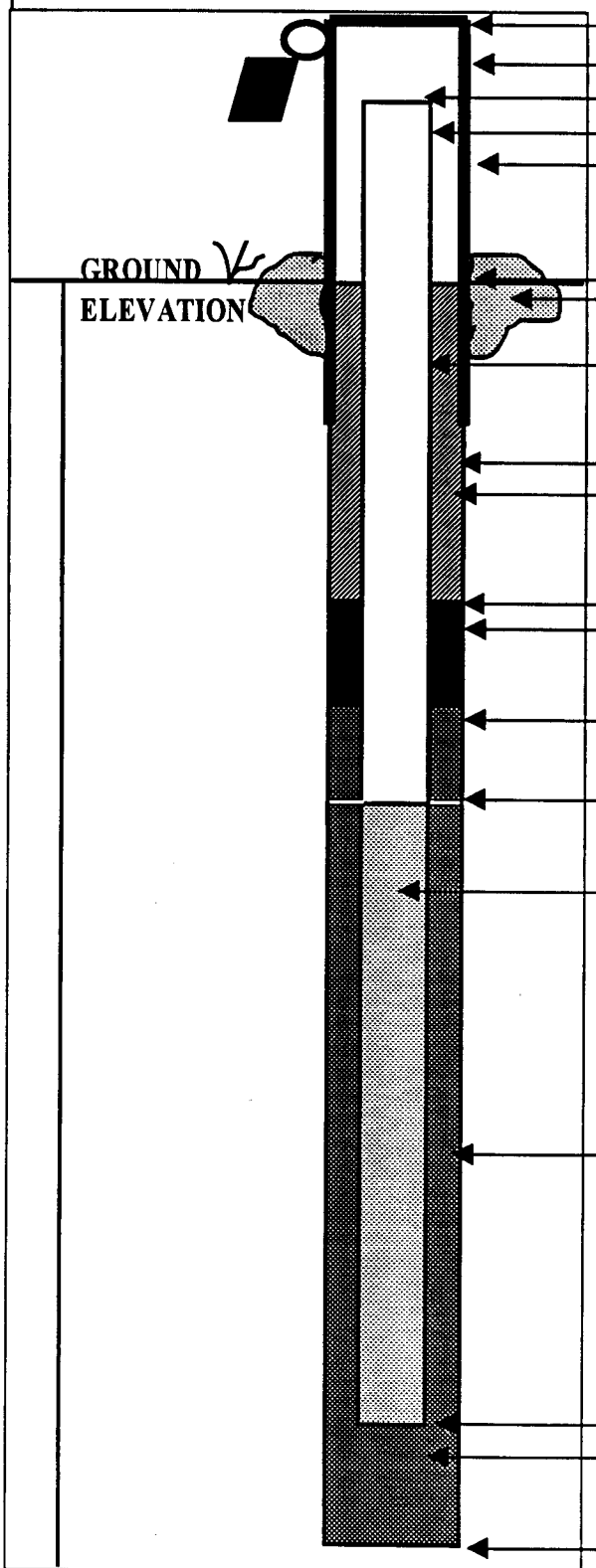
APPENDIX E

WELL BORING and CONSTRUCTION LOGS

BORING NO.: MW-3R

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

PROJECT:	Wallops Flight Facility	DRILLING Co.:	CT+E	BORING No.:	MW-3R
PROJECT No.:	4740	DRILLER:	Bob Jordan	DATE COMPLETED:	1-28-03
SITE:	Waste Oil Dump	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:

STICK-UP TOP OF SURFACE CASING:

ELEVATION OF TOP OF RISER PIPE:

RISER STICK-UP ABOVE GROUND SURFACE: 2 Feet

I.D. OF SURFACE CASING: 6 inch

TYPE OF SURFACE CASING: 6 inch Steel

GROUND ELEVATION:

TYPE OF SURFACE SEAL:

RISER PIPE I.D.: 2 inch

TYPE OF RISER PIPE: PVC (schedule 40)

BOREHOLE DIAMETER: 8 inch

TYPE OF BACKFILL: Cement/Bentonite grout

ELEVATION / DEPTH OF SEAL: 17'

TYPE OF SEAL: 3/8" Bentonite pellets

ELEVATION / DEPTH TOP OF FILTER PACK: 19'

ELEVATION / DEPTH TOP OF SCREEN: 21'

TYPE OF SCREEN: PVC (schedule 40)

SLOT SIZE X LENGTH: 0.01" x 10'

I.D. OF SCREEN: 2 inch

TYPE OF FILTER PACK: #1 Silica Sand

ELEVATION / DEPTH BOTTOM OF SCREEN: 31'

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 32'

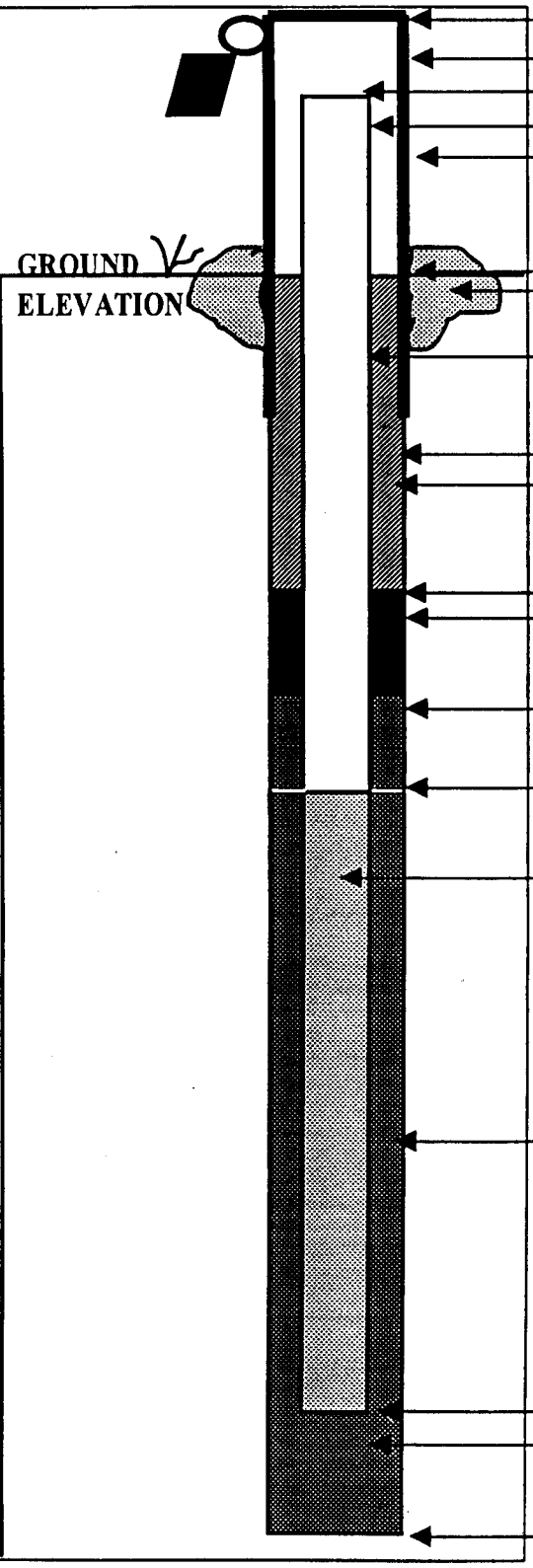
TYPE OF BACKFILL BELOW WELL: #1 Silica Sand

ELEVATION / DEPTH OF BOREHOLE: 32'

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET**

BORING NO.: WOD-SB-124
well # WFF16-GW6

PROJECT:	Wallops Flight Facility	DRILLING Co.:	CT+E Drilling	BORING No.:	WOD-SB-124
PROJECT No.:	4740	DRILLER:	Bob Jordan	DATE COMPLETED:	2-25-03
SITE:	WOD	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	

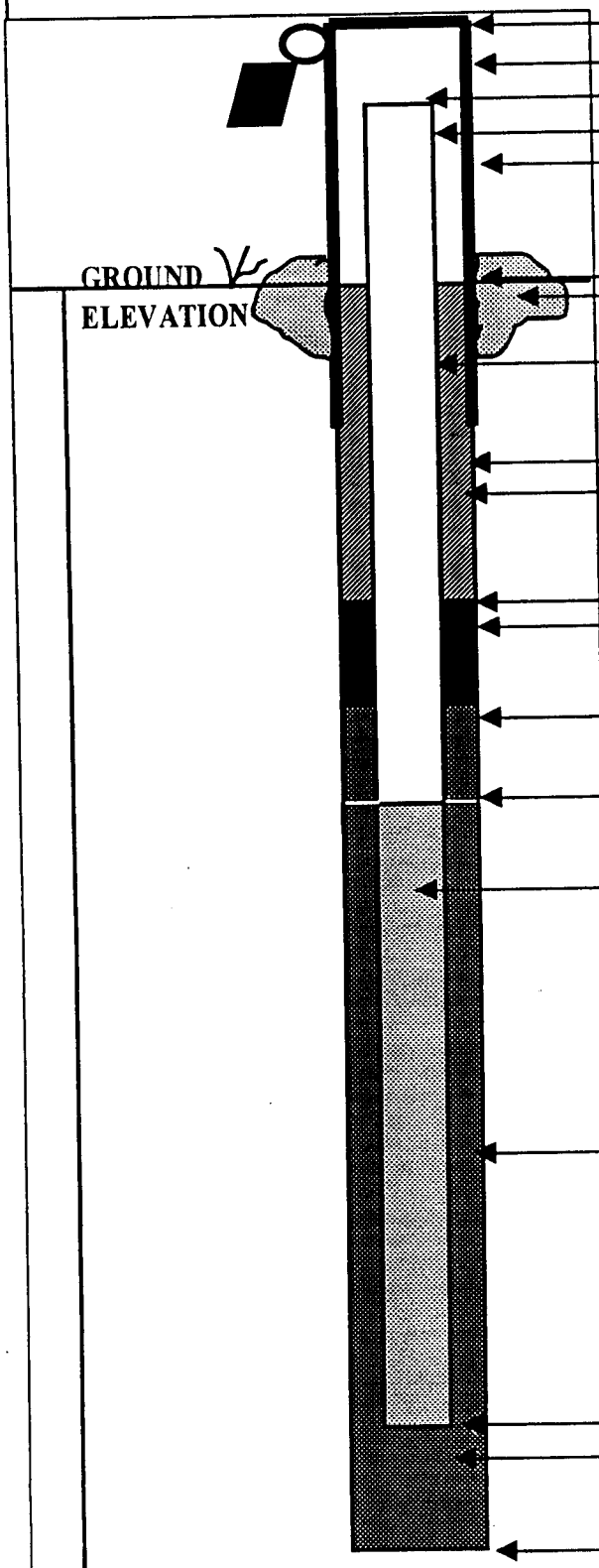


ELEVATION OF TOP OF SURFACE CASING:
STICK-UP TOP OF SURFACE CASING:
ELEVATION OF TOP OF RISER PIPE:
RISER STICK-UP ABOVE GROUND SURFACE: 2'
I.D. OF SURFACE CASING: 4 inch
TYPE OF SURFACE CASING: Steel (stick-up)
GROUND ELEVATION:
TYPE OF SURFACE SEAL: Concrete Apron
RISER PIPE I.D.: 2 inch
TYPE OF RISER PIPE: Schedule 40 PVC
BOREHOLE DIAMETER: 8 inch
TYPE OF BACKFILL: Concrete
ELEVATION / DEPTH OF SEAL: 1.5'
TYPE OF SEAL: Bentonite Holeplug
ELEVATION / DEPTH TOP OF FILTER PACK: 3'
ELEVATION / DEPTH TOP OF SCREEN: 4'
TYPE OF SCREEN: Schedule 40 PVC
SLOT SIZE X LENGTH: 0.01" x 5'
I.D. OF SCREEN: 2 inch
TYPE OF FILTER PACK: #1 Silica Quartz Sand
ELEVATION / DEPTH BOTTOM OF SCREEN: 9'
ELEVATION / DEPTH BOTTOM OF FILTER PACK: 9'
TYPE OF BACKFILL BELOW WELL: --#1 Silica Quartz Sand
ELEVATION / DEPTH OF BOREHOLE: 9'

BORING NO.: WOI-SB-127

Tetra Tech NUS, Inc. **OVERBURDEN MONITORING WELL SHEET** well # WFF16-GW7

PROJECT:	Wallops Flight Facility	DRILLING Co.:	CT+E Drilling	BORING No.:	WOI-SB-127
PROJECT No.:	4740	DRILLER:	Bob Jordan	DATE COMPLETED:	2-25-03
SITE:	WOI	DRILLING METHOD:	HSA	NORTHING:	
GEOLOGIST:	Vince Shickora	DEV. METHOD:		EASTING:	



ELEVATION OF TOP OF SURFACE CASING:	
STICK-UP TOP OF SURFACE CASING:	
ELEVATION OF TOP OF RISER PIPE:	
RISER STICK-UP ABOVE GROUND SURFACE:	2'
I.D. OF SURFACE CASING:	4 inch
TYPE OF SURFACE CASING:	Steel (stick-up)
GROUND ELEVATION:	
TYPE OF SURFACE SEAL:	Concrete Apron
RISER PIPE I.D.:	2 inch
TYPE OF RISER PIPE:	schedule 40 PVC
BOREHOLE DIAMETER:	8 inch
TYPE OF BACKFILL:	concrete
ELEVATION / DEPTH OF SEAL:	1.5'
TYPE OF SEAL:	Bentonite Holeplug
ELEVATION / DEPTH TOP OF FILTER PACK:	3'
ELEVATION / DEPTH TOP OF SCREEN:	4'
TYPE OF SCREEN:	schedule 40 PVC
SLOT SIZE X LENGTH:	0.01" x 5'
I.D. OF SCREEN:	2 inch
TYPE OF FILTER PACK:	#1 Silica Quartz Sand
ELEVATION / DEPTH BOTTOM OF SCREEN:	9'
ELEVATION / DEPTH BOTTOM OF FILTER PACK:	9'
TYPE OF BACKFILL BELOW WELL:	-- #1 Silica Quartz Sand
ELEVATION / DEPTH OF BOREHOLE:	9'

Tetra Tech NUS, Inc.

Page 1 of 2

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E
DRILLING RIG: CME 75

BORING No.: WOF-MW-3R
DATE: 1-28-03
GEOLOGIST: V. Shickora
DRILLER: B. Jordan

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
0948	S-1	1	13/8				Dark Brown	Silt and gravel to 7 inches BGS		damp	0	0	0	0
		2	5/4	21/24			orange Brown	FGR to MGR Sand with Trace silt		damp	0	0	0	0
0955	S-2	3	4/3				Tan Brown	Same as above						
		4	3/4	19/24						damp	0	0	0	0
0959	S-3	5	3/3				Tan	Same as above						
		6	3/5	16/24				with some Black Mottling		damp	0	0	0	0
1003	S-4	7	4/3											
		8	3/1	14/24			Tan Brown	Same as above		damp	0	0	0	0
1008	S-5	9	5/5											
		10	6/5	17/24			Tan	VFGR to FGR Sand with Trace silt		damp to moist	0	0	0	0
1012	S-6	11	3/5											
	~~S-7~~	12	5/2	17/24			Tan white	Same as above		moist	0	0	0	0
1017	S-7	13	3/5											
		14	5/8	15/24			Tan orange	FGR to MGR Sand with Trace silt		moist	0	0	0	0
1020	S-8	15	3/5				Tan orange	MGR Sand with Trace FGR Sand		moist	0	0	0	0
		16	8/10	16/24										
1026	S-9	17	6/7				Tan	FGR Sand		moist	0	0	0	0
		18	8/7	20/24										
1031	S-10	19	2/7				Tan Orange	FGR to MGR Sand		moist	0	0	0	0
		20	7/6	18/24										
1035	S-11	21	3/7				Tan orange	Same as above with Trace round quartz pebbles		moist	0	0	0	0
		22	7/9	19/24										
1050	S-12	23	7/8											
		24	9/10	23/24			Tan white	MGR to CGR Sand with Trace round quartz pebbles.		moist	0	0	0	0
1100	S-13	25	7/6		***					wet at 25' BGS				

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: 3.25" ID x 5' Hollow Stem Augers
Automatic Hammer (140 pound equivalent) - 2" x 2' Stainless split spoons.

Converted to Well: Yes ✓ No _____ Well I.D. #: MW-3R

Tetra Tech NUS, Inc.

BORING LOG

PROJECT NAME: Wallops Flight Facility
PROJECT NUMBER: 4740
DRILLING COMPANY: CT+E
DRILLING RIG: CME 75

BORING No.: WOA-MW-3R
DATE: 1-28-03
GEOLOGIST: L. Shichora
DRILLER: B. Jordan

Time	Sample No. and Type or RQD	Depth (Ft.) or Run No.	Blows / 6" or RQD (%)	Sample Recovery / Sample Length	Lithology Change (Depth/Ft.) or Screened Interval	MATERIAL DESCRIPTION: Soil Density/ Consistency or Rock Hardness	Color	Material Classification	USCS *	Remarks	PID/FID Reading (ppm): Sample	Sampler BZ	Borehole**	Driller BZ**
		26	5/8				Orange Tan	FGR to MGR Sand with Trace Silt		wet (saturated)	0	0	0	0
1107	S-14	27												
		28					Brown Orange	Silty Sand (FGR) with Trace clay		moist	0	0	0	0
1114	S-15	29					Brown Gray	Silty clay with Trace FGR Sand		moist (med plasticity)	0	0	0	0
		30					Gray Brown							
1120	S-16	31						Silty FGR Sand		wet (saturated)	0	0	0	0
		32						Same as above with Trace quartz pebbles		wet (saturated)	0	0	0	0
					EOB									

* When rock coring, enter rock brokeness.

** Include monitor reading in 6 foot intervals @ borehole. Increase reading frequency if elevated reponse read.

Drilling Area Background (ppm): 0

Remarks: (See page 1)

Converted to Well: Yes _____ No _____ Well I.D. #: WOA-MW-3R

APPENDIX F

VALIDATION REPORTS

TETRA TECH NUS

PHIL-17034

TO: G. GLENN **DATE:** APRIL 11, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0187

SAMPLES: **9/Solid/**

FTA-SS-101	FTA-SS-102	FTA-SS-103
FTA-SU-101-0204	FTA-SU-102-0204	FTA-SU-103-0204
FTA-SU-101-0708	FTA-SU-102-0708	FTA-SU-103-0809

1/Aqueous/

TB-020303

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0187, consists of nine soil environmental samples (designated FTA-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on February 3, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (solid)
Acetone	14 ug/kg	140 ug/kg
Chloroform*	1 ug/L	5 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The solid action levels apply to the soil environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone found in samples at concentrations less than the associated blank action level were qualified as false positives attributable to blank contamination, (B).

- The initial calibration relative response factors (RRFs) for acetone were less than the QC limit of 0.05. The associated non-detected results for acetone were qualified rejected (UR). Positive results are considered estimated, but data qualification was based upon more significant issues (blank qualification) as noted above.
- The initial calibration percent relative standard deviation (%RSD) for acetone exceeded the QC limit of 30%. Positive results are considered estimated, but data qualification was based upon more significant issues as noted above.
- The continuing calibration RRF for acetone was less than the QC limit of 0.05. Positive results are considered estimated, but data qualification was based upon more significant issues as noted above.
- Two surrogate recoveries exceeded the upper QC limit for sample FTA-SU-101-0708. The positive results for this sample are considered biased high (K), except where data was previously qualified estimated (J) due to concentrations below the quantitation limit.
- The internal standard area recovery for 1,4-dichlorobenzene-d4 in sample FTA-SU-101-0204 was less than the QC limit of 50%. The associated compound detection limits quantified by this internal standard were qualified estimated (UJ).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

SEMIVOLATILE FRACTION

- The continuing calibration percent difference (%D) for hexachlorocyclopentadiene exceeded the QC limit of 50%. The associated non-detected results for hexachlorocyclopentadiene were qualified estimated (UJ).
- The continuing calibration percent difference (%D) for carbazole and indeno(1,2,3-cd)pyrene exceeded the QC limit of 25%. The associated positive results for these compounds were qualified estimated (J).

NOTES

Sample FTA-SU-101-0708 was reanalyzed at a medium level dilution for 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene. The orginal concentrations for these compounds exceeded the calibration range of the instrument. The results for 1,3,5-trimethylbenzene and 1,2,4-trimethylbenzene only were reported from the diluted analysis.

Sample FTA-SS-101 was reanalyzed at a 2X dilution for fluoranthene. The original concentration for fluoranthene exceeded the calibration range of the instrument. The result for fluoranthene was reported from the diluted analysis.

Sample FTA-SU-101-0708 was reanalyzed at a 10X dilution due to matrix interference. All results were reported from the diluted analysis.

The data validator has corrected the proper field sample I.D.s which are shown on the data summary and handwritten atop the sample result sheets (Form I's). This action was necessary because the laboratory software used to generate the data report does not allow sufficient field width to list the entire field sample I.D.s from the chain of custody forms. The laboratory reported abbreviated I.D.s omitting the prefix "FTA-" and dashes.

No other problems were noted during review.

EXECUTIVE SUMMARY

Laboratory Performance: Acetone was detected in the volatile fraction laboratory blank. The RRF for acetone was less than the initial calibration and continuing calibration QC limit. Acetone exceeded the initial calibration %RSD QC limit. Three compounds exceeded continuing calibration QC limits for the semivolatile fraction.

Other Factors Affecting Data Quality: Chloroform was detected at in the trip blank. The surrogate recoveries for one sample exceeded QC limits in the volatile fraction. The internal standard recovery was less than the QC limit for one sample in the volatile fraction.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

DATA SUMMAR OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02C			B0187-03B			B0187-04B			B0187-05C			B0187-06B		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	11	U		3	J	P	57	K	R	10	U		10	U	
1,1,2,2-Tetrachloroethane	11	U		11	UJ	N	11	U		10	U		10	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U		11	U		11	U		10	U		10	U	
1,1,2-Trichloroethane	11	U		11	U		11	U		10	U		10	U	
1,1-Dichloroethane	11	U		11	U		3	J	PR	10	U		10	U	
1,1-Dichloroethene	11	U		11	U		11	U		10	U		10	U	
1,2,4-Trichlorobenzene	11	U		11	UJ	N	11	U		10	U		10	U	
1,2,4-Trimethylbenzene	11	U		11	UJ	N	7800			6	J	P	1	J	P
1,2-Dibromo-3-chloropropane	11	U		11	UJ	N	11	U		10	U		10	U	
1,2-Dibromoethane	11	U		11	U		11	U		10	U		10	U	
1,2-Dichlorobenzene	11	U		11	UJ	N	11	U		10	U		10	U	
1,2-Dichloroethane	11	U		11	U		11	U		10	U		10	U	
1,2-Dichloroethene (cis)	11	U		3	J	P	1	J	PR	10	U		10	U	
1,2-Dichloroethene (trans)	11	U		11	U		11	U		10	U		10	U	
1,2-Dichloropropane	11	U		11	U		11	U		10	U		10	U	
1,3,5-Trimethylbenzene	11	U		11	UJ	N	3000			2	J	P	10	U	
1,3-Dichlorobenzene	11	U		11	UJ	N	11	U		10	U		10	U	
1,4-Dichlorobenzene	11	U		11	UJ	N	11	U		10	U		10	U	
2-Butanone	11	U		6	J	P	11	U		10	U		10	U	
2-Hexanone	6	J	P	11	U		11	U		10	U		10	U	
4-Methyl-2-pentanone	11	U		11	U		11	U		10	U		10	U	
Acetone	25	B	A	20	B	A	40	B	A	7	B	A	9	B	A
Benzene	11	U		11	U		11	U		10	U		10	U	
Bromodichloromethane	11	U		11	U		11	U		10	U		10	U	
Bromoform	11	U		11	U		11	U		10	U		10	U	
Bromomethane	11	U		11	U		11	U		10	U		10	U	
Carbon Disulfide	11	U		11	U		11	U		10	U		10	U	
Carbon Tetrachloride	11	U		11	U		11	U		10	U		10	U	
Chlorobenzene	11	U		11	U		11	U		10	U		10	U	
Chloroethane	11	U		11	U		11	U		10	U		10	U	
Chloroform	11	U		11	U		11	U		10	U		10	U	
Chloromethane	11	U		11	U		11	U		10	U		10	U	
cis-1,3-Dichloropropene	11	U		11	U		11	U		10	U		10	U	
Cyclohexane	11	U		11	U		11	U		10	U		10	U	
Dibromochloromethane	11	U		11	U		11	U		10	U		10	U	
Dichlorodifluoromethane	11	U		11	U		11	U		10	U		10	U	
Ethylbenzene	11	U		11	U		110	K	R	10	U		10	U	
Isopropylbenzene	11	U		11	U		58	K	R	10	U		10	U	
m,p-xylene	11	U		11	U		180	K	R	10	U		10	U	
Methyl Acetate	11	U		11	U		11	U		10	U		10	U	
Methyl Tert-butyl Ether	11	U		11	U		11	U		10	U		10	U	
Methylcyclohexane	11	U		11	U		11	U		10	U		10	U	
Methylene Chloride	5	J	P	18			11	K	R	9	J	P	3	J	P
o-xylene	11	U		11	U		210	K	R	10	U		10	U	

DATA SUMMAR OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02C			B0187-03B			B0187-04B			B0187-05C			B0187-06B		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Styrene	11	U		11	U		11	U		10	U		10	U	
Tetrachloroethene	11	U		46			19	K	R	10	U		10	U	
Toluene	11	U		6	J	P	210	K	R	10	U		10	U	
trans-1,3-Dichloropropene	11	U		11	U		11	U		10	U		10	U	
Trichloroethene	11	U		11	U		11	U		10	U		10	U	
Trichlorofluoromethane	11	U		11	U		11	U		10	U		10	U	
Vinyl Chloride	11	U		11	U		11	U		10	U		10	U	
Xylene (Total)	11	U		11	U		390	K	R	10	U		10	U	

DATA SUMMAR OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809			TB-020303		
Laboratory ID:	B0187-07B			B0187-08C			B0187-09B			B0187-10B			B0187-01A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/L		
1,1,1-Trichloroethane	1	J	P	10	U		10	U		11	U		1	U	
1,1,2,2-Tetrachloroethane	10	U		10	U		10	U		11	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U		10	U		10	U		11	U		1	U	
1,1,2-Trichloroethane	10	U		10	U		10	U		11	U		1	U	
1,1-Dichloroethane	10	U		10	U		10	U		11	U		1	U	
1,1-Dichloroethene	10	U		10	U		10	U		11	U		1	U	
1,2,4-Trichlorobenzene	10	U		10	U		10	U		11	U		1	U	
1,2,4-Trimethylbenzene	10	U		10	U		10	U		11	U		1	U	
1,2-Dibromo-3-chloropropane	10	U		10	U		10	U		11	U		1	U	
1,2-Dibromoethane	10	U		10	U		10	U		11	U		1	U	
1,2-Dichlorobenzene	10	U		10	U		10	U		11	U		1	U	
1,2-Dichloroethane	10	U		10	U		10	U		11	U		1	U	
1,2-Dichloroethene (cis)	10	U		10	U		10	U		11	U		1	U	
1,2-Dichloroethene (trans)	10	U		10	U		10	U		11	U		1	U	
1,2-Dichloropropane	10	U		10	U		10	U		11	U		1	U	
1,3,5-Trimethylbenzene	10	U		10	U		10	U		11	U		1	U	
1,3-Dichlorobenzene	10	U		10	U		10	U		11	U		1	U	
1,4-Dichlorobenzene	10	U		10	U		10	U		11	U		1	U	
2-Butanone	10	U		10	U		10	U		11	U		5	U	
2-Hexanone	10	U		10	U		10	U		11	U		5	U	
4-Methyl-2-pentanone	10	U		10	U		10	U		11	U		5	U	
Acetone	4	B	A	9	B	A	4	B	A	4	B	A	5	UR	C
Benzene	10	U		10	U		10	U		11	U		1	U	
Bromodichloromethane	10	U		10	U		10	U		11	U		1	U	
Bromoform	10	U		10	U		10	U		11	U		1	U	
Bromomethane	10	U		10	U		10	U		11	U		1	U	
Carbon Disulfide	10	U		10	U		10	U		11	U		1	U	
Carbon Tetrachloride	10	U		10	U		10	U		11	U		1	U	
Chlorobenzene	10	U		10	U		10	U		11	U		1	U	
Chloroethane	10	U		10	U		10	U		11	U		1	U	
Chloroform	10	U		10	U		10	U		11	U		1		
Chloromethane	10	U		10	U		10	U		11	U		1	U	
cis-1,3-Dichloropropene	10	U		10	U		10	U		11	U		1	U	
Cyclohexane	10	U		10	U		10	U		11	U		1	U	
Dibromochloromethane	10	U		10	U		10	U		11	U		1	U	
Dichlorodifluoromethane	10	U		10	U		10	U		11	U		1	U	
Ethylbenzene	10	U		10	U		10	U		11	U		1	U	
Isopropylbenzene	10	U		10	U		10	U		11	U		1	U	
m,p-xylene	10	U		10	U		10	U		11	U		1	U	
Methyl Acetate	10	U		10	U		10	U		11	U		1	U	
Methyl Tert-butyl Ether	10	U		10	U		10	U		11	U		1	U	
Methylcyclohexane	10	U		10	U		10	U		11	U		1	U	
Methylene Chloride	2	J	P	7	J	P	2	J	P	2	J	P	2	U	
o-xylene	10	U		10	U		10	U		11	U		1	U	

DATA SUMMAR OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809			TB-020303		
Laboratory ID:	B0187-07B			B0187-08C			B0187-09B			B0187-10B			B0187-01A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/L		
Styrene	10	U		10	U		10	U		11	U		1	U	
Tetrachloroethene	10	U		10	U		10	U		11	U		1	U	
Toluene	10	U		10	U		10	U		11	U		1	U	
trans-1,3-Dichloropropene	10	U		10	U		10	U		11	U		1	U	
Trichloroethene	10	U		10	U		10	U		11	U		1	U	
Trichlorofluoromethane	10	U		10	U		10	U		11	U		1	U	
Vinyl Chloride	10	U		10	U		10	U		11	U		1	U	
Xylene (Total)	10	U		10	U		10	U		11	U		1	U	

DATA SUMMAR OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0187\OV_B0187.DBF data retrieved on: 04/11/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02A			B0187-03A			B0187-04A			B0187-05A			B0187-06A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	400	U		370	U		3700	U		350	U		360	U	
1,2-Dichlorobenzene	400	U		370	U		3700	U		350	U		360	U	
1,3-Dichlorobenzene	400	U		370	U		3700	U		350	U		360	U	
1,4-Dichlorobenzene	400	U		370	U		3700	U		350	U		360	U	
2,2-Oxybis(1-chloropropane)	400	U		370	U		3700	U		350	U		360	U	
2,4,5-Trichlorophenol	820	U		760	U		7500	U		720	U		740	U	
2,4,6-Trichlorophenol	400	U		370	U		3700	U		350	U		360	U	
2,4-Dichlorophenol	400	U		370	U		3700	U		350	U		360	U	
2,4-Dimethylphenol	400	U		370	U		3700	U		350	U		360	U	
2,4-Dinitrophenol	820	U		760	U		7500	U		720	U		740	U	
2,4-Dinitrotoluene	400	U		370	U		3700	U		350	U		360	U	
2,6-Dinitrotoluene	400	U		370	U		3700	U		350	U		360	U	
2-Chloronaphthalene	400	U		370	U		3700	U		350	U		360	U	
2-Chlorophenol	400	U		370	U		3700	U		350	U		360	U	
2-Methylnaphthalene	400	U		370	U		32000			350	U		360	U	
2-Methylphenol	400	U		370	U		3700	U		350	U		360	U	
2-Nitroaniline	820	U		760	U		7500	U		720	U		740	U	
2-Nitrophenol	400	U		370	U		3700	U		350	U		360	U	
3,3-Dichlorobenzidine	400	U		370	U		3700	U		350	U		360	U	
3-Nitroaniline	820	U		760	U		7500	U		720	U		740	U	
4,6-Dinitro-2-methylphenol	820	U		760	U		7500	U		720	U		740	U	
4-Bromophenyl Phenyl Ether	400	U		370	U		3700	U		350	U		360	U	
4-Chloro-3-methylphenol	400	U		370	U		3700	U		350	U		360	U	
4-Chloroaniline	400	U		370	U		3700	U		350	U		360	U	
4-Chlorophenyl Phenyl Ether	400	U		370	U		3700	U		350	U		360	U	
4-Methylphenol	400	U		370	U		3700	U		350	U		360	U	
4-Nitroaniline	820	U		760	U		7500	U		720	U		740	U	
4-Nitrophenol	820	U		760	U		7500	U		720	U		740	U	
Acenaphthene	100	J	P	370	U		3700	U		350	U		360	U	
Acenaphthylene	400	U		370	U		3700	U		350	U		360	U	
Anthracene	180	J	P	370	U		3700	U		350	U		360	U	
Benz(a)anthracene	2500			370	U		3700	U		350	U		360	U	
Benzo(a)pyrene	2400			370	U		3700	U		350	U		360	U	
Benzo(b)fluoranthene	5300			370	U		3700	U		350	U		360	U	
Benzo(g,h,i)perylene	980			370	U		3700	U		350	U		360	U	
Benzo(k)fluoranthene	2000			370	U		3700	U		350	U		360	U	
Bis(2-chloroethoxy)methane	400	U		370	U		3700	U		350	U		360	U	
Bis(2-chloroethyl)ether	400	U		370	U		3700	U		350	U		360	U	
Bis(2-ethylhexyl)phthalate	400	U		370	U		910	J	P	350	U		360	U	
Butylbenzylphthalate	400	U		370	U		3700	U		350	U		360	U	
Carbazole	280	J	CP	370	U		3700	U		720	U		740	U	
Chrysene	2800			370	U		3700	U		350	U		360	U	
Di-n-butylphthalate	400	U		370	U		3700	U		350	U		360	U	
Di-n-octylphthalate	400	U		370	U		3700	U		350	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02A			B0187-03A			B0187-04A			B0187-05A			B0187-06A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Dibenz(a,h)anthracene	290	J	P	370	U		3700	U		350	U		360	U	
Dibenzofuran	68	J	P	370	U		570	J	P	350	U		360	U	
Diethylphthalate	400	U		370	U		3700	U		350	U		360	U	
Dimethylphthalate	400	U		370	U		3700	U		350	U		360	U	
Fluoranthene	6000			370	U		3700	U		350	U		360	U	
Fluorene	100	J	P	370	U		1200	J	P	350	U		360	U	
Hexachlorobenzene	400	U		370	U		3700	U		350	U		360	U	
Hexachlorobutadiene	400	U		370	U		3700	U		350	U		360	U	
Hexachlorocyclopentadiene	400	U		370	U		3700	U		350	UJ	C	360	UJ	C
Hexachloroethane	400	U		370	U		3700	U		350	U		360	U	
Indeno(1,2,3-cd)pyrene	1100	J	C	370	U		3700	U		350	U		360	U	
Isophorone	400	U		370	U		3700	U		350	U		360	U	
N-Nitroso-di-n-propylamine	400	U		370	U		3700	U		350	U		360	U	
N-Nitrosodiphenylamine (1)	400	U		370	U		3700	U		350	U		360	U	
Naphthalene	400	U		370	U		9900			350	U		360	U	
Nitrobenzene	400	U		370	U		3700	U		350	U		360	U	
Pentachlorophenol	820	U		760	U		7500	U		720	U		740	U	
Phenanthrene	3800			370	U		4000			350	U		360	U	
Phenol	400	U		370	U		3700	U		350	U		360	U	
Pyrene	5200			370	U		410	J	P	350	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809		
Laboratory ID:	B0187-07A			B0187-08A			B0187-09A			B0187-10A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	340	U		350	U		360	U		350	U	
1,2-Dichlorobenzene	340	U		350	U		360	U		350	U	
1,3-Dichlorobenzene	340	U		350	U		360	U		350	U	
1,4-Dichlorobenzene	340	U		350	U		360	U		350	U	
2,2-Oxybis(1-chloropropane)	340	U		350	U		360	U		350	U	
2,4,5-Trichlorophenol	690	U		710	U		730	U		700	U	
2,4,6-Trichlorophenol	340	U		350	U		360	U		350	U	
2,4-Dichlorophenol	340	U		350	U		360	U		350	U	
2,4-Dimethylphenol	340	U		350	U		360	U		350	U	
2,4-Dinitrophenol	690	U		710	U		730	U		700	U	
2,4-Dinitrotoluene	340	U		350	U		360	U		350	U	
2,6-Dinitrotoluene	340	U		350	U		360	U		350	U	
2-Chloronaphthalene	340	U		350	U		360	U		350	U	
2-Chlorophenol	340	U		350	U		360	U		350	U	
2-Methylnaphthalene	340	U		350	U		360	U		350	U	
2-Methylphenol	340	U		350	U		360	U		350	U	
2-Nitroaniline	690	U		710	U		730	U		700	U	
2-Nitrophenol	340	U		350	U		360	U		350	U	
3,3-Dichlorobenzidine	340	U		350	U		360	U		350	U	
3-Nitroaniline	690	U		710	U		730	U		700	U	
4,6-Dinitro-2-methylphenol	690	U		710	U		730	U		700	U	
4-Bromophenyl Phenyl Ether	340	U		350	U		360	U		350	U	
4-Chloro-3-methylphenol	340	U		350	U		360	U		350	U	
4-Chloroaniline	340	U		350	U		360	U		350	U	
4-Chlorophenyl Phenyl Ether	340	U		350	U		360	U		350	U	
4-Methylphenol	340	U		350	U		360	U		350	U	
4-Nitroaniline	690	U		710	U		730	U		700	U	
4-Nitrophenol	690	U		710	U		730	U		700	U	
Acenaphthene	340	U		350	U		360	U		350	U	
Acenaphthylene	340	U		350	U		360	U		350	U	
Anthracene	340	U		350	U		360	U		350	U	
Benz(a)anthracene	340	U		350	U		360	U		350	U	
Benzo(a)pyrene	340	U		350	U		360	U		350	U	
Benzo(b)fluoranthene	340	U		350	U		360	U		350	U	
Benzo(g,h,i)perylene	340	U		350	U		360	U		350	U	
Benzo(k)fluoranthene	340	U		350	U		360	U		350	U	
Bis(2-chloroethoxy)methane	340	U		350	U		360	U		350	U	
Bis(2-chloroethyl)ether	340	U		350	U		360	U		350	U	
Bis(2-ethylhexyl)phthalate	95	J	P	350	U		360	U		350	U	
Butylbenzylphthalate	340	U		350	U		360	U		350	U	
Carbazole	690	U		710	U		730	U		700	U	
Chrysene	340	U		350	U		360	U		350	U	
Di-n-butylphthalate	340	U		350	U		360	U		350	U	
Di-n-octylphthalate	340	U		350	U		360	U		350	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809		
Laboratory ID:	B0187-07A			B0187-08A			B0187-09A			B0187-10A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg		
Dibenz(a,h)anthracene	340	U		350	U		360	U		350	U	
Dibenzofuran	340	U		350	U		360	U		350	U	
Diethylphthalate	340	U		350	U		360	U		350	U	
Dimethylphthalate	340	U		350	U		360	U		350	U	
Fluoranthene	340	U		350	U		360	U		350	U	
Fluorene	340	U		350	U		360	U		350	U	
Hexachlorobenzene	340	U		350	U		360	U		350	U	
Hexachlorobutadiene	340	U		350	U		360	U		350	U	
Hexachlorocyclopentadiene	340	UJ	C	350	UJ	C	360	UJ	C	350	UJ	C
Hexachloroethane	340	U		350	U		360	U		350	U	
Indeno(1,2,3-cd)pyrene	340	U		350	U		360	U		350	U	
Isophorone	340	U		350	U		360	U		350	U	
N-Nitroso-di-n-propylamine	340	U		350	U		360	U		350	U	
N-Nitrosodiphenylamine (1)	340	U		350	U		360	U		350	U	
Naphthalene	340	U		350	U		360	U		350	U	
Nitrobenzene	340	U		350	U		360	U		350	U	
Pentachlorophenol	690	U		710	U		730	U		700	U	
Phenanthrene	340	U		350	U		360	U		350	U	
Phenol	340	U		350	U		360	U		350	U	
Pyrene	340	U		350	U		360	U		350	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0187\OS_B0187.DBF data retrieved on: 04/11/03

DATA SUMMARY OF PCB RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02RE			B0187-03A			B0187-04A			B0187-05A			B0187-06RE		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	41	U		38	U		37	U		36	U		37	U	
Aroclor-1221	41	U		38	U		37	U		36	U		37	U	
Aroclor-1232	41	U		38	U		37	U		36	U		37	U	
Aroclor-1242	41	U		38	U		37	U		36	U		37	U	
Aroclor-1248	41	U		38	U		37	U		36	U		37	U	
Aroclor-1254	41	U		38	U		37	U		36	U		37	U	
Aroclor-1260	41	U		38	U		37	U		36	U		37	U	

DATA SUMMARY OF PCB RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809		
Laboratory ID:	B0187-07RE			B0187-08A			B0187-09RE			B0187-10A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	34	U		35	U		37	U		35	U	
Aroclor-1221	34	U		35	U		37	U		35	U	
Aroclor-1232	34	U		35	U		37	U		35	U	
Aroclor-1242	34	U		35	U		37	U		35	U	
Aroclor-1248	34	U		35	U		37	U		35	U	
Aroclor-1254	34	U		35	U		37	U		35	U	
Aroclor-1260	34	U		35	U		37	U		35	U	

DATA SUMMARY OF PCB RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0187\PCB_B0187.DBF data retrieved on: 04/11/03

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3686

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 19 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	25	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	6	J
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: . SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3686

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 19 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

000017

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3686

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 19 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.01	7	J
2.	91-20-3	NAPHTHALENE	14.97	25	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3689

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	7	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	9	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

000019

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3689

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	2	J
95-63-6	1,2,4-Trimethylbenzene	6	J
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3689

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	12.81	38	J
2.		STRAIGHT-CHAIN ALKANE	14.15	69	J
3.		BRANCHED ALKANE	14.34	23	J
4.	1758-85-6	BENZENE, 2,4-DIETHYL-1-METHY	14.66	22	NJ
5.	91-20-3	NAPHTHALENE	14.97	84	NJ
6.		UNKNOWN	15.09	63	J
7.		UNKNOWN	15.22	25	J
8.		STRAIGHT-CHAIN ALKANE	15.41	72	J
9.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	15.70	43	NJ
10.		UNKNOWN	15.85	32	J
11.		UNKNOWN	15.94	29	J
12.		UNKNOWN	16.01	49	J
13.		UNKNOWN	16.09	46	J
14.		UNKNOWN	16.14	40	J
15.		UNKNOWN	16.23	45	J
16.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	340	NJ
17.		UNKNOWN	16.38	36	J
18.		UNKNOWN	16.47	30	J
19.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	230	NJ
20.		UNKNOWN	16.65	39	J
21.		UNKNOWN	16.74	36	J
22.		UNKNOWN	16.91	26	J
23.		UNKNOWN	16.99	24	J
24.	827-54-3	NAPHTHALENE, 2-ETHENYL-	17.12	65	NJ
25.	1127-76-0	NAPHTHALENE, 1-ETHYL-	17.33	43	NJ
26.		UNKNOWN	17.37	25	J
27.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.43	79	NJ
28.	569-41-5	NAPHTHALENE, 1,8-DIMETHYL-	17.59	73	NJ
29.		UNKNOWN	17.63	45	J
30.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	17.83	26	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3692

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	9	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3692

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3692

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	14.15	8	J
2.		UNKNOWN	15.09	6	J
3.		STRAIGHT-CHAIN ALKANE	15.41	8	J
4.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	13	NJ
5.	90-12-0	NAPHTHALENE, 1-METHYL-	16.53	10	NJ
6.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	17.44	7	NJ
7.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	17.59	7	NJ
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-101-0204

SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3687

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 13 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	18	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	6	J
156-59-2	cis-1,2-Dichloroethene	3	J
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	3	J
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	6	J
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	46	
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

000025

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SV-101-0204
SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3687

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 13 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SV-101-0204
SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3687

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 13 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.98	7	NJ
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-101-0708

SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3688

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	40	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	11	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	3	J
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	1	J
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	57	
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	210	
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	19	
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	110	

000020

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-101-0708

SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3688

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	180	
95-47-6	o-Xylene	210	
1330-20-7	Xylene (Total)	390	
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	58	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	480	E
95-63-6	1,2,4-Trimethylbenzene	1300	E
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SV-101-0708

SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3688

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.08	150	J
2.		UNKNOWN	7.40	190	J
3.		STRAIGHT-CHAIN ALKANE	9.80	960	J
4.		BRANCHED ALKANE	10.38	480	J
5.		UNKNOWN	10.53	960	J
6.		UNKNOWN	10.73	500	J
7.		UNKNOWN	11.06	58	J
8.		UNKNOWN	11.24	51	J
9.		STRAIGHT-CHAIN ALKANE	11.39	180	J
10.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.61	65	NJ
11.		STRAIGHT-CHAIN ALKANE	11.74	81	J
12.		UNKNOWN	11.92	38	J
13.		UNKNOWN	12.01	76	J
14.		UNKNOWN	12.11	130	J
15.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.33	79	NJ
16.		BRANCHED ALKANE	12.45	78	J
17.	135-98-8	BENZENE, (1-METHYLPROPYL)-	12.59	79	NJ
18.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	12.67	110	NJ
19.		STRAIGHT-CHAIN ALKANE	12.84	120	J
20.		UNKNOWN	12.91	80	J
21.		UNKNOWN	13.05	110	J
22.	2870-04-4	BENZENE, 2-ETHYL-1,3-DIMETHY	13.13	63	NJ
23.		UNKNOWN	13.23	27	J
24.		UNKNOWN	13.29	62	J
25.		UNKNOWN	13.41	41	J
26.		UNKNOWN	13.47	54	J
27.		CYCLIC ALKANE	13.57	37	J
28.		UNKNOWN	13.62	34	J
29.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.69	29	NJ
30.		UNKNOWN	14.21	27	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-101-0708 DL

SV1010708DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04BDL

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V6C4750

Level: (low/med) MED Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	250	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	250	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	250	U
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
78-93-3	2-Butanone	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	130	DJ
56-23-5	Carbon Tetrachloride	250	U
107-06-2	1,2-Dichloroethane	250	U
71-43-2	Benzene	250	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-pentanone	250	U
108-88-3	Toluene	630	D
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	57	DJ
591-78-6	2-Hexanone	250	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	320	D

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-101-0708 DL
SV1010708DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04BDL

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V6C4750

Level: (low/med) MED Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	560	D
95-47-6	o-Xylene	700	D
1330-20-7	Xylene (Total)	1300	D
100-42-5	Styrene	250	U
75-25-2	Bromoform	250	U
98-82-8	Isopropylbenzene	250	DJ
79-34-5	1,1,2,2-Tetrachloroethane	250	U
108-67-8	1,3,5-Trimethylbenzene	3000	D
95-63-6	1,2,4-Trimethylbenzene	7800	D
541-73-1	1,3-Dichlorobenzene	250	U
106-46-7	1,4-Dichlorobenzene	250	U
95-50-1	1,2-Dichlorobenzene	250	U
96-12-8	1,2-Dibromo-3-chloropropane	250	U
120-82-1	1,2,4-Trichlorobenzene	250	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	250	U
79-20-9	Methyl Acetate	250	U
110-81-7	Cyclohexane	250	U
108-87-2	Methylcyclohexane	250	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SU-101-0708DL

SV1010708DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04BDL

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V6C4750

Level: (low/med) MED Date Received: 02/04/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.84	3600	JD
2.		STRAIGHT-CHAIN ALKANE	11.11	5400	JD
3.		UNKNOWN	11.51	1800	JD
4.		UNKNOWN	11.90	3700	JD
5.	622-96-8	BENZENE, 1-ETHYL-4-METHYL-	12.98	4900	NJD
6.		BRANCHED ALKANE	13.10	2300	JD
7.		UNKNOWN	13.47	11000	JD
8.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	13.67	7900	NJD
9.		UNKNOWN	13.92	6300	JD
10.	105-05-5	BENZENE, 1,4-DIETHYL-	13.99	12000	NJD
11.		STRAIGHT-CHAIN ALKANE	14.13	12000	JD
12.		UNKNOWN	14.21	4500	JD
13.		UNKNOWN	14.34	5000	JD
14.	2870-04-4	BENZENE, 2-ETHYL-1,3-DIMETHY	14.42	4100	NJD
15.		UNKNOWN	14.57	6000	JD
16.	2050-24-0	BENZENE, 1,3-DIETHYL-5-METHY	14.67	3200	NJD
17.		UNKNOWN	14.75	6400	JD
18.		UNKNOWN	14.82	3300	JD
19.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	14.87	4000	NJD
20.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	14.92	5900	NJD
21.		UNKNOWN	15.00	8900	JD
22.		UNKNOWN	15.18	5700	JD
23.		UNKNOWN	15.33	8300	JD
24.		UNKNOWN	15.40	12000	JD
25.		UNKNOWN	15.49	3200	JD
26.		UNKNOWN	15.58	25000	JD
27.		STRAIGHT-CHAIN ALKANE	16.41	2800	JD
28.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	16.72	4000	NJD
29.	91-57-6	NAPHTHALENE, 2-METHYL-	17.29	6400	NJD
30.	90-12-0	NAPHTHALENE, 1-METHYL-	17.49	5300	NJD

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SV-102-0204
SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3690

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	9	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

000034

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0204

SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3690

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

000035

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VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SV-102-0204

SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3690

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	11.35	6	J
2.		STRAIGHT-CHAIN ALKANE	12.81	10	J
3.		STRAIGHT-CHAIN ALKANE	14.15	18	J
4.		UNKNOWN	14.34	7	J
5.	91-20-3	NAPHTHALENE	14.97	12	NJ
6.		UNKNOWN	15.09	15	J
7.		STRAIGHT-CHAIN ALKANE	15.41	20	J
8.		UNKNOWN	15.70	6	J
9.	1559-81-5	NAPHTHALENE, 1,2,3,4-TETRAHY	16.09	5	NJ
10.		UNKNOWN	16.14	5	J
11.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	45	NJ
12.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	31	NJ
13.	827-54-3	NAPHTHALENE, 2-ETHENYL-	17.12	8	NJ
14.	1127-76-0	NAPHTHALENE, 1-ETHYL-	17.32	7	NJ
15.	575-43-9	NAPHTHALENE, 1,6-DIMETHYL-	17.44	18	NJ
16.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	17.59	17	NJ
17.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.63	12	NJ
18.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	17.82	7	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0708

SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3691

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 4 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	1	J
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0708

SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3691

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 4 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SU-102-0708
SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3691

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 4 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 10 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	12.81	5	J
2.		STRAIGHT-CHAIN ALKANE	14.15	10	J
3.	91-20-3	NAPHTHALENE	14.97	5	NJ
4.		UNKNOWN	15.08	7	J
5.		STRAIGHT-CHAIN ALKANE	15.41	9	J
6.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	17	NJ
7.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	11	NJ
8.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.44	10	NJ
9.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	17.59	11	NJ
10.	575-43-9	NAPHTHALENE, 1,6-DIMETHYL-	17.63	5	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-103-0204

SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09B

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3693

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FIA-SV-103-0204
SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09B

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3693

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

000041

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SV-103-0204

SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09B

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3693

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	5	NJ
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-103-0809
SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3694

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 5 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

000043

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SV-103-0809
SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3694

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 5 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SV-103-0809

SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3694

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. 5 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) WATER Lab Sample ID: B0187-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4672

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. _____ Date Analyzed: 02/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) WATER Lab Sample ID: B0187-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4672

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. _____ Date Analyzed: 02/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-020303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) WATER Lab Sample ID: B0187-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4672

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: not dec. _____ Date Analyzed: 02/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2085

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	820	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	820	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	820	U
83-32-9	Acenaphthene	100	J

000057

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2085

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	820	U
100-02-7	4-Nitrophenol	820	U
132-64-9	Dibenzofuran	68	J
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	100	J
100-01-6	4-Nitroaniline	820	U
534-52-1	4,6-Dinitro-2-methylphenol	820	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	820	U
85-01-8	Phenanthrene	3800	
120-12-7	Anthracene	180	J
86-74-8	Carbazole	280	J
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	6900	E
129-00-0	Pyrene	5200	
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	2500	
218-01-9	Chrysene	2800	
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	5300	
207-08-9	Benzo(k)fluoranthene	2000	
50-32-8	Benzo(a)pyrene	2400	
193-39-5	Indeno(1,2,3-cd)pyrene	1100	
53-70-3	Dibenzo(a,h)anthracene	290	J
191-24-2	Benzo(g,h,i)perylene	980	

(1) - Cannot be separated from Diphenylamine

000058

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2085

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	613-12-7	ANTHRACENE, 2-METHYL-	17.74	250	NJ
2.	203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	17.90	340	NJ
3.	84-65-1	9,10-ANTHRACENEDIONE	18.35	500	NJ
4.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	21.30	170	NJ
5.		UNKNOWN	21.52	180	J
6.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	21.74	170	NJ
7.	192-97-2	BENZO[E]PYRENE	24.57	2400	NJ
8.	205-82-3	BENZO[J]FLUORANTHENE	24.83	570	NJ
9.		UNKNOWN	27.86	660	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2130

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	810	U
111-44-4	bis(2-Chloroethyl)Ether	810	U
95-57-8	2-Chlorophenol	810	U
541-73-1	1,3-Dichlorobenzene	810	U
106-46-7	1,4-Dichlorobenzene	810	U
95-50-1	1,2-Dichlorobenzene	810	U
95-48-7	2-Methylphenol	810	U
108-60-1	2,2'-oxybis(1-Chloropropane)	810	U
106-44-5	4-Methylphenol	810	U
621-64-7	N-Nitroso-di-n-propylamine	810	U
67-72-1	Hexachloroethane	810	U
98-95-3	Nitrobenzene	810	U
78-59-1	Isophorone	810	U
88-75-5	2-Nitrophenol	810	U
105-67-9	2,4-Dimethylphenol	810	U
120-83-2	2,4-Dichlorophenol	810	U
120-82-1	1,2,4-Trichlorobenzene	810	U
91-20-3	Naphthalene	810	U
106-47-8	4-Chloroaniline	810	U
111-91-1	bis(2-Chloroethoxy)methane	810	U
87-68-3	Hexachlorobutadiene	810	U
59-50-7	4-Chloro-3-Methylphenol	810	U
91-57-6	2-Methylnaphthalene	810	U
77-47-4	Hexachlorocyclopentadiene	810	U
88-06-2	2,4,6-Trichlorophenol	810	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	810	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	810	U
208-96-8	Acenaphthylene	810	U
606-20-2	2,6-Dinitrotoluene	810	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	97	DJ

000060

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2130

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	810	U
121-14-2	2,4-Dinitrotoluene	810	U
84-66-2	Diethylphthalate	810	U
7005-72-3	4-Chlorophenyl-phenylether	810	U
86-73-7	Fluorene	94	DJ
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	810	U
101-55-3	4-Bromophenyl-phenylether	810	U
118-74-1	Hexachlorobenzene	810	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	3200	D
120-12-7	Anthracene	160	DJ
86-74-8	Carbazole	400	DJ
84-74-2	Di-n-butylphthalate	810	U
206-44-0	Fluoranthene	6000	D
129-00-0	Pyrene	5700	D
85-68-7	Butylbenzylphthalate	810	U
91-94-1	3,3'-Dichlorobenzidine	810	U
56-55-3	Benzo(a)anthracene	2400	D
218-01-9	Chrysene	2800	D
117-81-7	bis(2-Ethylhexyl)phthalate	810	U
117-84-0	Di-n-octylphthalate	810	U
205-99-2	Benzo(b)fluoranthene	3700	D
207-08-9	Benzo(k)fluoranthene	1700	D
50-32-8	Benzo(a)pyrene	2000	D
193-39-5	Indeno(1,2,3-cd)pyrene	1300	D
53-70-3	Dibenzo(a,h)anthracene	360	DJ
191-24-2	Benzo(g,h,i)perylene	1500	D

(1) - Cannot be separated from Diphenylamine

00001

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS101DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02ADL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2130

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	17.83	350	NJD
2.	84-65-1	9,10-ANTHRACENEDIONE	18.28	570	NJD
3.	198-55-0	PERYLENE	24.48	2300	NJD
4.	192-97-2	BENZO[E]PYRENE	24.74	660	NJD
5.		UNKNOWN	27.62	720	JD
6.		UNKNOWN	27.70	1000	JD
7.		UNKNOWN	29.53	610	JD
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1918

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	350	U

000063

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1918

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	720	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

000069

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1918

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	83-48-7	STIGMASTEROL	28.64	150	NJ
2.	127-22-0	TARAXEROL	30.05	180	NJ
3.		UNKNOWN	31.05	470	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1921

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1921

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	710	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D1921

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.32	480	J
2.		UNKNOWN	22.39	520	J
3.		UNKNOWN	28.34	170	J
4.		UNKNOWN	28.65	180	J
5.		UNKNOWN	31.06	320	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-101-0204

SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2086

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	U
83-32-9	Acenaphthene	370	U

00069

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SV-101-0204
SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2086

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

000070

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SU-101-0204
SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2086

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-101-0708

SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2129

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3700	U
111-44-4	bis(2-Chloroethyl)Ether	3700	U
95-57-8	2-Chlorophenol	3700	U
541-73-1	1,3-Dichlorobenzene	3700	U
106-46-7	1,4-Dichlorobenzene	3700	U
95-50-1	1,2-Dichlorobenzene	3700	U
95-48-7	2-Methylphenol	3700	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3700	U
106-44-5	4-Methylphenol	3700	U
621-64-7	N-Nitroso-di-n-propylamine	3700	U
67-72-1	Hexachloroethane	3700	U
98-95-3	Nitrobenzene	3700	U
78-59-1	Isophorone	3700	U
88-75-5	2-Nitrophenol	3700	U
105-67-9	2,4-Dimethylphenol	3700	U
120-83-2	2,4-Dichlorophenol	3700	U
120-82-1	1,2,4-Trichlorobenzene	3700	U
91-20-3	Naphthalene	9900	
106-47-8	4-Chloroaniline	3700	U
111-91-1	bis(2-Chloroethoxy)methane	3700	U
87-68-3	Hexachlorobutadiene	3700	U
59-50-7	4-Chloro-3-Methylphenol	3700	U
91-57-6	2-Methylnaphthalene	32000	
77-47-4	Hexachlorocyclopentadiene	3700	U
88-06-2	2,4,6-Trichlorophenol	3700	U
95-95-4	2,4,5-Trichlorophenol	7500	U
91-58-7	2-Chloronaphthalene	3700	U
88-74-4	2-Nitroaniline	7500	U
131-11-3	Dimethylphthalate	3700	U
208-96-8	Acenaphthylene	3700	U
606-20-2	2,6-Dinitrotoluene	3700	U
99-09-2	3-Nitroaniline	7500	U
83-32-9	Acenaphthene	3700	U

000072

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-101-0708

SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2129

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	7500	U
100-02-7	4-Nitrophenol	7500	U
132-64-9	Dibenzofuran	570	J
121-14-2	2,4-Dinitrotoluene	3700	U
84-66-2	Diethylphthalate	3700	U
7005-72-3	4-Chlorophenyl-phenylether	3700	U
86-73-7	Fluorene	1200	J
100-01-6	4-Nitroaniline	7500	U
534-52-1	4,6-Dinitro-2-methylphenol	7500	U
86-30-6	N-Nitrosodiphenylamine (1)	3700	U
101-55-3	4-Bromophenyl-phenylether	3700	U
118-74-1	Hexachlorobenzene	3700	U
87-86-5	Pentachlorophenol	7500	U
85-01-8	Phenanthrene	4000	
120-12-7	Anthracene	3700	U
86-74-8	Carbazole	3700	U
84-74-2	Di-n-butylphthalate	3700	U
206-44-0	Fluoranthene	3700	U
129-00-0	Pyrene	410	J
85-68-7	Butylbenzylphthalate	3700	U
91-94-1	3,3'-Dichlorobenzidine	3700	U
56-55-3	Benzo(a)anthracene	3700	U
218-01-9	Chrysene	3700	U
117-81-7	bis(2-Ethylhexyl)phthalate	910	J
117-84-0	Di-n-octylphthalate	3700	U
205-99-2	Benzo(b)fluoranthene	3700	U
207-08-9	Benzo(k)fluoranthene	3700	U
50-32-8	Benzo(a)pyrene	3700	U
193-39-5	Indeno(1,2,3-cd)pyrene	3700	U
53-70-3	Dibenzo(a,h)anthracene	3700	U
191-24-2	Benzo(g,h,i)perylene	3700	U

(1) - Cannot be separated from Diphenylamine

000073

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SV-101-0708
SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2129

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.66	17000	J
2.	90-12-0	NAPHTHALENE, 1-METHYL-	11.70	17000	NJ
3.		UNKNOWN	11.95	3600	J
4.		UNKNOWN	12.22	5200	J
5.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	12.63	3200	NJ
6.	582-16-1	NAPHTHALENE, 2,7-DIMETHYL-	12.78	3600	NJ
7.	575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	12.94	5000	NJ
8.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	12.98	3000	NJ
9.		UNKNOWN	13.16	7200	J
10.		UNKNOWN	16.49	34000	J
11.	629-92-5	NONADECANE	17.36	28000	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0204

SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1919

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0204

SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1919

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	740	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SU-102-0204
SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1919

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	872-05-9	1-DECENE	13.78	270	NJ
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0708

SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1920

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	690	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	690	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	690	U
83-32-9	Acenaphthene	340	U

000078

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-102-0708

SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1920

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	690	U
100-02-7	4-Nitrophenol	690	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	690	U
534-52-1	4,6-Dinitro-2-methylphenol	690	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	690	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	690	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	95	J
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

000079

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

~~TENTATIVELY~~ IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SV-102-0708

SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D1920

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	872-05-9	1-DECENE	13.80	210	NJ
2.		UNKNOWN	22.38	1100	J
3.					
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-103-02Q4

SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D1922

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

000081

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SV-103-0204
SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D1922

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	730	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

000082

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
FTA-SV-103-0204
SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D1922

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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28.					
29.					
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00083

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SV-103-0809

SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D1923

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	700	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	700	U
83-32-9	Acenaphthene	350	U

000004

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-103-0809

SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D1923

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	700	U
100-02-7	4-Nitrophenol	700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	700	U
534-52-1	4,6-Dinitro-2-methylphenol	700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	700	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.
FTA-SV-103-0809
SV1030809

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D1923

Level: (low/med) LOW Date Received: 02/04/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	112-41-4	1-DODECENE	13.79	260	NJ
2.		UNKNOWN	22.38	1000	J
3.					
4.					
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000086

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9287F

% Moisture: 19 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	41	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

000089

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS101RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-02RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9316F

% Moisture: 19 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	41	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

000090

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-05A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9296F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

060091

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-08A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9281F

% Moisture: 6 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000092

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SU-101-0204

SV1010204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9288F

% Moisture: 13 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000090

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FIA-SV-101-0708
SV1010708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9295F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000094

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SV-102-0204
SV1020204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9297F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/12/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/15/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000095

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SU-102-0204
SV1020204RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-06RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9317F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000096

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SU-102-0708
SV1020708

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9298F

% Moisture: 4 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

000097

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SV-102-0708
SV1020708RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-07RE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9318F

% Moisture: 4 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/19/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

000093

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SV-103-0204
SV1030204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9300F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000099

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SV-103-0204
SV1030204RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-09RE

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9319F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000100

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
FTA-SU-103-0809
SV1030809

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: B0187-10A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9301F

% Moisture: 5 decanted: (Y/N) N Date Received: 02/04/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/12/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/15/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000101

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #:
NAME: Garth Glean	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza 7 PCB		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl VOC	VOC + MTBE 5 gram Encore Sampler VOC	VOC + MTBE 40B Amber Glass SVOC, TCL	SVOC + 1,4-D 40B Amber Glass Metals	Metals + pH 40B Amber Glass Metals	Metals TAL 40B Amber Glass TOC	TOC 40B Amber Glass Moisture	Moisture Grain Size	COMMENTS
TB-020303	2/3/03 0400		X	X				2	2								
FTA-SS-101	2/3/03 1150		X		X					3	1	1		1	1		
FTA-SU-101-0204	2/3/03 1201		X		X					3	1		1				
FTA-SU-101-0708	2/3/03 1215		X		X					3	1		1				
FTA-SS-102	2/3/03 1245		X		X					3	1	1		1	1		
FTA-SU-102-0204	2/3/03 1255		X		X					3	1		1				
FTA-SU-102-0708	2/3/03 1313		X		X					3	1		1				
FTA-SS-103	2/3/03 1326		X		X					3	1	1		1	1		
FTA-SU-103-0204	2/3/03 1337		X		X					3	1		1				
FTA-SU-103-0809	2/3/03 1447		X		X					3	1		1				
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Garth Glean	2/3/03 1700		/	Shipped Via Federal Express Airbill No 8286 8470 7512	
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and nine soil samples that were collected on February 3, 2003, and received at Mitkem on February 4, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

000001

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 and bromofluorobenzene in sample SV1010708. The sample was re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: sample SV1010708 initially analyzed at low level, but due to high concentration of target analytes, was re-analyzed at dilution by medium level. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of 2-methylnaphthalene, sample FTASS101 was re-analyzed at 2x dilution. Sample SV1010708 was re-analyzed at 10x. Sample SV1010708 was re-analyzed at dilution even though no target analytes were determined above the instrument calibration range due to matrix interferences. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of low recovery of tetrachloro-m-xylene in both columns for samples FTASS101, SV1020204, SV1020708 and SV1030204. The samples were re-extracted with all surrogate recoveries within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: samples FTASS101, SV1020204, SV1020708 and SV1030204 were re-extracted outside of holding time. The initial analysis was within hold time, but had non-compliant surrogate recoveries. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix: (soil/water) SOIL Lab Sample ID: V5B0207A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3683

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Instrument ID: V6 Calibration Date(s): 01/07/03 01/07/03

Heated Purge: (Y/N) N Calibration Time(s): 1359 1623

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C4312 RRF20 =V6C4316
RRF50 =V6C4311 RRF100=V6C4315 RRF200=V6C4314

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.193	0.244	0.211	0.244	0.233	0.225	10.0
Chloromethane	*	0.374	0.377	0.395	0.377	0.378	0.380	2.2*
Vinyl Chloride		0.377	0.389	0.352	0.377	0.361	0.371	3.9
Bromomethane		0.288	0.278	0.264	0.255	0.246	0.266	6.4
Chloroethane		0.221	0.223	0.220	0.220	0.220	0.221	0.7
Trichlorofluoromethane		0.386	0.382	0.336	0.380	0.380	0.373	5.5
1,1-Dichloroethene		0.297	0.285	0.266	0.291	0.287	0.285	4.1
Acetone		0.077	0.042	0.046	0.035	0.031	0.046	39.0
Carbon Disulfide		0.784	0.786	0.710	0.767	0.754	0.760	4.1
Methylene Chloride		0.276	0.255	0.280	0.260	0.257	0.266	4.3
trans-1,2-Dichloroethene		0.274	0.269	0.275	0.284	0.287	0.278	2.8
Methyl tert-butyl ether		0.463	0.498	0.574	0.513	0.500	0.510	7.9
1,1-Dichloroethane	*	0.462	0.457	0.486	0.473	0.476	0.471	2.4*
2-Butanone		0.058	0.054	0.062	0.053	0.055	0.056	7.0
cis-1,2-Dichloroethene		0.281	0.272	0.300	0.297	0.299	0.290	4.5
Chloroform		0.460	0.438	0.473	0.445	0.440	0.451	3.3
1,1,1-Trichloroethane		0.359	0.350	0.324	0.353	0.356	0.348	4.0
Carbon Tetrachloride		0.316	0.302	0.288	0.318	0.328	0.310	4.9
1,2-Dichloroethane		0.297	0.273	0.312	0.277	0.276	0.287	5.9
Benzene		1.139	1.115	1.152	1.121	1.095	1.124	2.0
Trichloroethene		0.261	0.268	0.264	0.282	0.289	0.273	4.5
1,2-Dichloropropane		0.275	0.268	0.296	0.277	0.283	0.280	3.8
Bromodichloromethane		0.323	0.304	0.348	0.324	0.329	0.326	4.8
cis-1,3-Dichloropropene		0.348	0.378	0.439	0.420	0.422	0.401	9.3
4-Methyl-2-pentanone		0.086	0.104	0.120	0.111	0.117	0.108	12.5
Toluene		1.113	1.180	1.223	1.170	1.116	1.160	4.0
trans-1,3-Dichloropropene		0.286	0.299	0.362	0.332	0.340	0.324	9.5
1,1,2-Trichloroethane		0.185	0.174	0.201	0.184	0.185	0.186	5.2
Tetrachloroethene		0.272	0.280	0.250	0.287	0.286	0.275	5.5
2-Hexanone		0.077	0.088	0.096	0.093	0.097	0.090	8.9
Dibromochloromethane		0.259	0.269	0.286	0.274	0.274	0.272	3.6
1,2-Dibromoethane		0.219	0.223	0.245	0.232	0.226	0.229	4.4
Chlorobenzene	*	1.052	1.042	1.045	1.029	0.978	1.029	2.9*
Ethylbenzene		0.531	0.570	0.560	0.581	0.578	0.564	3.6
m,p-Xylene		0.640	0.702	0.686	0.718	0.697	0.689	4.3
o-Xylene		0.586	0.680	0.692	0.722	0.726	0.681	8.3
Xylene (Total)		0.622	0.695	0.688	0.719	0.707	0.686	5.5

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

000296

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Instrument ID: V6 Calibration Date: 02/05/03 Time: 0933

Lab File ID: V6C4661 Init. Calib. Date(s): 01/07/03 01/07/03

Heated Purge: (Y/N) N Init. Calib. Times: 1359 1623

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.225	0.222	0.01	1.3	20.0
Chloromethane	0.380	0.387	0.1	1.8	20.0
Vinyl Chloride	0.371	0.393	0.01	5.9	20.0
Bromomethane	0.266	0.260	0.01	2.2	20.0
Chloroethane	0.221	0.228	0.01	3.2	20.0
Trichlorofluoromethane	0.373	0.370	0.01	0.8	20.0
1,1-Dichloroethene	0.285	0.268	0.01	6.0	20.0
Acetone	0.046	0.044	0.01	4.3	20.0
Carbon Disulfide	0.760	0.749	0.01	1.4	20.0
Methylene Chloride	0.266	0.281	0.01	5.6	20.0
trans-1,2-Dichloroethene	0.278	0.279	0.01	0.4	20.0
Methyl tert-butyl ether	0.510	0.495	0.01	2.9	20.0
1,1-Dichloroethane	0.471	0.479	0.1	1.7	20.0
2-Butanone	0.056	0.058	0.01	3.6	20.0
cis-1,2-Dichloroethene	0.290	0.288	0.01	0.7	20.0
Chloroform	0.451	0.466	0.01	3.3	20.0
1,1,1-Trichloroethane	0.348	0.349	0.01	0.3	20.0
Carbon Tetrachloride	0.310	0.305	0.01	1.6	20.0
1,2-Dichloroethane	0.287	0.295	0.01	2.8	20.0
Benzene	1.124	1.167	0.01	3.8	20.0
Trichloroethene	0.273	0.271	0.01	0.7	20.0
1,2-Dichloropropane	0.280	0.286	0.01	2.1	20.0
Bromodichloromethane	0.326	0.335	0.01	2.8	20.0
cis-1,3-Dichloropropene	0.401	0.402	0.01	0.2	20.0
4-Methyl-2-pentanone	0.108	0.099	0.01	8.3	20.0
Toluene	1.160	1.238	0.01	6.7	20.0
trans-1,3-Dichloropropene	0.324	0.320	0.01	1.2	20.0
1,1,2-Trichloroethane	0.186	0.185	0.01	0.5	20.0
Tetrachloroethene	0.275	0.259	0.01	5.8	20.0
2-Hexanone	0.090	0.077	0.01	14.4	20.0
Dibromochloromethane	0.272	0.258	0.01	5.1	20.0
1,2-Dibromoethane	0.229	0.212	0.01	7.4	20.0
Chlorobenzene	1.029	1.029	0.3	0.0	20.0
Ethylbenzene	0.564	0.554	0.01	1.8	20.0
m,p-Xylene	0.689	0.699	0.01	1.4	20.0
o-Xylene	0.681	0.688	0.01	1.0	20.0
Xylene (Total)	0.686	0.695	0.01	1.3	20.0

000367

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5L	100	102	104	95	0
02	V5LLCS	95	98	100	97	0
03	V5LLCSD	98	102	101	100	0
04	FTASS101	102	113	110	85	0
05	SV1010204	108	117	130	69	0
06	SV1010708	116	130*	112	172*	2
07	FTASS102	99	109	105	94	0
08	SV1020204	100	115	100	104	0
09	SV1020708	100	114	98	101	0
10	FTASS103	103	114	105	93	0
11	SV1030204	100	113	96	97	0
12	SV1030809	101	115	98	97	0
13						
14						
15						
16						
17						
18						
19						
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21						
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23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

000116

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Lab File ID (Standard): V5E3681 Date Analyzed: 02/07/03

Instrument ID: V5 Time Analyzed: 1551

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	888545	6.25	677117	9.47	346671	12.22
	UPPER LIMIT	1777090	6.75	1354234	9.97	693342	12.72
	LOWER LIMIT	444273	5.75	338559	8.97	173336	11.72
	EPA SAMPLE NO.						
01	VBLK5L	932952	6.26	710399	9.47	303802	12.21
02	V5LLCS	891640	6.25	674333	9.47	344330	12.22
03	V5LLCSD	889207	6.25	686940	9.47	345493	12.22
04	FTASS101	1038136	6.25	714732	9.48	221737	12.21
05	SV1010204	888327	6.25	461748	9.47	88678*	12.22
06	SV1010708	970898	6.25	612582	9.47	227760	12.23
07	FTASS102	1023758	6.26	743822	9.47	309460	12.21
08	SV1020204	1087010	6.25	871344	9.47	455684	12.21
09	SV1020708	1127528	6.25	904688	9.47	464797	12.22
10	FTASS103	1035686	6.25	778845	9.47	321850	12.22
11	SV1030204	1181789	6.25	956112	9.47	469449	12.22
12	SV1030809	1188707	6.26	951932	9.47	467708	12.21
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Instrument ID: S2 Calibration Date: 02/19/03 Time: 1431

Lab File ID: S2D1907 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.728	1.841	0.050	6.5	20.0
bis(2-Chloroethyl)Ether	1.317	1.327	0.050	0.8	100
2-Chlorophenol	1.310	1.374	0.050	4.9	100
1,3-Dichlorobenzene	1.349	1.417	0.050	5.0	100
1,4-Dichlorobenzene	1.416	1.498	0.050	5.8	20.0
1,2-Dichlorobenzene	1.276	1.361	0.050	6.7	100
2-Methylphenol	1.172	1.264	0.050	7.8	100
2,2'-oxybis(1-Chloropropane)	1.869	1.775	0.050	-5.0	100
4-Methylphenol	1.228	1.319	0.050	7.4	100
N-Nitroso-di-n-propylamine	0.714	0.755	0.050	5.7	100
Hexachloroethane	0.517	0.538	0.050	4.1	100
Nitrobenzene	0.405	0.422	0.050	4.2	100
Isophorone	0.707	0.734	0.050	3.8	100
2-Nitrophenol	0.231	0.240	0.050	3.9	20.0
2,4-Dimethylphenol	0.348	0.365	0.050	4.9	100
2,4-Dichlorophenol	0.311	0.337	0.050	8.4	20.0
1,2,4-Trichlorobenzene	0.318	0.341	0.050	7.2	100
Naphthalene	1.021	1.096	0.050	7.3	100
4-Chloroaniline	0.404	0.413	0.050	2.2	100
bis(2-Chloroethoxy)methane	0.448	0.450	0.050	0.4	100
Hexachlorobutadiene	0.166	0.186	0.050	12.0	20.0
4-Chloro-3-Methylphenol	0.329	0.370	0.050	12.5	20.0
2-Methylnaphthalene	0.689	0.761	0.050	10.4	100
Hexachlorocyclopentadiene	0.234	0.093	0.050	-60.2	100
2,4,6-Trichlorophenol	0.380	0.396	0.050	4.2	100
2,4,5-Trichlorophenol	0.422	0.441	0.050	4.5	100
2-Chloronaphthalene	1.124	1.151	0.050	2.4	100
2-Nitroaniline	0.389	0.395	0.050	1.5	100
Dimethylphthalate	1.365	1.469	0.050	7.6	100
Acenaphthylene	1.832	1.872	0.050	2.2	100
2,6-Dinitrotoluene	0.354	0.376	0.050	6.2	100
3-Nitroaniline	0.371	0.374	0.050	0.8	100
Acenaphthene	1.119	1.170	0.050	4.6	20.0
2,4-Dinitrophenol	0.139	0.179	0.050	28.8	100
4-Nitrophenol	0.159	0.199	0.050	25.2	100
Dibenzofuran	1.604	1.730	0.050	7.8	100
2,4-Dinitrotoluene	0.438	0.503	0.050	14.8	100

All other compounds must meet a minimum RRF of 0.010.

000717

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Instrument ID: S2 Calibration Date: 02/25/03 Time: 1712

Lab File ID: S2D2071 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.321	1.496	0.050	13.2	100
4-Chlorophenyl-phenylether	0.588	0.667	0.050	13.4	100
Fluorene	1.212	1.362	0.050	12.4	100
4-Nitroaniline	0.365	0.215	0.050	-41.1	100
4,6-Dinitro-2-methylphenol	0.146	0.166	0.050	13.7	100
N-Nitrosodiphenylamine(1)	0.549	0.572	0.050	4.2	20.0
4-Bromophenyl-phenylether	0.224	0.261	0.050	16.5	100
Hexachlorobenzene	0.234	0.267	0.050	14.1	100
Pentachlorophenol	0.124	0.111	0.050	-10.5	20.0
Phenanthrene	1.046	1.139	0.050	8.9	100
Anthracene	1.046	1.136	0.050	8.6	100
Carbazole	0.921	0.513	0.050	-44.3	100
Di-n-butylphthalate	1.364	1.531	0.050	12.2	100
Fluoranthene	1.079	1.096	0.050	1.6	20.0
Pyrene	1.273	1.272	0.050	-0.1	100
Butylbenzylphthalate	0.652	0.671	0.050	2.9	100
3,3'-Dichlorobenzidine	0.426	0.310	0.050	-27.2	100
Benzo(a)anthracene	1.094	1.151	0.050	5.2	100
Chrysene	0.982	1.016	0.050	3.5	100
bis(2-Ethylhexyl)phthalate	0.899	0.926	0.050	3.0	100
Di-n-octylphthalate	2.313	2.667	0.050	15.3	20.0
Benzo(b)fluoranthene	1.596	1.768	0.050	10.8	100
Benzo(k)fluoranthene	1.401	1.617	0.050	15.4	100
Benzo(a)pyrene	1.398	1.606	0.050	14.9	20.0
Indeno(1,2,3-cd)pyrene	1.502	1.880	0.050	25.2	100
Dibenzo(a,h)anthracene	1.389	1.583	0.050	14.0	100
Benzo(g,h,i)perylene	1.373	1.511	0.050	10.0	100
Nitrobenzene-d5	0.418	0.432	0.050	3.3	100
2-Fluorobiphenyl	1.317	1.484	0.050	12.7	100
Terphenyl-d14	0.864	0.932	0.050	7.9	100
Phenol-d5	1.578	1.465	0.050	-7.2	100
2-Fluorophenol	1.225	1.099	0.050	-10.3	100
2,4,6-Tribromophenol	0.113	0.117	0.050	3.5	100
2-Chlorophenol-d4	1.284	1.308	0.050	1.9	100
1,2-Dichlorobenzene-d4	0.826	0.896	0.050	8.5	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

000720

TETRA TECH NUS

PHIL- 17035

TO: G. GLENN **DATE:** APRIL 11, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0187

SAMPLES: 9/Solid/

FTA-SS-101	FTA-SS-102	FTA-SS-103
FTA-SU-101-0204	FTA-SU-102-0204	FTA-SU-103-0204
FTA-SU-101-0708	FTA-SU-102-0708	FTA-SU-103-0809

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0187 consists of 9 solid environmental samples (designated FTA-). All samples were analyzed for TAL metals. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on February 3, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B and 7471A.

SUMMARY

All analytes, with the exception of thallium and cadmium, were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control blank results, field duplicate results, compound identification, compound quantitation, and detection limits.

MAJOR PROBLEMS

- Antimony, arsenic, cadmium, copper, nickel, and thallium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. Positive results for cadmium and thallium at concentrations less than or approximately equal to the predicted interference value relative to the sample iron concentration (based on comparing the ratio of analyte concentration to iron concentration in samples versus ICS solution A) are considered false positives and were qualified rejected, (R). For antimony, cadmium, thallium, and nickel, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K), except where superceded by the qualifier for blank contamination (B).

that depends on the sample mineral concentrations. For silver, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL). For positive silver and zinc results, when the sample concentration was greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased low (L).

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the soil laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Antimony	4.6 ug/L	1.15 mg/kg
Copper	7.7 ug/L	1.925 mg/kg
Manganese	0.091 mg/kg	0.455 mg/kg
Potassium	653.3 ug/L	163.3 mg/kg
Sodium	795.8 ug/L	198.9 mg/kg

Samples affected: The soil action levels apply to all soil environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for antimony, copper, potassium and sodium in soil samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for manganese because all soil concentrations exceeded the associated blank action levels.

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

The data validator has corrected the proper field sample I.D.s which are shown on the data summary and handwritten atop the sample result sheets (Form I's). This action was necessary because the laboratory software used to generate the data report does not allow sufficient field width to list the entire field sample I.D.s from the chain of custody forms. The laboratory reported abbreviated I.D.s omitting the prefix "FTA-" and dashes.

EXECUTIVE SUMMARY

Laboratory Performance: Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as rejected (R), biased high (K), or biased low (L). Several contaminants were detected in the laboratory blanks. Associated soil sample results were qualified (B) to indicate artifacts of blank contamination. ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed. The laboratory truncated sample I.D.s due to limitations in the reporting software and in one case inconsistently translated the field sample I.D.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

DATA SUMMARY OF INORGANIC RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SU-101-0204			FTA-SU-101-0708			FTA-SS-102			FTA-SU-102-0204		
Laboratory ID:	B0187-02A			B0187-03A			B0187-04A			B0187-05A			B0187-06A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	6080			5240			2980			3070			5550		
Antimony	0.56	B	A	0.41	B	A	0.26	B	A	0.22	B	A	0.32	B	A
Arsenic	4.6			1.7			0.91			0.96			1.2		
Barium	43.2			16.8			16.4			6.8			17.3		
Beryllium	0.36			0.24			0.22			0.14			0.25		
Cadmium	0.26	K	K	0.46	K	K	0.037	U		0.08	K	K	0.059	R	K
Calcium	478			375			92.8			73.2			181		
Chromium	8.5			5.9			4.1			3.3			4.3		
Cobalt	1.8			1.1			0.25			0.62			1		
Copper	5			6.1			1.3	B	A	1.7	B	A	2		
Iron	5310			3270			1010			1690			3080		
Lead	18.4			91.7			4.8			6.1			3.1		
Magnesium	600			431			191			186			317		
Manganese	118			15.7			6.1			23.1			50.2		
Mercury	0.049			0.018	U		0.018	U		0.016	U		0.017	U	
Nickel	3.9			3.1			0.76			1.7			2.1		
Potassium	400			259			192			119	B	A	197		
Selenium	0.53	U		0.42	U		0.47	U		0.47	U		0.45	U	
Silver	0.19	L	K	0.12	L	K	0.11	UL	K	0.1	UL	K	0.11	L	K
Sodium	25	B	A	21.7	B	A	14.7	B	A	10.3	B	A	15	B	A
Thallium	0.18	U		0.16	R	K	0.21	K	K	0.16	U		0.19	K	K
Vanadium	11.2			8.5			4.6			4.7			6.1		
Zinc	23.3			87.9			2.2			4.8			4.2		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-102-0708			FTA-SS-103			FTA-SU-103-0204			FTA-SU-103-0809		
Laboratory ID:	B0187-07A			B0187-08A			B0187-09A			B0187-10A		
Sample Date:	02/03/03			02/03/03			02/03/03			02/03/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	2650			3600			7510			1990		
Antimony	0.21	B	A	0.25	B	A	0.34	B	A	0.16	B	A
Arsenic	0.7			1.6			1.6			1.4		
Barium	9.5			12.2			20.5			4.7		
Beryllium	0.14			0.16			0.32			0.11		
Cadmium	0.033	U		0.061	R	K	0.095	R	K	0.032	U	
Calcium	42.1			97.8			195			35.5		
Chromium	4.8			3.6			5.5			2.3		
Cobalt	0.26			0.82			0.96			0.065		
Copper	1.2	B	A	1.7	B	A	2.8			0.65	B	A
Iron	1400			2340			4070			1180		
Lead	1			3			3.4			0.74		
Magnesium	136			223			417			77.6		
Manganese	16.2			37.4			36.3			2.8		
Mercury	0.016	U		0.017	U		0.017	U		0.015	U	
Nickel	1.1			1.9			3			0.38	K	K
Potassium	119	B	A	149	B	A	251			80.6	B	A
Selenium	0.42	U		0.46	U		0.49	U		0.41	U	
Silver	0.093	UL	K	0.1	UL	K	0.15	L	K	0.091	UL	K
Sodium	15.2	B	A	7.8	B	A	13.2	B	A	5.4	B	A
Thallium	0.14	U		0.15	U		0.29	K	K	0.14	U	
Vanadium	3.1			5.7			8.1			2.2		
Zinc	5.6			5.3			5.4			0.54	L	K

DATA SUMMARY OF INORGANIC RESULTS
SDG B0187 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:

B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0187\M_B0187.DBF data retrieved on: 04/11/03

APPENDIX B

Results as Reported by the Laboratory

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS101

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-02A

Level (low/med): MED Date Received: 02/04/03

% Solids: 81.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6080			P
7440-36-0	Antimony	0.56	B		P
7440-38-2	Arsenic	4.6			P
7440-39-3	Barium	43.2			P
7440-41-7	Beryllium	0.36			P
7440-43-9	Cadmium	0.26	B		P
7440-70-2	Calcium	478	B		P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	5.0	B		P
7439-89-6	Iron	5310			P
7439-92-1	Lead	18.4			P
7439-95-4	Magnesium	600	B		P
7439-96-5	Manganese	118			P
7439-97-6	Mercury	0.049	B		CV
7440-02-0	Nickel	3.9	B		P
7440-09-7	Potassium	400	B		P
7782-49-2	Selenium	0.53	U		P
7440-22-4	Silver	0.19	B		P
7440-23-5	Sodium	25.0	B		P
7440-28-0	Thallium	0.18	U		P
7440-62-2	Vanadium	11.2	B		P
7440-66-6	Zinc	23.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000185

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1010204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-03A

Level (low/med): MED Date Received: 02/04/03

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5240			P
7440-36-0	Antimony	0.41	B		P
7440-38-2	Arsenic	1.7			P
7440-39-3	Barium	16.8			P
7440-41-7	Beryllium	0.24			P
7440-43-9	Cadmium	0.46			P
7440-70-2	Calcium	375	B		P
7440-47-3	Chromium	5.9			P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	6.1			P
7439-89-6	Iron	3270			P
7439-92-1	Lead	91.7			P
7439-95-4	Magnesium	431	B		P
7439-96-5	Manganese	15.7			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	3.1	B		P
7440-09-7	Potassium	259	B		P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.12	B		P
7440-23-5	Sodium	21.7	B		P
7440-28-0	Thallium	0.16	B		P
7440-62-2	Vanadium	8.5	B		P
7440-66-6	Zinc	87.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000108

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1010708

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-04A

Level (low/med): MED Date Received: 02/04/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2980			P
7440-36-0	Antimony	0.26	B		P
7440-38-2	Arsenic	0.91			P
7440-39-3	Barium	16.4			P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	92.8	B		P
7440-47-3	Chromium	4.1			P
7440-48-4	Cobalt	0.25	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	1010			P
7439-92-1	Lead	4.8			P
7439-95-4	Magnesium	191	B		P
7439-96-5	Manganese	6.1			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.76	B		P
7440-09-7	Potassium	192	B		P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	14.7	B		P
7440-28-0	Thallium	0.21	B		P
7440-62-2	Vanadium	4.6	B		P
7440-66-6	Zinc	2.2	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000109

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS102

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-05A

Level (low/med): MED Date Received: 02/04/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3070			P
7440-36-0	Antimony	0.22	B		P
7440-38-2	Arsenic	0.96			P
7440-39-3	Barium	6.8	B		P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.080	B		P
7440-70-2	Calcium	73.2	B		P
7440-47-3	Chromium	3.3			P
7440-48-4	Cobalt	0.62	B		P
7440-50-8	Copper	1.7	B		P
7439-89-6	Iron	1690			P
7439-92-1	Lead	6.1			P
7439-95-4	Magnesium	186	B		P
7439-96-5	Manganese	23.1			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	119	B		P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	10.3	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	4.8	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000106

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1020204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-06A

Level (low/med): MED Date Received: 02/04/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5550			P
7440-36-0	Antimony	0.32	B		P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	17.3			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.059	B		P
7440-70-2	Calcium	181	B		P
7440-47-3	Chromium	4.3			P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	2.0	B		P
7439-89-6	Iron	3080			P
7439-92-1	Lead	3.1			P
7439-95-4	Magnesium	317	B		P
7439-96-5	Manganese	50.2			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	2.1	B		P
7440-09-7	Potassium	197	B		P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.11	B		P
7440-23-5	Sodium	15.0	B		P
7440-28-0	Thallium	0.19	B		P
7440-62-2	Vanadium	6.1	B		P
7440-66-6	Zinc	4.2	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

003110

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1020708

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-07A

Level (low/med): MED Date Received: 02/04/03

% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2650			P
7440-36-0	Antimony	0.21	B		P
7440-38-2	Arsenic	0.70	B		P
7440-39-3	Barium	9.5			P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	42.1	B		P
7440-47-3	Chromium	4.8			P
7440-48-4	Cobalt	0.26	B		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	1400			P
7439-92-1	Lead	1.0	B		P
7439-95-4	Magnesium	136	B		P
7439-96-5	Manganese	16.2			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	119	B		P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.093	U		P
7440-23-5	Sodium	15.2	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	3.1	B		P
7440-66-6	Zinc	5.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000112

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS103

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-08A

Level (low/med): MED Date Received: 02/04/03

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3600			P
7440-36-0	Antimony	0.25	B		P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	12.2			P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.061	B		P
7440-70-2	Calcium	97.8	B		P
7440-47-3	Chromium	3.6			P
7440-48-4	Cobalt	0.82	B		P
7440-50-8	Copper	1.7	B		P
7439-89-6	Iron	2340			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	223	B		P
7439-96-5	Manganese	37.4			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	149	B		P
7782-49-2	Selenium	0.46	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	7.8	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	5.7	B		P
7440-66-6	Zinc	5.3	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000107

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1030204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-09A

Level (low/med): MED Date Received: 02/04/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7510			P
7440-36-0	Antimony	0.34	B		P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	20.5			P
7440-41-7	Beryllium	0.32			P
7440-43-9	Cadmium	0.095	B		P
7440-70-2	Calcium	195	B		P
7440-47-3	Chromium	5.5			P
7440-48-4	Cobalt	0.96	B		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	4070			P
7439-92-1	Lead	3.4			P
7439-95-4	Magnesium	417	B		P
7439-96-5	Manganese	36.3			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	251	B		P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.15	B		P
7440-23-5	Sodium	13.2	B		P
7440-28-0	Thallium	0.29	B		P
7440-62-2	Vanadium	8.1	B		P
7440-66-6	Zinc	5.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

VV0112

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1030809

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Matrix (soil/water): SOIL Lab Sample ID: B0187-10A

Level (low/med): MED Date Received: 02/04/03

% Solids: 95.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1990			P
7440-36-0	Antimony	0.16	B		P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	4.7	B		P
7440-41-7	Beryllium	0.11	B		P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	35.5	B		P
7440-47-3	Chromium	2.3			P
7440-48-4	Cobalt	0.065	B		P
7440-50-8	Copper	0.65	B		P
7439-89-6	Iron	1180			P
7439-92-1	Lead	0.74	B		P
7439-95-4	Magnesium	77.6	B		P
7439-96-5	Manganese	2.8			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	0.38	B		P
7440-09-7	Potassium	80.6	B		P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.091	U		P
7440-23-5	Sodium	5.4	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	0.54	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000113

APPENDIX C

Support Documentation

MITKEM CORPORATION
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO				SEND INVOICE TO			
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688			COMPANY: Tetra Tech NUS	PHONE:		LAB PROJECT #:
NAME: Garth Glenn	FAX: 610 491 9645			NAME:	FAX:		
ADDRESS: 600 Clark Avenue Suite 3				ADDRESS: Foster Plaza 7 PCB			TURNAROUND TIME:
CITY/ST/ZIP: King Of Prussia PA 19406				CITY/ST/ZIP: Pittsburgh PA			
CLIENT PROJECT NAME: NASA WFF	CLIENT PROJECT #: CTO 848	CLIENT P.O.#:					

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl VOC; VOC + MTBE 5 point + acetone; VOC + MTBE 40ml Amber glass SVOC; SVOC + MTBE 40ml Amber glass; Metals + pH 40ml Amber glass; Metals 8 hr TAT; Virtuals TAT 40ml Amber glass; TAT 40ml Amber glass Moisture; 500 Amber glass Grain Size	COMMENTS
TB-020303	2/3/03 0400		X	X				2	2	
FTA-SS-101	2/3/03 1150		X		X				3 1 1 1 1	
FTA-SU-101-0204	2/3/03 1201		X		X				3 1 1	
FTA-SU-101-0708	2/3/03 1215		X		X				3 1 1	
FTA-SS-102	2/3/03 1245		X		X				3 1 1 1 1	
FTA-SU-102-0204	2/3/03 1255		X		X				3 1 1	
FTA-SU-102-0708	2/3/03 1313		X		X				3 1 1	
FTA-SS-103	2/3/03 1326		X		X				3 1 1 1 1	
FTA-SU-103-0204	2/3/03 1337		X		X				3 1 1	
FTA-SU-103-0809	2/3/03 1447		X		X				3 1 1	
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Thanda Mayo	2/3/03 1700		/	Shipped Via Federal Express Airbill No 8286 8470 7512	
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and nine soil samples that were collected on February 3, 2003, and received at Mitkem on February 4, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 and bromofluorobenzene in sample SV1010708. The sample was re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: sample SV1010708 initially analyzed at low level, but due to high concentration of target analytes, was re-analyzed at dilution by medium level. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of 2-methylnaphthalene, sample FTASS101 was re-analyzed at 2x dilution. Sample SV1010708 was re-analyzed at 10x. Sample SV1010708 was re-analyzed at dilution even though no target analytes were determined above the instrument calibration range due to matrix interferences. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of low recovery of tetrachloro-m-xylene in both columns for samples FTASS101, SV1020204, SV1020708 and SV1030204. The samples were re-extracted with all surrogate recoveries within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: samples FTASS101, SV1020204, SV1020708 and SV1030204 were re-extracted outside of holding time. The initial analysis was within hold time, but had non-compliant surrogate recoveries. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0187___

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony 23	4.6	B	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.045	U	P
Copper 38.5	7.7	B	4.0	U	4.0	U	4.8	B	0.221	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.300	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.0	U	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.091 2.455	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.040	U	P
Potassium 3266.5	653.3	B	528.3	B	402.4	B	458.3	B	28.415	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium 627.6	627.6	B	3749 795.8	B	147.5	B	180.9	B	26.400	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

000153

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0187

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum	500000	500000	485552	482581.6	96.5	488016	490022.7	98.0	
Antimony		600	6.1	560.3	93.4		563.0	93.8	3
Arsenic		100	4.8	111.8	111.8	7	114.4	114.4	3
Barium		500		494.4	98.9		482.6	96.5	4
Beryllium		500		458.8	91.8		463.9	92.8	0.5
Cadmium		1000	6	874.0	87.4	4.3	877.0	87.7	0.7
Calcium	500000	500000	500776	510947.2	102.2	517175	514731.2	102.9	
Chromium		500		451.3	90.3		451.7	90.3	0.6
Cobalt		500		428.1	85.6		429.3	85.9	0.9
Copper		500	10.5	513.8	102.8		500.0	100.0	4
Iron	200000	200000	172454	171745.0	85.9	173112	173927.7	87.0	
Lead		500		441.8	88.4		433.3	86.7	4
Magnesium	500000	500000	472039	469225.5	93.8	476194	477228.6	95.4	
Manganese		500	-15.5	449.5	89.9	-16.2	455.6	91.1	0.3
Mercury									
Nickel		1000	11.4	864.8	86.5	11.8	883.9	88.4	0.8
Potassium									
Selenium		500		473.4	94.7		491.3	98.3	9
Silver		200		210.5	105.2	-2.4	211.1	105.6	2
Sodium									
Thallium		100		99.6	99.6	9.9	96.7	96.7	3
Vanadium		500	-3.7	463.8	92.8	-3.8	461.5	92.3	0.7
Zinc		1000	-10.5	847.4	84.7	-11.8	845.4	84.5	7

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION

TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SS-101	2003.4		IRON	200000	-16.2	90383	-7.32	na	na
Silver	2	FTA-SS-101	3.2		IRON	200000	-2.4	90383	-1.08	L	na
Vanadium	0.7	FTA-SS-101	190.1		IRON	200000	-3.8	90383	-1.72	na	na
Zinc	7	FTA-SS-101	396.7		IRON	200000	-11.8	90383	-5.33	na	na
Antimony	3	FTA-SS-101	9.5		IRON	200000	6.7	90383	3.03	K	na
Arsenic	3	FTA-SS-101	78.2		IRON	200000	7	90383	3.16	na	na
Cadmium	0.7	FTA-SS-101	4.4		IRON	200000	6.3	90383	2.85	K	na
Copper	4	FTA-SS-101	84.3		IRON	200000	10.5	90383	4.75	na	na
Nickel	0.8	FTA-SS-101	66.9		IRON	200000	11.8	90383	5.33	na	na
Thallium	3	FTA-SS-101		U	IRON	200000	9.9	90383	4.47	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-101-0204	333.9		IRON	200000	-16.2	69435	-5.62	na	na
Silver	2	FTA-SU-101-0204	2.5		IRON	200000	-2.4	69435	-0.83	L	na
Vanadium	0.7	FTA-SU-101-0204	181.2		IRON	200000	-3.8	69435	-1.32	na	na
Zinc	7	FTA-SU-101-0204	1866.1		IRON	200000	-11.8	69435	-4.10	na	na
Antimony	3	FTA-SU-101-0204	8.8		IRON	200000	6.7	69435	2.33	K	na
Arsenic	3	FTA-SU-101-0204	35.6		IRON	200000	7	69435	2.43	na	na
Cadmium	0.7	FTA-SU-101-0204	9.8		IRON	200000	6.3	69435	2.19	K	na
Copper	4	FTA-SU-101-0204	129.2		IRON	200000	10.5	69435	3.65	na	na
Nickel	0.8	FTA-SU-101-0204	65.3		IRON	200000	11.8	69435	4.10	na	na
Thallium	3	FTA-SU-101-0204	3.3		IRON	200000	9.9	69435	3.44	R	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-101-0708	116.6		ALUM	500000	-16.2	56747	-1.84	na	na
Silver	2	FTA-SU-101-0708		U	ALUM	500000	-2.4	56747	-0.27	na	UL
Vanadium	0.7	FTA-SU-101-0708	87.2		ALUM	500000	-3.8	56747	-0.43	na	na
Zinc	7	FTA-SU-101-0708	41.8		ALUM	500000	-11.8	56747	-1.34	na	na
Antimony	3	FTA-SU-101-0708	4.9		ALUM	500000	6.7	56747	0.76	K	na
Arsenic	3	FTA-SU-101-0708	17.3		ALUM	500000	7	56747	0.79	na	na
Cadmium	0.7	FTA-SU-101-0708		U	ALUM	500000	6.3	56747	0.72	na	na
Copper	4	FTA-SU-101-0708	25.1		ALUM	500000	10.5	56747	1.19	na	na
Nickel	0.8	FTA-SU-101-0708	14.4		ALUM	500000	11.8	56747	1.34	na	na
Thallium	3	FTA-SU-101-0708	4.1		ALUM	500000	9.9	56747	1.12	K	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SS-102	446.1		IRON	200000	-16.2	32763	-2.65	na	na
Silver	2	FTA-SS-102		U	IRON	200000	-2.4	32763	-0.39	na	UL
Vanadium	0.7	FTA-SS-102	90.2		IRON	200000	-3.8	32763	-0.62	na	na
Zinc	7	FTA-SS-102	93.6		IRON	200000	-11.8	32763	-1.93	na	na
Antimony	3	FTA-SS-102	4.3		IRON	200000	6.7	32763	1.10	K	na
Arsenic	3	FTA-SS-102	18.6		IRON	200000	7	32763	1.15	na	na
Cadmium	0.7	FTA-SS-102	1.5		IRON	200000	6.3	32763	1.03	K	na
Copper	4	FTA-SS-102	32		IRON	200000	10.5	32763	1.72	na	na
Nickel	0.8	FTA-SS-102	33.5		IRON	200000	11.8	32763	1.93	na	na
Thallium	3	FTA-SS-102		U	IRON	200000	9.9	32763	1.62	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-102-0204	993.6		IRON	200000	-16.2	61060	-4.95	na	na
Silver	2	FTA-SU-102-0204	2.2		IRON	200000	-2.4	61060	-0.73	L	na
Vanadium	0.7	FTA-SU-102-0204	121.6		IRON	200000	-3.8	61060	-1.16	na	na
Zinc	7	FTA-SU-102-0204	82.5		IRON	200000	-11.8	61060	-3.60	na	na
Antimony	3	FTA-SU-102-0204	6.3		IRON	200000	6.7	61060	2.05	K	na
Arsenic	3	FTA-SU-102-0204	24.5		IRON	200000	7	61060	2.14	na	na
Cadmium	0.7	FTA-SU-102-0204	1.2		IRON	200000	6.3	61060	1.92	R	na
Copper	4	FTA-SU-102-0204	40.4		IRON	200000	10.5	61060	3.21	na	na
Nickel	0.8	FTA-SU-102-0204	41.4		IRON	200000	11.8	61060	3.60	na	na
Thallium	3	FTA-SU-102-0204	3.7		IRON	200000	9.9	61060	3.02	K	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-102-0708	349		IRON	200000	-16.2	30197	-2.45	na	na
Silver	2	FTA-SU-102-0708		U	IRON	200000	-2.4	30197	-0.36	na	UL
Vanadium	0.7	FTA-SU-102-0708	66		IRON	200000	-3.8	30197	-0.57	na	na
Zinc	7	FTA-SU-102-0708	120.1		IRON	200000	-11.8	30197	-1.78	na	na
Antimony	3	FTA-SU-102-0708	4.6		IRON	200000	6.7	30197	1.01	K	na
Arsenic	3	FTA-SU-102-0708	15		IRON	200000	7	30197	1.06	na	na
Cadmium	0.7	FTA-SU-102-0708		U	IRON	200000	6.3	30197	0.95	na	na
Copper	4	FTA-SU-102-0708	26.4		IRON	200000	10.5	30197	1.59	na	na
Nickel	0.8	FTA-SU-102-0708	23.9		IRON	200000	11.8	30197	1.78	na	na
Thallium	3	FTA-SU-102-0708		U	IRON	200000	9.9	30197	1.49	na	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION

TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SS-103	731.6		IRON	200000	-16.2	45757	-3.71	na	na
Silver	2	FTA-SS-103		U	IRON	200000	-2.4	45757	-0.55	na	UL
Vanadium	0.7	FTA-SS-103	111.7		IRON	200000	-3.8	45757	-0.87	na	na
Zinc	7	FTA-SS-103	102.7		IRON	200000	-11.8	45757	-2.70	na	na
Antimony	3	FTA-SS-103	4.9		IRON	200000	6.7	45757	1.53	K	na
Arsenic	3	FTA-SS-103	30.9		IRON	200000	7	45757	1.60	na	na
Cadmium	0.7	FTA-SS-103	1.2		IRON	200000	6.3	45757	1.44	R	na
Copper	4	FTA-SS-103	33.7		IRON	200000	10.5	45757	2.40	na	na
Nickel	0.8	FTA-SS-103	36.8		IRON	200000	11.8	45757	2.70	na	na
Thallium	3	FTA-SS-103		U	IRON	200000	9.9	45757	2.26	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-103-0204	667		IRON	200000	-16.2	74649	-6.05	na	na
Silver	2	FTA-SU-103-0204	2.8		IRON	200000	-2.4	74649	-0.90	L	na
Vanadium	0.7	FTA-SU-103-0204	149.3		IRON	200000	-3.8	74649	-1.42	na	na
Zinc	7	FTA-SU-103-0204	98.8		IRON	200000	-11.8	74649	-4.40	na	na
Antimony	3	FTA-SU-103-0204	6.2		IRON	200000	6.7	74649	2.50	K	na
Arsenic	3	FTA-SU-103-0204	28.6		IRON	200000	7	74649	2.61	na	na
Cadmium	0.7	FTA-SU-103-0204	1.7		IRON	200000	6.3	74649	2.35	R	na
Copper	4	FTA-SU-103-0204	51		IRON	200000	10.5	74649	3.92	na	na
Nickel	0.8	FTA-SU-103-0204	54.9		IRON	200000	11.8	74649	4.40	na	na
Thallium	3	FTA-SU-103-0204	5.4		IRON	200000	9.9	74649	3.70	K	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Manganese	0.8	FTA-SU-103-0809	61		IRON	200000	-16.2	26057	-2.11	na	na
Silver	2	FTA-SU-103-0809		U	IRON	200000	-2.4	26057	-0.31	na	UL
Vanadium	0.7	FTA-SU-103-0809	48.7		IRON	200000	-3.8	26057	-0.50	na	na
Zinc	7	FTA-SU-103-0809	11.9		IRON	200000	-11.8	26057	-1.54	L	na
Antimony	3	FTA-SU-103-0809	3.6		IRON	200000	6.7	26057	0.87	K	na
Arsenic	3	FTA-SU-103-0809	31.6		IRON	200000	7	26057	0.91	na	na
Cadmium	0.7	FTA-SU-103-0809		U	IRON	200000	6.3	26057	0.82	na	na
Copper	4	FTA-SU-103-0809	14.4		IRON	200000	10.5	26057	1.37	na	na
Nickel	0.8	FTA-SU-103-0809	8.5		IRON	200000	11.8	26057	1.54	K	na
Thallium	3	FTA-SU-103-0809		U	IRON	200000	9.9	26057	1.29	na	na

TETRA TECH NUS

PHIL- 17047

TO:	**G. GLENN**	**DATE:**	**APRIL 14, 2003**
FROM:	**MEGAN RITCHIE**	**COPIES:**	**FILE**

SUBJECT: **WET CHEMISTRY DATA REVIEW – PH and GRAIN SIZE**
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0187

SAMPLES: **3/Solid/**

FTA-SS-101
FTA-SS-102
FTA-SS-103

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0187 consists of three soil environmental samples (designated FTA-SS-). All soil samples were analyzed for pH and Grain Size. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on February 3, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 9045C for pH and ASTM Method D422 for Grain Size.

SUMMARY

All parameters were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, laboratory duplicate precision, field duplicate precision, logbook documentation, and calculations.

NOTES

The Relative Percent Difference (RPD) for the laboratory duplicate results for pH were within the quality control limit of 20%.

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Results as Reported by the Laboratory
2. Appendix B - Support Documentation

APPENDIX A

Results as Reported by the Laboratory

Mitkem Corporation

Date: *25-Feb-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: FTASS101
Lab ID: B0187-02

Project: Wallops Island
Collection Date: 02/03/03 11:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.9		1.0	pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: FTASS102
Lab ID: B0187-05

Project: Wallops Island
Collection Date: 02/03/03 12:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.9		1.0	pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: FTASS103
Lab ID: B0187-08

Project: Wallops Island
Collection Date: 02/03/03 13:26

Analyses	Result	Qual	RL	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.9		1.0	pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1509
Date Received: 2/04/03

Approved by: _____
R.I. Analytical

FTA-SS-101

Sample #: 001 B0187-02B GRAB 02/03/03 @1150

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	0.42	99.58
No. 20	2.98	96.60
No. 40	20.58	76.02
No. 60	22.27	53.75
No. 140	39.48	14.27
No. 200	4.28	9.99

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1509
Date Received: 2/04/03

Approved by: _____
R.I. Analytical

FTA-SS-102

Sample #: 002 B0187-05B GRAB 02/03/03 @1245

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.03	99.97
No. 10	0.31	99.66
No. 20	2.07	97.59
No. 40	8.77	88.82
No. 60	15.69	73.13
No. 140	63.97	9.16
No. 200	5.54	3.62

001110

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1509
Date Received: 2/04/03

Approved by: _____
R.I. Analytical

FTA-SS-103

Sample #: 003 B0187-08B GRAB 02/02/03 @1326

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.62	99.38
No. 10	3.76	95.62
No. 20	11.03	84.59
No. 40	27.64	56.95
No. 60	32.54	24.41
No. 140	21.28	3.13
No. 200	1.01	2.12

APPENDIX B

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		LAB PROJECT #:
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Ave Ave Suite 3		ADDRESS: Foster Plaza 7 PCB		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl	VOC + MIBE Sigma Aldrich Sampler VOC	VOC + MIBE 40z Amber Glass SVOC + 1,4-D	SVOC 40z Amber Glass Metals	Metals + pH 40z Amber Glass TAL Metals	TAL Metals 40z Amber Glass TAL Metals plus Moisture	TAL Metals plus Moisture 8oz Amber Glass Cyanide	COMMENTS
TB-020303	2/3/03 0400		X	X				2	2							
FTA-SS-101	2/3/03 1150		X		X					3	1	1		1	1	
FTA-SU-101-0204	2/3/03 1201		X		X					3	1		1			
FTA-SU-101-0708	2/3/03 1215		X		X					3	1		1			
FTA-SS-102	2/3/03 1245		X		X					3	1	1		1	1	
FTA-SU-102-0204	2/3/03 1255		X		X					3	1		1			
FTA-SU-102-0708	2/3/03 1313		X		X					3	1		1			
FTA-SS-103	2/3/03 1326		X		X					3	1	1		1	1	
FTA-SU-103-0204	2/3/03 1337		X		X					3	1		1			
FTA-SU-103-0809	2/3/03 1447		X		X					3	1		1			
	/															
	/															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/3/03 1700		/	Shipped Via Federal Express Airbill No 8286 8470 7512	
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and nine soil samples that were collected on February 3, 2003, and received at Mitkem on February 4, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 and bromofluorobenzene in sample SV1010708. The sample was re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: sample SV1010708 initially analyzed at low level, but due to high concentration of target analytes, was re-analyzed at dilution by medium level. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of 2-methylnaphthalene, sample FTASS101 was re-analyzed at 2x dilution. Sample SV1010708 was re-analyzed at 10x. Sample SV1010708 was re-analyzed at dilution even though no target analytes were determined above the instrument calibration range due to matrix interferences. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of low recovery of tetrachloro-m-xylene in both columns for samples FTASS101, SV1020204, SV1020708 and SV1030204. The samples were re-extracted with all surrogate recoveries within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: samples FTASS101, SV1020204, SV1020708 and SV1030204 were re-extracted outside of holding time. The initial analysis was within hold time, but had non-compliant surrogate recoveries. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/04/03
Date Reported: 2/10/03
P.O. #: 279
Work Order #: 0302-01509

DESCRIPTION: PROJECT# B0187 (THREE SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

001110

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

TETRA TECH NUS

PHIL-17048

TO: G. GLENN **DATE:** APRIL 22, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0199

SAMPLES: **26/Solid/**

FTA-SS-104	FTA-SS-107	FTA-SS-110
FTA-SU-104-0204	FTA-SU-107-0204	FTA-SS-DUP1
FTA-SU-104-0911	FTA-SU-107-1113	FTA-SU-110-0204
FTA-SS-105	FTA-SS-108	FTA-SU-DUP2
FTA-SU-105-0204	FTA-SU-108-0204	FTA-SU-110-0709
FTA-SU-105-0911	FTA-SU-108-0709	FTA-SS-111
FTA-SS-106	FTA-SS-109	FTA-SU-111-0204
FTA-SU-106-0204	FTA-SU-109-0204	FTA-SU-111-0810
FTA-SU-106-1113	FTA-SU-109-0709	

2/Aqueous/

RB-020403
TB-020403

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0199, consists of twenty-six soil environmental samples (designated FTA-), one rinsate blank (designated RB-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). Two field duplicate pairs (FTA-SS-110/FTA-SS-DUP1 and FTA-SU-110-0204/FTA-SU-110-DUP2) were included in this SDG. Sample FTA-SS-DUP1, duplicate of FTA-SS-110, was analyzed for VOCs only. Sample FTA-SS-111 was analyzed for VOCs and PCBs only.

The samples were collected by Tetra Tech NUS on February 4, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory

Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (solid)
Acetone	14 ug/kg	140 ug/kg
Bromoform*	2 ug/L	10 ug/kg
Chloroform*	1 ug/L	5 ug/kg
Methylene Chloride	12 ug/kg	120 ug/kg
2-Hexanone	3 ug/kg	15 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The solid action levels apply to the soil environmental samples. It should be noted that field QC blanks do not receive qualification based on laboratory blank contamination.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone, methylene chloride, and 2-hexanone in the samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The initial calibration percent relative standard deviation (%RSD) for acetone exceeded the QC limit of 30%. Positive results are considered estimated, but data qualification was based upon more significant issues (blank qualification) as noted above.
- Two continuing calibration percent differences (%D) for acetone exceeded the QC limit of 25%. Positive results are considered estimated, but data qualification was based upon more significant issues as noted above.
- One surrogate recovery exceeded the upper QC limit in the low level analyses for samples FTA-SU-104-0911, FTA-SU-105-0204, FTA-SU-105-0911, and FTA-SU-108-0709. The positive and non-detected results reported from these analyses were qualified estimated (J/UJ).
- The internal standard area recoveries for 1,4-dichlorobenzene-d4 in the low level analyses for samples FTA-SU-105-0204, FTA-SS-110, and FTA-SS-DUP1 were less than the lower QC limit of 50%. The detection limits for compounds associated with this internal standard were qualified estimated (UJ).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

SEMIVOLATILE FRACTION

- The continuing calibration percent difference (%D) for 4-nitroaniline exceeded the QC limit of 50%. The associated non-detected results were qualified estimated (UJ).

- The continuing calibration percent difference (%D) for carbazole, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene exceeded the QC limit of 25%. The associated positive results for these compounds were qualified estimated (J).
- The internal standard area recovery for perylene-d12 in sample FTA-SU-105-0204 was less than the QC limit of 50%. The associated compound positive results and detection limits quantified by this internal standard were qualified estimated (J/UJ).
- The aqueous LCS exhibited recoveries less than the lower QC limits for 2-methylphenol, 4-methylphenol, 3-nitroaniline, and 3,3'-dichlorobenzidine. The associated non-detected results were qualified biased low (UL).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

NOTES

The volatile fraction of sample FTA-SU-104-0911 was reanalyzed at a medium level dilution for 1,2,4-trimethylbenzene. The original concentration for this compound exceeded the calibration range of the instrument. Only the result for 1,2,4-trimethylbenzene was reported from the medium analysis.

The volatile fraction of sample FTA-SU-105-0204 was reanalyzed at a medium level dilution for 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene. The original concentrations for these compounds exceeded the calibration range of the instrument. Only the results for these compounds were reported from the medium analysis.

The volatile fraction of sample FTA-SU-105-0911 was reanalyzed at a medium level dilution for 1,1,1-trichloroethene, toluene, 2-hexanone, ethylbenzene, xylene (total), isopropylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and methylcyclohexane. The original concentrations for these compounds exceeded the calibration range of the instrument. Only the results for these compounds were reported from the medium analysis.

The semivolatile fraction of sample FTA-SU-105-0911 was reanalyzed at a 10X dilution due to concentrations of 2-methylnaphthalene and naphthalene over the calibration range of the instrument in the original analysis. The laboratory reported only raw data and results from the diluted analysis.

The MS/MSD recoveries for several volatile compounds exceeded or were less than the QC limits. No action is taken on MS/MSD data alone.

The LCS recoveries for vinyl chloride, bromomethane, chloroethane, and trichlorofluoromethane exceeded the QC limits. No action was taken because there were no positive detections for these compounds.

The data validator has corrected the proper field sample I.D.s which are shown on the data summary and handwritten atop the sample result sheets (Form I's). This action was necessary because the laboratory software used to generate the data report does not allow sufficient field width to list the entire field sample I.D.s from the chain of custody forms. The laboratory reported abbreviated I.D.s omitting the prefix "FTA-" and dashes.

No other problems were noted during review.

EXECUTIVE SUMMARY

Laboratory Performance: Acetone, methylene chloride, and 2-hexanone were detected in the volatile fraction laboratory blanks. The initial calibration %RSD exceeded QC limits for one compound in the volatile fraction. The continuing calibration %D exceeded QC limits for two volatile fraction compounds. The internal standard recoveries were less than the QC limit for three samples in the volatile fraction. The LCS recoveries exceeded the QC limits for four compounds in the volatile fraction. Four compounds exceeded continuing calibration QC limits for the semivolatile fraction. A semivolatile internal standard area recovery was less than the QC limit for one sample. Four recoveries were less than the QC limits for the aqueous semivolatile LCS.

Other Factors Affecting Data Quality: Bromoform was detected in the rinsate blank and chloroform was detected in the trip blank. Four samples exhibited volatile surrogate recoveries that exceeded the QC limits. Percent recoveries for several compounds exceeded or were less than the QC limits for the matrix spikes.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02C			B0199-03B			B0199-04B			B0199-05C			B0199-06B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	9	U		11	U		96	J	R	12	U		11	J	R
1,1,2,2-Tetrachloroethane	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
1,1,2-Trichloro-1,2,2-trifluoroethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,1,2-Trichloroethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,1-Dichloroethane	9	U		11	U		2	J	PR	12	U		3	J	PR
1,1-Dichloroethene	9	U		11	U		21	J	R	12	U		11	UJ	R
1,2,4-Trichlorobenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
1,2,4-Trimethylbenzene	9	U		11	U		68	J	P	3	J	P	740		
1,2-Dibromo-3-chloropropane	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
1,2-Dibromoethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,2-Dichlorobenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
1,2-Dichloroethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,2-Dichloroethene (cis)	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,2-Dichloroethene (trans)	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,2-Dichloropropane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
1,3,5-Trimethylbenzene	9	U		11	U		140	J	R	1	J	P	450		
1,3-Dichlorobenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
1,4-Dichlorobenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	NR
2-Butanone	9	U		11	U		10	UJ	R	12	U		25	J	R
2-Hexanone	9	U		11	U		10	UJ	R	12	U		11	UJ	R
4-Methyl-2-pentanone	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Acetone	15	B	A	14	B	A	42	B	A	20	B	A	78	B	A
Benzene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Bromodichloromethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Bromoform	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Bromomethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Carbon Disulfide	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Carbon Tetrachloride	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Chlorobenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Chloroethane	9	U		11	U		10	UJ	R	12	U		3	J	PR
Chloroform	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Chloromethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
cis-1,3-Dichloropropene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Cyclohexane	9	U		11	U		68	J	R	12	U		11	UJ	R
Dibromochloromethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Dichlorodifluoromethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Ethylbenzene	9	U		11	U		16	J	R	12	U		11	UJ	R
Isopropylbenzene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Methyl Acetate	3	J	P	11	U		10	UJ	R	5	J	P	11	UJ	R
Methyl Tert-butyl Ether	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Methylcyclohexane	9	U		11	U		20	J	R	12	U		2	J	PR
Methylene Chloride	6	B	A	12	B	A	8	B	A	6	B	A	13	B	A
Styrene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Tetrachloroethene	1	J	P	11	U		26	J	R	12	U		31	J	R

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02C			B0199-03B			B0199-04B			B0199-05C			B0199-06B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Toluene	1	J	P	11	U		41	J	R	12	U		11	UJ	R
trans-1,3-Dichloropropene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Trichloroethene	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Trichlorofluoromethane	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Vinyl Chloride	9	U		11	U		10	UJ	R	12	U		11	UJ	R
Xylene (Total)	9	U		11	U		90	J	R	12	U		11	UJ	R
m,p-xylene	NA			NA			NA			NA			NA		
o-xylene	NA			NA			NA			NA			NA		

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07B			B0199-08C			B0199-09B			B0199-10B			B0199-11C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	1000			11	U		11	U		10	U		12	U	
1,1,2,2-Tetrachloroethane	10	UJ	R	11	U		11	U		10	U		12	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	10	UJ	R	11	U		11	U		10	U		12	U	
1,1,2-Trichloroethane	10	UJ	R	11	U		11	U		10	U		12	U	
1,1-Dichloroethane	1	J	PR	11	U		11	U		10	U		12	U	
1,1-Dichloroethene	69	J	R	11	U		11	U		10	U		12	U	
1,2,4-Trichlorobenzene	10	UJ	R	11	U		11	U		10	U		12	U	
1,2,4-Trimethylbenzene	12000			1	J	P	2	J	P	1	J	P	1	J	P
1,2-Dibromo-3-chloropropane	10	UJ	R	11	U		11	U		10	U		12	U	
1,2-Dibromoethane	10	UJ	R	11	U		11	U		10	U		12	U	
1,2-Dichlorobenzene	10	UJ	R	11	U		11	U		10	U		12	U	
1,2-Dichloroethane	10	UJ	R	11	U		11	U		10	U		12	U	
1,2-Dichloroethene (cis)	3	J	PR	11	U		11	U		10	U		12	U	
1,2-Dichloroethene (trans)	10	UJ	R	11	U		11	U		10	U		12	U	
1,2-Dichloropropane	10	UJ	R	11	U		11	U		10	U		12	U	
1,3,5-Trimethylbenzene	5100			11	U		11	U		10	U		12	U	
1,3-Dichlorobenzene	10	UJ	R	11	U		11	U		10	U		12	U	
1,4-Dichlorobenzene	10	UJ	R	11	U		11	U		10	U		12	U	
2-Butanone	10	UJ	R	11	U		11	U		10	U		12	U	
2-Hexanone	10	UJ	R	4	B	A	11	U		10	U		12	U	
4-Methyl-2-pentanone	10	UJ	R	11	U		11	U		10	U		12	U	
Acetone	14	B	A	12	B	A	5	B	A	4	B	A	23	B	A
Benzene	7	J	PR	11	U		11	U		10	U		12	U	
Bromodichloromethane	10	UJ	R	11	U		11	U		10	U		12	U	
Bromoform	10	UJ	R	11	U		11	U		10	U		12	U	
Bromomethane	10	UJ	R	11	U		11	U		10	U		12	U	
Carbon Disulfide	10	UJ	R	11	U		11	U		10	U		12	U	
Carbon Tetrachloride	10	UJ	R	11	U		11	U		10	U		12	U	
Chlorobenzene	10	UJ	R	11	U		11	U		10	U		12	U	
Chloroethane	4	J	PR	11	U		11	U		10	U		12	U	
Chloroform	10	UJ	R	11	U		11	U		10	U		12	U	
Chloromethane	10	UJ	R	11	U		11	U		10	U		12	U	
cis-1,3-Dichloropropene	10	UJ	R	11	U		11	U		10	U		12	U	
Cyclohexane	10	UJ	R	11	U		11	U		10	U		12	U	
Dibromochloromethane	10	UJ	R	11	U		11	U		10	U		12	U	
Dichlorodifluoromethane	10	UJ	R	11	U		11	U		10	U		12	U	
Ethylbenzene	2600			11	U		11	U		10	U		12	U	
Isopropylbenzene	760			11	U		11	U		10	U		12	U	
Methyl Acetate	10	UJ	R	11	U		11	U		10	U		5	J	P
Methyl Tert-butyl Ether	10	UJ	R	11	U		11	U		10	U		12	U	
Methylcyclohexane	1500			11	U		11	U		10	U		12	U	
Methylene Chloride	9	B	A	5	B	A	10	B	A	11	B	A	5	B	A
Styrene	10	UJ	R	11	U		11	U		10	U		12	U	
Tetrachloroethene	12	J	R	11	U		11	U		10	U		12	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07B			B0199-08C			B0199-09B			B0199-10B			B0199-11C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Toluene	9700			11	U		1	J	P	10	U		12	U	
trans-1,3-Dichloropropene	10	UJ	R	11	U		11	U		10	U		12	U	
Trichloroethene	10	UJ	R	11	U		11	U		10	U		12	U	
Trichlorofluoromethane	10	UJ	R	11	U		11	U		10	U		12	U	
Vinyl Chloride	10	UJ	R	11	U		11	U		10	U		12	U	
Xylene (Total)	8400			11	U		11	U		10	U		12	U	
m,p-xylene	NA			NA			NA			NA			NA		
o-xylene	NA			NA			NA			NA			NA		

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12B			B0199-13B			B0199-14C			B0199-15B			B0199-16B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,1,2,2-Tetrachloroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,1,2-Trichloroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,1-Dichloroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,1-Dichloroethene	12	U		12	U		14	U		12	U		12	UJ	R
1,2,4-Trichlorobenzene	12	U		12	U		14	U		12	U		12	UJ	R
1,2,4-Trimethylbenzene	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dibromo-3-chloropropane	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dibromoethane	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dichlorobenzene	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dichloroethane	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dichloroethene (cis)	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dichloroethene (trans)	12	U		12	U		14	U		12	U		12	UJ	R
1,2-Dichloropropane	12	U		12	U		14	U		12	U		12	UJ	R
1,3,5-Trimethylbenzene	12	U		12	U		14	U		12	U		12	UJ	R
1,3-Dichlorobenzene	12	U		12	U		14	U		12	U		12	UJ	R
1,4-Dichlorobenzene	12	U		12	U		14	U		12	U		12	UJ	R
2-Butanone	12	U		12	U		14	U		12	U		12	UJ	R
2-Hexanone	3	B	A	6	B	A	14	U		12	U		12	UJ	R
4-Methyl-2-pentanone	12	U		12	U		14	U		12	U		12	UJ	R
Acetone	8	B	A	10	B	A	12	B	A	10	B	A	11	B	A
Benzene	12	U		12	U		14	U		12	U		12	UJ	R
Bromodichloromethane	12	U		12	U		14	U		12	U		12	UJ	R
Bromoform	12	U		12	U		14	U		12	U		12	UJ	R
Bromomethane	12	U		12	U		14	U		12	U		12	UJ	R
Carbon Disulfide	12	U		12	U		14	U		12	U		12	UJ	R
Carbon Tetrachloride	12	U		12	U		14	U		12	U		12	UJ	R
Chlorobenzene	12	U		12	U		14	U		12	U		12	UJ	R
Chloroethane	12	U		12	U		14	U		12	U		12	UJ	R
Chloroform	12	U		12	U		14	U		12	U		12	UJ	R
Chloromethane	12	U		12	U		14	U		12	U		12	UJ	R
cis-1,3-Dichloropropene	12	U		12	U		14	U		12	U		12	UJ	R
Cyclohexane	12	U		12	U		14	U		12	U		12	UJ	R
Dibromochloromethane	12	U		12	U		14	U		12	U		12	UJ	R
Dichlorodifluoromethane	12	U		12	U		14	U		12	U		12	UJ	R
Ethylbenzene	12	U		12	U		14	U		12	U		12	UJ	R
Isopropylbenzene	12	U		12	U		14	U		12	U		12	UJ	R
Methyl Acetate	12	U		12	U		14	U		12	U		12	UJ	R
Methyl Tert-butyl Ether	12	U		12	U		14	U		12	U		12	UJ	R
Methylcyclohexane	12	U		12	U		14	U		12	U		12	UJ	R
Methylene Chloride	3	B	A	16	B	A	6	B	A	5	B	A	21	B	A
Styrene	12	U		12	U		14	U		12	U		12	UJ	R
Tetrachloroethene	12	U		12	U		14	U		12	U		12	UJ	R

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12B			B0199-13B			B0199-14C			B0199-15B			B0199-16B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Toluene	12	U		12	U		14	U		12	U		12	UJ	R
trans-1,3-Dichloropropene	12	U		12	U		14	U		12	U		12	UJ	R
Trichloroethene	12	U		12	U		14	U		12	U		12	UJ	R
Trichlorofluoromethane	12	U		12	U		14	U		12	U		12	UJ	R
Vinyl Chloride	12	U		12	U		14	U		12	U		12	UJ	R
Xylene (Total)	12	U		12	U		14	U		12	U		12	UJ	R
m,p-xylene	NA			NA			NA			NA			NA		
o-xylene	NA			NA			NA			NA			NA		

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SS-DUP1		
Laboratory ID:	B0199-17C			B0199-18B			B0199-19B			B0199-20C			B0199-23C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:										FTA-SS-DUP1			FTA-SS-110		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	12	U		11	U		11	U		10	U		11	U	
1,1,2,2-Tetrachloroethane	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,1,2-Trichloro-1,2,2-trifluoroethane	12	U		11	U		11	U		10	U		11	U	
1,1,2-Trichloroethane	12	U		11	U		11	U		10	U		11	U	
1,1-Dichloroethane	12	U		11	U		11	U		10	U		11	U	
1,1-Dichloroethene	12	U		11	U		11	U		10	U		11	U	
1,2,4-Trichlorobenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,2,4-Trimethylbenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,2-Dibromo-3-chloropropane	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,2-Dibromoethane	12	U		11	U		11	U		10	U		11	U	
1,2-Dichlorobenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,2-Dichloroethane	12	U		11	U		11	U		10	U		11	U	
1,2-Dichloroethene (cis)	12	U		11	U		11	U		10	U		11	U	
1,2-Dichloroethene (trans)	12	U		11	U		11	U		10	U		11	U	
1,2-Dichloropropane	12	U		11	U		11	U		10	U		11	U	
1,3,5-Trimethylbenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,3-Dichlorobenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
1,4-Dichlorobenzene	12	U		11	U		11	U		10	UJ	N	11	UJ	N
2-Butanone	12	U		11	U		11	U		10	U		11	U	
2-Hexanone	4	B	A	11	U		11	U		10	U		11	U	
4-Methyl-2-pentanone	12	U		11	U		11	U		10	U		11	U	
Acetone	18	B	A	8	B	A	12	B	A	44	B	A	52	B	A
Benzene	12	U		11	U		11	U		10	U		11	U	
Bromodichloromethane	12	U		11	U		11	U		10	U		11	U	
Bromoform	12	U		11	U		11	U		10	U		11	U	
Bromomethane	12	U		11	U		11	U		10	U		11	U	
Carbon Disulfide	12	U		11	U		11	U		10	U		11	U	
Carbon Tetrachloride	12	U		11	U		11	U		10	U		11	U	
Chlorobenzene	12	U		11	U		11	U		10	U		11	U	
Chloroethane	12	U		11	U		11	U		10	U		11	U	
Chloroform	12	U		11	U		11	U		10	U		11	U	
Chloromethane	12	U		11	U		11	U		10	U		11	U	
cis-1,3-Dichloropropene	12	U		11	U		11	U		10	U		11	U	
Cyclohexane	12	U		11	U		11	U		10	U		11	U	
Dibromochloromethane	12	U		11	U		11	U		10	U		11	U	
Dichlorodifluoromethane	12	U		11	U		11	U		10	U		11	U	
Ethylbenzene	12	U		11	U		11	U		10	U		11	U	
Isopropylbenzene	12	U		11	U		11	U		10	U		11	U	
Methyl Acetate	12	U		11	U		11	U		7	J	P	11		
Methyl Tert-butyl Ether	12	U		11	U		11	U		10	U		11	U	
Methylcyclohexane	12	U		11	U		11	U		10	U		11	U	
Methylene Chloride	6	B	A	13	B	A	19	B	A	24	B	A	25	B	A
Styrene	12	U		11	U		11	U		10	U		11	U	
Tetrachloroethene	12	U		11	U		11	U		10	U		11	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SS-DUP1		
Laboratory ID:	B0199-17C			B0199-18B			B0199-19B			B0199-20C			B0199-23C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:										FTA-SS-DUP1			FTA-SS-110		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Toluene	12	U		11	U		11	U		10	U		11	U	
trans-1,3-Dichloropropene	12	U		11	U		11	U		10	U		11	U	
Trichloroethene	12	U		11	U		11	U		10	U		11	U	
Trichlorofluoromethane	12	U		11	U		11	U		10	U		11	U	
Vinyl Chloride	12	U		11	U		11	U		10	U		11	U	
Xylene (Total)	12	U		11	U		11	U		10	U		11	U	
m,p-xylene	NA			NA			NA			NA			NA		
o-xylene	NA			NA			NA			NA			NA		

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-110-0204			FTA-SU-DUP2			FTA-SU-110-0709			FTA-SS-111			FTA-SU-111-0204		
Laboratory ID:	B0199-21B			B0199-24B			B0199-22B			B0199-25C			B0199-26B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-DUP2			FTA-SU-110-0204											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	11	U		12	U		10	U		12	U		10	U	
1,1,2,2-Tetrachloroethane	11	U		12	U		10	U		12	U		10	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U		12	U		10	U		12	U		10	U	
1,1,2-Trichloroethane	11	U		12	U		10	U		12	U		10	U	
1,1-Dichloroethane	11	U		12	U		10	U		12	U		10	U	
1,1-Dichloroethene	11	U		12	U		10	U		12	U		10	U	
1,2,4-Trichlorobenzene	11	U		12	U		10	U		12	U		10	U	
1,2,4-Trimethylbenzene	11	U		12	U		10	U		12	U		10	U	
1,2-Dibromo-3-chloropropane	11	U		12	U		10	U		12	U		10	U	
1,2-Dibromoethane	11	U		12	U		10	U		12	U		10	U	
1,2-Dichlorobenzene	11	U		12	U		10	U		12	U		10	U	
1,2-Dichloroethane	11	U		12	U		10	U		12	U		10	U	
1,2-Dichloroethene (cis)	11	U		12	U		10	U		12	U		10	U	
1,2-Dichloroethene (trans)	11	U		12	U		10	U		12	U		10	U	
1,2-Dichloropropane	11	U		12	U		10	U		12	U		10	U	
1,3,5-Trimethylbenzene	11	U		12	U		10	U		12	U		10	U	
1,3-Dichlorobenzene	11	U		12	U		10	U		12	U		10	U	
1,4-Dichlorobenzene	11	U		12	U		10	U		12	U		10	U	
2-Butanone	11	U		12	U		10	U		12	U		10	U	
2-Hexanone	11	U		12	U		10	U		12	U		10	U	
4-Methyl-2-pentanone	11	U		12	U		10	U		4	B	A	4	B	A
Acetone	12	B	A	15	B	A	33	B	A	12	B	A	7	B	A
Benzene	11	U		12	U		10	U		12	U		10	U	
Bromodichloromethane	11	U		12	U		10	U		12	U		10	U	
Bromoform	11	U		12	U		10	U		12	U		10	U	
Bromomethane	11	U		12	U		10	U		12	U		10	U	
Carbon Disulfide	11	U		12	U		10	U		12	U		10	U	
Carbon Tetrachloride	11	U		12	U		10	U		12	U		10	U	
Chlorobenzene	11	U		12	U		10	U		12	U		10	U	
Chloroethane	11	U		12	U		10	U		12	U		10	U	
Chloroform	11	U		12	U		10	U		12	U		10	U	
Chloromethane	11	U		12	U		10	U		12	U		10	U	
cis-1,3-Dichloropropene	11	U		12	U		10	U		12	U		10	U	
Cyclohexane	11	U		12	U		10	U		12	U		10	U	
Dibromochloromethane	11	U		12	U		10	U		12	U		10	U	
Dichlorodifluoromethane	11	U		12	U		10	U		12	U		10	U	
Ethylbenzene	11	U		12	U		10	U		12	U		10	U	
Isopropylbenzene	11	U		12	U		10	U		12	U		10	U	
Methyl Acetate	11	U		12	U		2	J	P	12	U		10	U	
Methyl Tert-butyl Ether	11	U		12	U		10	U		12	U		10	U	
Methylcyclohexane	11	U		12	U		10	U		12	U		10	U	
Methylene Chloride	29	B	A	27	B	A	32	B	A	28	B	A	16	B	A
Styrene	11	U		12	U		10	U		12	U		10	U	
Tetrachloroethene	11	U		12	U		10	U		12	U		10	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-110-0204			FTA-SU-DUP2			FTA-SU-110-0709			FTA-SS-111			FTA-SU-111-0204		
Laboratory ID:	B0199-21B			B0199-24B			B0199-22B			B0199-25C			B0199-26B		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-DUP2			FTA-SU-110-0204											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Toluene	11	U		12	U		10	U		12	U		10	U	
trans-1,3-Dichloropropene	11	U		12	U		10	U		12	U		10	U	
Trichloroethene	11	U		12	U		10	U		12	U		10	U	
Trichlorofluoromethane	11	U		12	U		10	U		12	U		10	U	
Vinyl Chloride	11	U		12	U		10	U		12	U		10	U	
Xylene (Total)	11	U		12	U		10	U		12	U		10	U	
m,p-xylene	NA			NA			NA			NA			NA		
o-xylene	NA			NA			NA			NA			NA		

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-111-0810			RB-020403			TB-020403		
Laboratory ID:	B0199-27B			B0199-28A			B0199-01A		
Sample Date:	02/04/03			02/04/03			02/04/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L		
1,1,1-Trichloroethane	10	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	10	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U		1	U		1	U	
1,1,2-Trichloroethane	10	U		1	U		1	U	
1,1-Dichloroethane	10	U		1	U		1	U	
1,1-Dichloroethene	10	U		1	U		1	U	
1,2,4-Trichlorobenzene	10	U		1	U		1	U	
1,2,4-Trimethylbenzene	10	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	10	U		1	U		1	U	
1,2-Dibromoethane	10	U		1	U		1	U	
1,2-Dichlorobenzene	10	U		1	U		1	U	
1,2-Dichloroethane	10	U		1	U		1	U	
1,2-Dichloroethene (cis)	10	U		1	U		1	U	
1,2-Dichloroethene (trans)	10	U		1	U		1	U	
1,2-Dichloropropane	10	U		1	U		1	U	
1,3,5-Trimethylbenzene	10	U		1	U		1	U	
1,3-Dichlorobenzene	10	U		1	U		1	U	
1,4-Dichlorobenzene	10	U		1	U		1	U	
2-Butanone	10	U		5	U		5	U	
2-Hexanone	10	U		5	U		5	U	
4-Methyl-2-pentanone	10	U		5	U		5	U	
Acetone	39	B	A	5	U		5	U	
Benzene	10	U		1	U		1	U	
Bromodichloromethane	10	U		1	U		1	U	
Bromoform	10	U		2			1	U	
Bromomethane	10	U		1	U		1	U	
Carbon Disulfide	3	J	P	1	U		1	U	
Carbon Tetrachloride	10	U		1	U		1	U	
Chlorobenzene	10	U		1	U		1	U	
Chloroethane	10	U		1	U		1	U	
Chloroform	10	U		1	U		1		
Chloromethane	10	U		1	U		1	U	
cis-1,3-Dichloropropene	10	U		1	U		1	U	
Cyclohexane	10	U		1	U		1	U	
Dibromochloromethane	10	U		1	U		1	U	
Dichlorodifluoromethane	10	U		1	U		1	U	
Ethylbenzene	10	U		1	U		1	U	
Isopropylbenzene	10	U		1	U		1	U	
Methyl Acetate	10	U		1	U		1	U	
Methyl Tert-butyl Ether	10	U		1	U		1	U	
Methylcyclohexane	10	U		1	U		1	U	
Methylene Chloride	17	B	A	5			2	U	
Styrene	10	U		1	U		1	U	
Tetrachloroethene	10	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-111-0810			RB-020403			TB-020403		
Laboratory ID:	B0199-27B			B0199-28A			B0199-01A		
Sample Date:	02/04/03			02/04/03			02/04/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L		
Toluene	10	U		1	U		1	U	
trans-1,3-Dichloropropene	10	U		1	U		1	U	
Trichloroethene	10	U		1	U		1	U	
Trichlorofluoromethane	10	U		1	U		1	U	
Vinyl Chloride	10	U		1	U		1	U	
Xylene (Total)	10	U		1	U		1	U	
m,p-xylene	NA			1	U		1	U	
o-xylene	NA			1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0199\OV_B0199R2.DBF data retrieved on: 04/14/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02A			B0199-03A			B0199-04A			B0199-05A			B0199-06A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	350	U		360	U		340	U		380	U		380	U	
1,2-Dichlorobenzene	350	U		360	U		340	U		380	U		380	U	
1,3-Dichlorobenzene	350	U		360	U		340	U		380	U		380	U	
1,4-Dichlorobenzene	350	U		360	U		340	U		380	U		380	U	
2,2-Oxybis(1-chloropropane)	350	U		360	U		340	U		380	U		380	U	
2,4,5-Trichlorophenol	710	U		740	U		700	U		780	U		770	U	
2,4,6-Trichlorophenol	350	U		360	U		340	U		380	U		380	U	
2,4-Dichlorophenol	350	U		360	U		340	U		380	U		380	U	
2,4-Dimethylphenol	350	U		360	U		340	U		380	U		380	U	
2,4-Dinitrophenol	710	U		740	U		700	U		780	U		770	U	
2,4-Dinitrotoluene	350	U		360	U		340	U		380	U		380	U	
2,6-Dinitrotoluene	350	U		360	U		340	U		380	U		380	U	
2-Chloronaphthalene	350	U		360	U		340	U		380	U		380	U	
2-Chlorophenol	350	U		360	U		340	U		380	U		380	U	
2-Methylnaphthalene	350	U		360	U		1700			380	U		1100		
2-Methylphenol	350	U		360	U		340	U		380	U		380	U	
2-Nitroaniline	710	U		740	U		700	U		780	U		770	U	
2-Nitrophenol	350	U		360	U		340	U		380	U		380	U	
3,3-Dichlorobenzidine	350	U		360	U		340	U		380	U		380	U	
3-Nitroaniline	710	U		740	U		700	U		780	U		770	U	
4,6-Dinitro-2-methylphenol	710	U		740	U		700	U		780	U		770	U	
4-Bromophenyl Phenyl Ether	350	U		360	U		340	U		380	U		380	U	
4-Chloro-3-methylphenol	350	U		360	U		340	U		380	U		380	U	
4-Chloroaniline	350	U		360	U		340	U		380	U		380	U	
4-Chlorophenyl Phenyl Ether	350	U		360	U		340	U		380	U		380	U	
4-Methylphenol	350	U		360	U		340	U		380	U		380	U	
4-Nitroaniline	710	U		740	U		700	U		780	U		770	U	
4-Nitrophenol	710	U		740	U		700	U		780	U		770	U	
Acenaphthene	350	U		360	U		340	U		380	U		380	U	
Acenaphthylene	350	U		360	U		340	U		380	U		380	U	
Anthracene	350	U		360	U		65	J	P	380	U		380	U	
Benz(a)anthracene	350	U		360	U		340	U		130	J	P	380	U	
Benzo(a)pyrene	350	U		360	U		340	U		140	J	P	81	J	NP
Benzo(b)fluoranthene	53	J	P	360	U		340	U		230	J	P	380	UJ	N
Benzo(g,h,i)perylene	350	U		360	U		340	U		98	J	P	50	J	NP
Benzo(k)fluoranthene	350	U		360	U		340	U		110	J	P	380	UJ	N
Bis(2-chloroethoxy)methane	350	U		360	U		340	U		380	U		380	U	
Bis(2-chloroethyl)ether	350	U		360	U		340	U		380	U		380	U	
Bis(2-ethylhexyl)phthalate	350	U		200	J	P	550			380	U		520		
Butylbenzylphthalate	350	U		360	U		340	U		380	U		380	U	
Carbazole	350	U		360	U		340	U		380	U		380	U	
Chrysene	350	U		360	U		340	U		160	J	P	51	J	P
Di-n-butylphthalate	350	U		360	U		340	U		380	U		18	J	P
Di-n-octylphthalate	350	U		360	U		340	U		380	U		380	UJ	N

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02A			B0199-03A			B0199-04A			B0199-05A			B0199-06A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
Dibenz(a,h)anthracene	350	U		360	U		340	U		380	U		380	UJ	N
Dibenzofuran	350	U		360	U		340	U		380	U		380	U	
Diethylphthalate	350	U		360	U		340	U		380	U		380	U	
Dimethylphthalate	350	U		360	U		340	U		380	U		380	U	
Fluoranthene	350	U		360	U		340	U		190	J	P	380	U	
Fluorene	350	U		360	U		340	U		380	U		260	J	P
Hexachlorobenzene	350	U		360	U		340	U		380	U		380	U	
Hexachlorobutadiene	350	U		360	U		340	U		380	U		380	U	
Hexachlorocyclopentadiene	350	U		360	U		340	U		380	U		380	U	
Hexachloroethane	350	U		360	U		340	U		380	U		380	U	
Indeno(1,2,3-cd)pyrene	350	U		360	U		340	U		84	J	P	380	UJ	N
Isophorone	350	U		360	U		340	U		380	U		380	U	
N-Nitroso-di-n-propylamine	350	U		360	U		340	U		380	U		380	U	
N-Nitrosodiphenylamine (1)	350	U		360	U		340	U		380	U		380	U	
Naphthalene	350	U		360	U		610			380	U		300	J	P
Nitrobenzene	350	U		360	U		340	U		380	U		380	U	
Pentachlorophenol	710	U		740	U		700	U		780	U		770	U	
Phenanthrene	350	U		360	U		320	J	P	380	U		290	J	P
Phenol	350	U		360	U		340	U		380	U		380	U	
Pyrene	350	U		360	U		130	J	P	210	J	P	170	J	P

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07A			B0199-08A			B0199-09A			B0199-10A			B0199-11A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	3500	U		370	U		360	U		340	U		380	U	
1,2-Dichlorobenzene	3500	U		370	U		360	U		340	U		380	U	
1,3-Dichlorobenzene	3500	U		370	U		360	U		340	U		380	U	
1,4-Dichlorobenzene	3500	U		370	U		360	U		340	U		380	U	
2,2-Oxybis(1-chloropropane)	3500	U		370	U		360	U		340	U		380	U	
2,4,5-Trichlorophenol	7100	U		760	U		720	U		700	U		770	U	
2,4,6-Trichlorophenol	3500	U		370	U		360	U		340	U		380	U	
2,4-Dichlorophenol	3500	U		370	U		360	U		340	U		380	U	
2,4-Dimethylphenol	3500	U		370	U		360	U		340	U		380	U	
2,4-Dinitrophenol	7100	U		760	U		720	U		700	U		770	U	
2,4-Dinitrotoluene	3500	U		370	U		360	U		340	U		380	U	
2,6-Dinitrotoluene	3500	U		370	U		360	U		340	U		380	U	
2-Chloronaphthalene	3500	U		370	U		360	U		340	U		380	U	
2-Chlorophenol	3500	U		370	U		360	U		340	U		380	U	
2-Methylnaphthalene	56000			370	U		360	U		340	U		380	U	
2-Methylphenol	3500	U		370	U		360	U		340	U		380	U	
2-Nitroaniline	7100	U		760	U		720	U		700	U		770	U	
2-Nitrophenol	3500	U		370	U		360	U		340	U		380	U	
3,3-Dichlorobenzidine	3500	U		370	U		360	U		340	U		380	U	
3-Nitroaniline	7100	U		760	U		720	U		700	U		770	U	
4,6-Dinitro-2-methylphenol	7100	U		760	U		720	U		700	U		770	U	
4-Bromophenyl Phenyl Ether	3500	U		370	U		360	U		340	U		380	U	
4-Chloro-3-methylphenol	3500	U		370	U		360	U		340	U		380	U	
4-Chloroaniline	3500	U		370	U		360	U		340	U		380	U	
4-Chlorophenyl Phenyl Ether	3500	U		370	U		360	U		340	U		380	U	
4-Methylphenol	3500	U		370	U		360	U		340	U		380	U	
4-Nitroaniline	7100	U		760	UJ	C	720	U		700	U		770	UJ	C
4-Nitrophenol	7100	U		760	U		720	U		700	U		770	U	
Acenaphthene	440	J	P	370	U		360	U		340	U		380	U	
Acenaphthylene	3500	U		370	U		360	U		340	U		380	U	
Anthracene	3500	U		370	U		360	U		340	U		380	U	
Benz(a)anthracene	3500	U		92	J	P	360	U		340	U		380	U	
Benzo(a)pyrene	3500	U		83	J	P	360	U		340	U		380	U	
Benzo(b)fluoranthene	3500	U		140	J	P	360	U		340	U		380	U	
Benzo(g,h,i)perylene	3500	U		92	J	CP	360	U		340	U		380	U	
Benzo(k)fluoranthene	3500	U		50	J	P	360	U		340	U		380	U	
Bis(2-chloroethoxy)methane	3500	U		370	U		360	U		340	U		380	U	
Bis(2-chloroethyl)ether	3500	U		370	U		360	U		340	U		380	U	
Bis(2-ethylhexyl)phthalate	1200	J	P	370	U		360			74	J	P	380	U	
Butylbenzylphthalate	3500	U		370	U		360	U		340	U		380	U	
Carbazole	3500	U		370	U		360	U		340	U		380	U	
Chrysene	3500	U		99	J	P	360	U		340	U		380	U	
Di-n-butylphthalate	3500	U		370	U		360	U		340	U		380	U	
Di-n-octylphthalate	3500	U		370	U		360	U		340	U		380	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07A			B0199-08A			B0199-09A			B0199-10A			B0199-11A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
Dibenz(a,h)anthracene	3500	U		370	U		360	U		340	U		380	U	
Dibenzofuran	620	J	P	370	U		360	U		340	U		380	U	
Diethylphthalate	3500	U		370	U		360	U		340	U		380	U	
Dimethylphthalate	3500	U		370	U		360	U		340	U		380	U	
Fluoranthene	3500	U		170	J	P	360	U		340	U		380	U	
Fluorene	1000	J	P	370	U		360	U		340	U		380	U	
Hexachlorobenzene	3500	U		370	U		360	U		340	U		380	U	
Hexachlorobutadiene	3500	U		370	U		360	U		340	U		380	U	
Hexachlorocyclopentadiene	3500	U		370	U		360	U		340	U		380	U	
Hexachloroethane	3500	U		370	U		360	U		340	U		380	U	
Indeno(1,2,3-cd)pyrene	3500	U		72	J	CP	360	U		340	U		380	U	
Isophorone	3500	U		370	U		360	U		340	U		380	U	
N-Nitroso-di-n-propylamine	3500	U		370	U		360	U		340	U		380	U	
N-Nitrosodiphenylamine (1)	3500	U		370	U		360	U		340	U		380	U	
Naphthalene	24000			370	U		360	U		340	U		380	U	
Nitrobenzene	3500	U		370	U		360	U		340	U		380	U	
Pentachlorophenol	7100	U		760	U		720	U		700	U		770	U	
Phenanthrene	3900			80	J	P	360	U		340	U		380	U	
Phenol	3500	U		370	U		360	U		340	U		380	U	
Pyrene	3500	U		120	J	P	360	U		340	U		380	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12A			B0199-13A			B0199-14A			B0199-15A			B0199-16A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	350	U		360	U		400	U		360	U		360	U	
1,2-Dichlorobenzene	350	U		360	U		400	U		360	U		360	U	
1,3-Dichlorobenzene	350	U		360	U		400	U		360	U		360	U	
1,4-Dichlorobenzene	350	U		360	U		400	U		360	U		360	U	
2,2-Oxybis(1-chloropropane)	350	U		360	U		400	U		360	U		360	U	
2,4,5-Trichlorophenol	710	U		740	U		810	U		730	U		720	U	
2,4,6-Trichlorophenol	350	U		360	U		400	U		360	U		360	U	
2,4-Dichlorophenol	350	U		360	U		400	U		360	U		360	U	
2,4-Dimethylphenol	350	U		360	U		400	U		360	U		360	U	
2,4-Dinitrophenol	710	U		740	U		810	U		730	U		720	U	
2,4-Dinitrotoluene	350	U		360	U		400	U		360	U		360	U	
2,6-Dinitrotoluene	350	U		360	U		400	U		360	U		360	U	
2-Chloronaphthalene	350	U		360	U		400	U		360	U		360	U	
2-Chlorophenol	350	U		360	U		400	U		360	U		360	U	
2-Methylnaphthalene	350	U		360	U		400	U		360	U		360	U	
2-Methylphenol	350	U		360	U		400	U		360	U		360	U	
2-Nitroaniline	710	U		740	U		810	U		730	U		720	U	
2-Nitrophenol	350	U		360	U		400	U		360	U		360	U	
3,3-Dichlorobenzidine	350	U		360	U		400	U		360	U		360	U	
3-Nitroaniline	710	U		740	U		810	U		730	U		720	U	
4,6-Dinitro-2-methylphenol	710	U		740	U		810	U		730	U		720	U	
4-Bromophenyl Phenyl Ether	350	U		360	U		400	U		360	U		360	U	
4-Chloro-3-methylphenol	350	U		360	U		400	U		360	U		360	U	
4-Chloroaniline	350	U		360	U		400	U		360	U		360	U	
4-Chlorophenyl Phenyl Ether	350	U		360	U		400	U		360	U		360	U	
4-Methylphenol	350	U		360	U		400	U		360	U		360	U	
4-Nitroaniline	710	U		740	U		810	U		730	U		720	U	
4-Nitrophenol	710	U		740	U		810	U		730	U		720	U	
Acenaphthene	350	U		360	U		400	U		360	U		360	U	
Acenaphthylene	350	U		360	U		400	U		360	U		360	U	
Anthracene	350	U		360	U		400	U		360	U		360	U	
Benz(a)anthracene	350	U		360	U		400	U		360	U		360	U	
Benzo(a)pyrene	350	U		360	U		400	U		360	U		360	U	
Benzo(b)fluoranthene	350	U		360	U		400	U		360	U		360	U	
Benzo(g,h,i)perylene	350	U		360	U		400	U		360	U		360	U	
Benzo(k)fluoranthene	350	U		360	U		400	U		360	U		360	U	
Bis(2-chloroethoxy)methane	350	U		360	U		400	U		360	U		360	U	
Bis(2-chloroethyl)ether	350	U		360	U		400	U		360	U		360	U	
Bis(2-ethylhexyl)phthalate	77	J	P	43	J	P	400	U		280	J	P	360	U	
Butylbenzylphthalate	350	U		360	U		400	U		360	U		360	U	
Carbazole	350	U		360	U		400	U		360	U		360	U	
Chrysene	350	U		360	U		400	U		360	U		360	U	
Di-n-butylphthalate	350	U		360	U		400	U		360	U		360	U	
Di-n-octylphthalate	350	U		360	U		400	U		360	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12A			B0199-13A			B0199-14A			B0199-15A			B0199-16A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
Dibenz(a,h)anthracene	350	U		360	U		400	U		360	U		360	U	
Dibenzofuran	350	U		360	U		400	U		360	U		360	U	
Diethylphthalate	350	U		360	U		400	U		360	U		360	U	
Dimethylphthalate	350	U		360	U		400	U		360	U		360	U	
Fluoranthene	350	U		360	U		400	U		360	U		360	U	
Fluorene	350	U		360	U		400	U		360	U		360	U	
Hexachlorobenzene	350	U		360	U		400	U		360	U		360	U	
Hexachlorobutadiene	350	U		360	U		400	U		360	U		360	U	
Hexachlorocyclopentadiene	350	U		360	U		400	U		360	U		360	U	
Hexachloroethane	350	U		360	U		400	U		360	U		360	U	
Indeno(1,2,3-cd)pyrene	350	U		360	U		400	U		360	U		360	U	
Isophorone	350	U		360	U		400	U		360	U		360	U	
N-Nitroso-di-n-propylamine	350	U		360	U		400	U		360	U		360	U	
N-Nitrosodiphenylamine (1)	350	U		360	U		400	U		360	U		360	U	
Naphthalene	350	U		360	U		400	U		360	U		360	U	
Nitrobenzene	350	U		360	U		400	U		360	U		360	U	
Pentachlorophenol	710	U		740	U		810	U		730	U		720	U	
Phenanthrene	350	U		360	U		400	U		360	U		360	U	
Phenol	350	U		360	U		400	U		360	U		360	U	
Pyrene	350	U		360	U		400	U		360	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SU-110-0204		
Laboratory ID:	B0199-17A			B0199-18A			B0199-19A			B0199-20A			B0199-21A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:													FTA-SU-DUP2		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,2,4-Trichlorobenzene	350	U		370	U		360	U		360	U		360	U	
1,2-Dichlorobenzene	350	U		370	U		360	U		360	U		360	U	
1,3-Dichlorobenzene	350	U		370	U		360	U		360	U		360	U	
1,4-Dichlorobenzene	350	U		370	U		360	U		360	U		360	U	
2,2-Oxybis(1-chloropropane)	350	U		370	U		360	U		360	U		360	U	
2,4,5-Trichlorophenol	720	U		760	U		720	U		730	U		730	U	
2,4,6-Trichlorophenol	350	U		370	U		360	U		360	U		360	U	
2,4-Dichlorophenol	350	U		370	U		360	U		360	U		360	U	
2,4-Dimethylphenol	350	U		370	U		360	U		360	U		360	U	
2,4-Dinitrophenol	720	U		760	U		720	U		730	U		730	U	
2,4-Dinitrotoluene	350	U		370	U		360	U		360	U		360	U	
2,6-Dinitrotoluene	350	U		370	U		360	U		360	U		360	U	
2-Chloronaphthalene	350	U		370	U		360	U		360	U		360	U	
2-Chlorophenol	350	U		370	U		360	U		360	U		360	U	
2-Methylnaphthalene	350	U		370	U		360	U		360	U		360	U	
2-Methylphenol	350	U		370	U		360	U		360	U		360	U	
2-Nitroaniline	720	U		760	U		720	U		730	U		730	U	
2-Nitrophenol	350	U		370	U		360	U		360	U		360	U	
3,3-Dichlorobenzidine	350	U		370	U		360	U		360	U		360	U	
3-Nitroaniline	720	U		760	U		720	U		730	U		730	U	
4,6-Dinitro-2-methylphenol	720	U		760	U		720	U		730	U		730	U	
4-Bromophenyl Phenyl Ether	350	U		370	U		360	U		360	U		360	U	
4-Chloro-3-methylphenol	350	U		370	U		360	U		360	U		360	U	
4-Chloroaniline	350	U		370	U		360	U		360	U		360	U	
4-Chlorophenyl Phenyl Ether	350	U		370	U		360	U		360	U		360	U	
4-Methylphenol	350	U		370	U		360	U		360	U		360	U	
4-Nitroaniline	720	UJ	C	760	U		720	U		730	U		730	U	
4-Nitrophenol	720	U		760	U		720	U		730	U		730	U	
Acenaphthene	350	U		370	U		360	U		360	U		360	U	
Acenaphthylene	350	U		370	U		360	U		360	U		360	U	
Anthracene	350	U		370	U		360	U		360	U		360	U	
Benz(a)anthracene	350	U		370	U		360	U		360	U		360	U	
Benzo(a)pyrene	350	U		370	U		360	U		360	U		360	U	
Benzo(b)fluoranthene	350	U		370	U		360	U		360	U		360	U	
Benzo(g,h,i)perylene	350	U		370	U		360	U		360	U		360	U	
Benzo(k)fluoranthene	350	U		370	U		360	U		360	U		360	U	
Bis(2-chloroethoxy)methane	350	U		370	U		360	U		360	U		360	U	
Bis(2-chloroethyl)ether	350	U		370	U		360	U		360	U		360	U	
Bis(2-ethylhexyl)phthalate	350	U		67	J	P	360	U		46	J	P	290	J	P
Butylbenzylphthalate	350	U		370	U		360	U		360	U		360	U	
Carbazole	350	U		370	U		360	U		360	U		360	U	
Chrysene	350	U		370	U		360	U		360	U		360	U	
Di-n-butylphthalate	350	U		370	U		360	U		360	U		360	U	
Di-n-octylphthalate	350	U		370	U		360	U		360	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SU-110-0204		
Laboratory ID:	B0199-17A			B0199-18A			B0199-19A			B0199-20A			B0199-21A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:													FTA-SU-DUP2		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
Dibenz(a,h)anthracene	350	U		370	U		360	U		360	U		360	U	
Dibenzofuran	350	U		370	U		360	U		360	U		360	U	
Diethylphthalate	350	U		370	U		360	U		360	U		360	U	
Dimethylphthalate	350	U		370	U		360	U		360	U		360	U	
Fluoranthene	350	U		370	U		360	U		360	U		360	U	
Fluorene	350	U		370	U		360	U		360	U		360	U	
Hexachlorobenzene	350	U		370	U		360	U		360	U		360	U	
Hexachlorobutadiene	350	U		370	U		360	U		360	U		360	U	
Hexachlorocyclopentadiene	350	U		370	U		360	U		360	U		360	U	
Hexachloroethane	350	U		370	U		360	U		360	U		360	U	
Indeno(1,2,3-cd)pyrene	350	U		370	U		360	U		360	U		360	U	
Isophorone	350	U		370	U		360	U		360	U		360	U	
N-Nitroso-di-n-propylamine	350	U		370	U		360	U		360	U		360	U	
N-Nitrosodiphenylamine (1)	350	U		370	U		360	U		360	U		360	U	
Naphthalene	350	U		370	U		360	U		360	U		360	U	
Nitrobenzene	350	U		370	U		360	U		360	U		360	U	
Pentachlorophenol	720	U		760	U		720	U		730	U		730	U	
Phenanthrene	350	U		370	U		360	U		360	U		360	U	
Phenol	350	U		370	U		360	U		360	U		360	U	
Pyrene	350	U		370	U		360	U		360	U		360	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-DUP2			FTA-SU-110-0709			FTA-SU-111-0204			FTA-SU-111-0810			RB-020403		
Laboratory ID:	B0199-24A			B0199-22A			B0199-26A			B0199-27A			B0199-28C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-110-0204														
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/L		
1,2,4-Trichlorobenzene	370	U		350	U		360	U		340	U		10	U	
1,2-Dichlorobenzene	370	U		350	U		360	U		340	U		10	U	
1,3-Dichlorobenzene	370	U		350	U		360	U		340	U		10	U	
1,4-Dichlorobenzene	370	U		350	U		360	U		340	U		10	U	
2,2-Oxybis(1-chloropropane)	370	U		350	U		360	U		340	U		10	U	
2,4,5-Trichlorophenol	750	U		710	U		730	U		690	U		20	U	
2,4,6-Trichlorophenol	370	U		350	U		360	U		340	U		10	U	
2,4-Dichlorophenol	370	U		350	U		360	U		340	U		10	U	
2,4-Dimethylphenol	370	U		350	U		360	U		340	U		10	U	
2,4-Dinitrophenol	750	U		710	U		730	U		690	U		20	U	
2,4-Dinitrotoluene	370	U		350	U		360	U		340	U		10	U	
2,6-Dinitrotoluene	370	U		350	U		360	U		340	U		10	U	
2-Chloronaphthalene	370	U		350	U		360	U		340	U		10	U	
2-Chlorophenol	370	U		350	U		360	U		340	U		10	U	
2-Methylnaphthalene	370	U		350	U		360	U		340	U		10	U	
2-Methylphenol	370	U		350	U		360	U		340	U		10	UL	E
2-Nitroaniline	750	U		710	U		730	U		690	U		20	U	
2-Nitrophenol	370	U		350	U		360	U		340	U		10	U	
3,3-Dichlorobenzidine	370	U		350	U		360	U		340	U		10	UL	E
3-Nitroaniline	750	U		710	U		730	U		690	U		20	UL	E
4,6-Dinitro-2-methylphenol	750	U		710	U		730	U		690	U		20	U	
4-Bromophenyl Phenyl Ether	370	U		350	U		360	U		340	U		10	U	
4-Chloro-3-methylphenol	370	U		350	U		360	U		340	U		10	U	
4-Chloroaniline	370	U		350	U		360	U		340	U		10	U	
4-Chlorophenyl Phenyl Ether	370	U		350	U		360	U		340	U		10	U	
4-Methylphenol	370	U		350	U		360	U		340	U		10	UL	E
4-Nitroaniline	750	U		710	U		730	U		690	U		20	U	
4-Nitrophenol	750	U		710	U		730	U		690	U		20	U	
Acenaphthene	370	U		350	U		360	U		340	U		10	U	
Acenaphthylene	370	U		350	U		360	U		340	U		10	U	
Anthracene	370	U		350	U		160	J	P	340	U		10	U	
Benz(a)anthracene	370	U		350	U		360	U		340	U		10	U	
Benzo(a)pyrene	370	U		350	U		360	U		340	U		10	U	
Benzo(b)fluoranthene	370	U		350	U		360	U		340	U		10	U	
Benzo(g,h,i)perylene	370	U		350	U		360	U		340	U		10	U	
Benzo(k)fluoranthene	370	U		350	U		360	U		340	U		10	U	
Bis(2-chloroethoxy)methane	370	U		350	U		360	U		340	U		10	U	
Bis(2-chloroethyl)ether	370	U		350	U		360	U		340	U		10	U	
Bis(2-ethylhexyl)phthalate	41	J	P	100	J	P	240	J	P	110	J	P	10	U	
Butylbenzylphthalate	370	U		350	U		360	U		340	U		10	U	
Carbazole	370	U		350	U		65	J	CP	340	U		20	U	
Chrysene	370	U		350	U		360	U		340	U		10	U	
Di-n-butylphthalate	370	U		350	U		360	U		340	U		10	U	
Di-n-octylphthalate	370	U		350	U		360	U		340	U		10	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-DUP2			FTA-SU-110-0709			FTA-SU-111-0204			FTA-SU-111-0810			RB-020403		
Laboratory ID:	B0199-24A			B0199-22A			B0199-26A			B0199-27A			B0199-28C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-110-0204														
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
Dibenz(a,h)anthracene	370	U		350	U		360	U		340	U		10	U	
Dibenzofuran	370	U		350	U		360	U		340	U		10	U	
Diethylphthalate	370	U		350	U		360	U		340	U		10	U	
Dimethylphthalate	370	U		350	U		360	U		340	U		10	U	
Fluoranthene	370	U		350	U		53	J	P	340	U		10	U	
Fluorene	370	U		350	U		360	U		340	U		10	U	
Hexachlorobenzene	370	U		350	U		360	U		340	U		10	U	
Hexachlorobutadiene	370	U		350	U		360	U		340	U		10	U	
Hexachlorocyclopentadiene	370	U		350	U		360	U		340	U		10	U	
Hexachloroethane	370	U		350	U		360	U		340	U		10	U	
Indeno(1,2,3-cd)pyrene	370	U		350	U		360	U		340	U		10	U	
Isophorone	370	U		350	U		360	U		340	U		10	U	
N-Nitroso-di-n-propylamine	370	U		350	U		360	U		340	U		10	U	
N-Nitrosodiphenylamine (1)	370	U		350	U		360	U		340	U		10	U	
Naphthalene	370	U		350	U		360	U		340	U		10	U	
Nitrobenzene	370	U		350	U		360	U		340	U		10	U	
Pentachlorophenol	750	U		710	U		730	U		690	U		20	U	
Phenanthrene	370	U		350	U		78	J	P	340	U		10	U	
Phenol	370	U		350	U		360	U		340	U		10	U	
Pyrene	370	U		350	U		40	J	P	340	U		10	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0199\OS_B0199.DBF data retrieved on: 04/21/03

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02A			B0199-03A			B0199-04A			B0199-05A			B0199-06A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	35	U		37	U		36	U		39	U		39	U	
Aroclor-1221	35	U		37	U		36	U		39	U		39	U	
Aroclor-1232	35	U		37	U		36	U		39	U		39	U	
Aroclor-1242	35	U		37	U		36	U		39	U		39	U	
Aroclor-1248	35	U		37	U		36	U		39	U		39	U	
Aroclor-1254	35	U		37	U		36	U		39	U		39	U	
Aroclor-1260	35	U		37	U		36	U		39	U		39	U	

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07A			B0199-08A			B0199-09A			B0199-10A			B0199-11A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	36	U		38	U		36	U		35	U		39	U	
Aroclor-1221	36	U		38	U		36	U		35	U		39	U	
Aroclor-1232	36	U		38	U		36	U		35	U		39	U	
Aroclor-1242	36	U		38	U		36	U		35	U		39	U	
Aroclor-1248	36	U		38	U		36	U		35	U		39	U	
Aroclor-1254	36	U		38	U		36	U		35	U		39	U	
Aroclor-1260	36	U		38	U		36	U		35	U		39	U	

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12A			B0199-13A			B0199-14A			B0199-15A			B0199-16A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	35	U		37	U		40	U		37	U		37	U	
Aroclor-1221	35	U		37	U		40	U		37	U		37	U	
Aroclor-1232	35	U		37	U		40	U		37	U		37	U	
Aroclor-1242	35	U		37	U		40	U		37	U		37	U	
Aroclor-1248	35	U		37	U		40	U		37	U		37	U	
Aroclor-1254	35	U		37	U		40	U		37	U		37	U	
Aroclor-1260	35	U		37	U		40	U		37	U		37	U	

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SU-110-0204		
Laboratory ID:	B0199-17A			B0199-18A			B0199-19A			B0199-20A			B0199-21A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:													FTA-SU-DUP2		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	36	U		38	U		36	U		37	U		36	U	
Aroclor-1221	36	U		38	U		36	U		37	U		36	U	
Aroclor-1232	36	U		38	U		36	U		37	U		36	U	
Aroclor-1242	36	U		38	U		36	U		37	U		36	U	
Aroclor-1248	36	U		38	U		36	U		37	U		36	U	
Aroclor-1254	36	U		38	U		36	U		37	U		36	U	
Aroclor-1260	36	U		38	U		36	U		37	U		36	U	

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-DUP2			FTA-SU-110-0709			FTA-SU-111-0204			FTA-SU-111-0810			RB-020403		
Laboratory ID:	B0199-24A			B0199-22A			B0199-26A			B0199-27A			B0199-28C		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-110-0204														
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/L		
Aroclor-1016	37	U		36	U		36	U		35	U		1	U	
Aroclor-1221	37	U		36	U		36	U		35	U		1	U	
Aroclor-1232	37	U		36	U		36	U		35	U		1	U	
Aroclor-1242	37	U		36	U		36	U		35	U		1	U	
Aroclor-1248	37	U		36	U		36	U		35	U		1	U	
Aroclor-1254	37	U		36	U		36	U		35	U		1	U	
Aroclor-1260	37	U		36	U		36	U		35	U		1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0199 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0199\PCB_B0199.DBF data retrieved on: 04/22/03

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02C

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3695

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	1	J
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02C

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3695

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	3	J
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02C

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3695

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	5	NJ
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3698

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3698

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	1	J
95-63-6	1,2,4-Trimethylbenzene	3	J
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3698

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	12.80	60	J
2.		UNKNOWN	13.56	45	J
3.		UNKNOWN	13.68	31	J
4.		UNKNOWN	13.79	27	J
5.		UNKNOWN	14.06	24	J
6.		STRAIGHT-CHAIN ALKANE	14.15	150	J
7.		UNKNOWN	14.19	40	J
8.		BRANCHED ALKANE	14.34	63	J
9.		UNKNOWN	14.40	73	J
10.		UNKNOWN	14.66	29	J
11.		UNKNOWN	14.81	32	J
12.		UNKNOWN	14.91	35	J
13.	91-20-3	NAPHTHALENE	14.97	52	NJ
14.		UNKNOWN	15.01	23	J
15.		UNKNOWN	15.09	140	J
16.		UNKNOWN	15.19	26	J
17.		STRAIGHT-CHAIN ALKANE	15.41	160	J
18.		UNKNOWN	15.45	23	J
19.		UNKNOWN	15.56	28	J
20.		UNKNOWN	15.65	24	J
21.		UNKNOWN	15.68	48	J
22.		UNKNOWN	15.86	32	J
23.		UNKNOWN	16.01	57	J
24.		UNKNOWN	16.09	41	J
25.		UNKNOWN	16.14	54	J
26.		UNKNOWN	16.24	40	J
27.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	200	NJ
28.		UNKNOWN	16.38	28	J
29.	91-57-6	NAPHTHALENE, 2-METHYL-	16.54	170	NJ
30.	569-41-5	NAPHTHALENE, 1,8-DIMETHYL-	17.43	24	NJ

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3835

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	12	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	4	J
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3835

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3835

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.98	30	NJB
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3704

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	23	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3704

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3704

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 26

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	8.75	6	J
2.		STRAIGHT-CHAIN ALKANE	11.35	6	J
3.		STRAIGHT-CHAIN ALKANE	12.81	18	J
4.		UNKNOWN	13.56	6	J
5.		UNKNOWN	13.68	6	J
6.		STRAIGHT-CHAIN ALKANE	14.15	40	J
7.		UNKNOWN	14.34	15	J
8.		UNKNOWN	14.82	8	J
9.		UNKNOWN	14.85	6	J
10.		UNKNOWN	14.91	10	J
11.	91-20-3	NAPHTHALENE	14.97	14	NJ
12.		UNKNOWN	15.09	28	J
13.		STRAIGHT-CHAIN ALKANE	15.40	47	J
14.		UNKNOWN	15.51	6	J
15.		UNKNOWN	15.56	8	J
16.		UNKNOWN	15.65	8	J
17.		UNKNOWN	15.69	10	J
18.		UNKNOWN	16.00	7	J
19.		UNKNOWN	16.09	7	J
20.		UNKNOWN	16.14	12	J
21.		UNKNOWN	16.24	6	J
22.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	42	NJ
23.		STRAIGHT-CHAIN ALKANE	16.51	37	J
24.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.44	17	NJ
25.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	17.59	16	NJ
26.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	17.63	10	NJ
27.					
28.					
29.					
30.					

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3836

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 18 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	6	JB
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3836

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 18 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	14	U
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3836

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 18 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3839

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	4	J
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3839

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3839

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3728

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 11 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	44	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	24	B
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3728

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 11 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	7	J
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20C

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3728

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 11 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	10	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-25C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3715

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	28	B
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	4	J
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-25C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3715

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-25C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3715

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 15 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	22	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASSDUP1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-23C

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3731

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 13 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	52	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	25	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASSDUP1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-23C

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3731

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 13 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASSDUP1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-23C

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3731

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 13 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	17	NJ
2.		UNKNOWN	11.07	14	J
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4875

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	5	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4875

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	2	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4875

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3696

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	14	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	12	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3696

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3696

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3697

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	21	
67-64-1	Acetone	42	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	8	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	2	J
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	96	
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	41	
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	26	
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	16	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3697

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	90	
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	140	
95-63-6	1,2,4-Trimethylbenzene	250	E
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	68	
108-87-2	Methylcyclohexane	20	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3697

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.08	210	J
2.		UNKNOWN	7.40	230	J
3.		UNKNOWN	9.79	470	J
4.		UNKNOWN	10.15	320	J
5.		BRANCHED ALKANE	10.37	240	J
6.		UNKNOWN	10.54	590	J
7.		CYCLIC ALKANE	10.63	180	J
8.		UNKNOWN	10.72	350	J
9.		UNKNOWN	10.95	330	J
10.		UNKNOWN	11.06	650	J
11.		UNKNOWN	11.21	290	J
12.		STRAIGHT-CHAIN ALKANE	11.37	1200	J
13.		UNKNOWN	11.61	360	J
14.		BRANCHED ALKANE	11.74	380	J
15.		UNKNOWN	12.01	260	J
16.		UNKNOWN	12.09	170	J
17.		UNKNOWN	12.24	200	J
18.		UNKNOWN	12.33	180	J
19.		UNKNOWN	12.45	290	J
20.		UNKNOWN	12.59	190	J
21.	91-17-8	NAPHTHALENE, DECAHYDRO-	12.68	680	NJ
22.		STRAIGHT-CHAIN ALKANE	12.84	440	J
23.		UNKNOWN	12.93	430	J
24.		UNKNOWN	13.06	390	J
25.		UNKNOWN	13.23	200	J
26.		UNKNOWN	13.47	500	J
27.		UNKNOWN	13.57	180	J
28.		UNKNOWN	13.63	220	J
29.		UNKNOWN	13.74	270	J
30.		UNKNOWN	13.81	170	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3697

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	14.20	180	J
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04BDL

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V6C4751

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	260	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	260	U
74-83-9	Bromomethane	260	U
75-00-3	Chloroethane	260	U
75-69-4	Trichlorofluoromethane	260	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	230	DJ
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	260	U
156-60-5	trans-1,2-Dichloroethene	260	U
1634-04-4	Methyl tert-butyl ether	260	U
75-34-3	1,1-Dichloroethane	260	U
78-93-3	2-Butanone	260	U
156-59-2	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
71-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	260	U
107-06-2	1,2-Dichloroethane	260	U
71-43-2	Benzene	260	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-pentanone	260	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	260	U
79-00-5	1,1,2-Trichloroethane	260	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	260	U
124-48-1	Dibromochloromethane	260	U
106-93-4	1,2-Dibromoethane	260	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	260	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04BDL

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V6C4751

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	260	U
95-47-6	o-Xylene	260	U
1330-20-7	Xylene (Total)	260	U
100-42-5	Styrene	260	U
75-25-2	Bromoform	260	U
98-82-8	Isopropylbenzene	260	U
79-34-5	1,1,2,2-Tetrachloroethane	260	U
108-67-8	1,3,5-Trimethylbenzene	260	U
95-63-6	1,2,4-Trimethylbenzene	68	DJ
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	260	U
95-50-1	1,2-Dichlorobenzene	260	U
96-12-8	1,2-Dibromo-3-chloropropane	260	U
120-82-1	1,2,4-Trichlorobenzene	260	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	260	U
79-20-9	Methyl Acetate	260	U
110-81-7	Cyclohexane	260	U
108-87-2	Methylcyclohexane	260	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1040911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04BDL

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V6C4751

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.83	430	JD
2.		BRANCHED ALKANE	8.35	340	JD
3.		UNKNOWN	11.50	380	JD
4.		UNKNOWN	11.92	420	JD
5.		UNKNOWN	12.10	300	JD
6.		UNKNOWN	12.45	270	JD
7.		UNKNOWN	13.44	1400	JD
8.		UNKNOWN	14.06	2400	JD
9.	1120-21-4	UNDECANE	14.12	9500	NJD
10.		UNKNOWN	14.91	5400	JD
11.	2958-76-1	NAPHTHALENE, DECAHYDRO-2-MET	14.98	8800	NJD
12.		STRAIGHT-CHAIN ALKANE	15.33	7300	JD
13.		UNKNOWN	15.58	42000	JD
14.		UNKNOWN	18.31	460	JD
15.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	18.54	620	NJD
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3699

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	3	J
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	78	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	13	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	3	J
78-93-3	2-Butanone	25	
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	37	
127-18-4	Tetrachloroethene	31	
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3699

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	340	E
95-63-6	1,2,4-Trimethylbenzene	600	E
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	2	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3699

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		CYCLIC ALKANE	8.95	180	J
2.		UNKNOWN	9.20	360	J
3.		BRANCHED ALKANE	9.34	190	J
4.		STRAIGHT-CHAIN ALKANE	9.80	1200	J
5.		UNKNOWN	10.16	650	J
6.		BRANCHED ALKANE	10.38	650	J
7.		UNKNOWN	10.54	1300	J
8.		UNKNOWN	10.64	230	J
9.		UNKNOWN	10.73	680	J
10.		UNKNOWN	10.97	120	J
11.		UNKNOWN	11.06	190	J
12.		UNKNOWN	11.21	91	J
13.		STRAIGHT-CHAIN ALKANE	11.39	410	J
14.		UNKNOWN	11.63	97	J
15.		BRANCHED ALKANE	11.75	84	J
16.		UNKNOWN	12.01	75	J
17.		CYCLIC ALKANE	12.11	74	J
18.		UNKNOWN	12.29	42	J
19.		UNKNOWN	12.44	100	J
20.	1074-43-7	BENZENE, 1-METHYL-3-PROPYL-	12.59	39	NJ
21.	91-17-8	NAPHTHALENE, DECAHYDRO-	12.69	180	NJ
22.		UNKNOWN	12.83	120	J
23.		UNKNOWN	12.92	110	J
24.		UNKNOWN	13.06	98	J
25.	281-23-2	ADAMANTANE	13.23	45	NJ
26.		UNKNOWN	13.29	58	J
27.		UNKNOWN	13.47	100	J
28.		CYCLIC ALKANE	13.56	36	J
29.		UNKNOWN	13.63	46	J
30.		UNKNOWN	13.73	53	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050204DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06BDL

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V6C4752

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	260	U
74-87-3	Chloromethane	260	U
75-01-4	Vinyl Chloride	260	U
74-83-9	Bromomethane	260	U
75-00-3	Chloroethane	260	U
75-69-4	Trichlorofluoromethane	260	U
75-35-4	1,1-Dichloroethene	260	U
67-64-1	Acetone	260	U
75-15-0	Carbon Disulfide	260	U
75-09-2	Methylene Chloride	260	U
156-60-5	trans-1,2-Dichloroethene	260	U
1634-04-4	Methyl tert-butyl ether	260	U
75-34-3	1,1-Dichloroethane	260	U
78-93-3	2-Butanone	260	U
156-59-2	cis-1,2-Dichloroethene	260	U
67-66-3	Chloroform	260	U
71-55-6	1,1,1-Trichloroethane	260	U
56-23-5	Carbon Tetrachloride	260	U
107-06-2	1,2-Dichloroethane	260	U
71-43-2	Benzene	260	U
79-01-6	Trichloroethene	260	U
78-87-5	1,2-Dichloropropane	260	U
75-27-4	Bromodichloromethane	260	U
10061-01-5	cis-1,3-Dichloropropene	260	U
108-10-1	4-Methyl-2-pentanone	260	U
108-88-3	Toluene	260	U
10061-02-6	trans-1,3-Dichloropropene	260	U
79-00-5	1,1,2-Trichloroethane	260	U
127-18-4	Tetrachloroethene	260	U
591-78-6	2-Hexanone	260	U
124-48-1	Dibromochloromethane	260	U
106-93-4	1,2-Dibromoethane	260	U
108-90-7	Chlorobenzene	260	U
100-41-4	Ethylbenzene	260	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050204DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06BDL

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V6C4752

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	260	U
95-47-6	o-Xylene	260	U
1330-20-7	Xylene (Total)	260	U
100-42-5	Styrene	260	U
75-25-2	Bromoform	260	U
98-82-8	Isopropylbenzene	260	U
79-34-5	1,1,2,2-Tetrachloroethane	260	U
108-67-8	1,3,5-Trimethylbenzene	450	D
95-63-6	1,2,4-Trimethylbenzene	740	D
541-73-1	1,3-Dichlorobenzene	260	U
106-46-7	1,4-Dichlorobenzene	260	U
95-50-1	1,2-Dichlorobenzene	260	U
96-12-8	1,2-Dibromo-3-chloropropane	260	U
120-82-1	1,2,4-Trichlorobenzene	260	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	260	U
79-20-9	Methyl Acetate	260	U
110-81-7	Cyclohexane	260	U
108-87-2	Methylcyclohexane	260	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1050204DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06BDL

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V6C4752

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 14 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 23

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		CYCLIC ALKANE	10.17	280	JD
2.		UNKNOWN	10.46	370	JD
3.		UNKNOWN	11.12	1400	JD
4.		UNKNOWN	11.51	2400	JD
5.		BRANCHED ALKANE	11.73	890	JD
6.		UNKNOWN	11.91	1900	JD
7.		UNKNOWN	12.01	580	JD
8.		STRAIGHT-CHAIN ALKANE	12.74	780	JD
9.		UNKNOWN	12.98	430	JD
10.		UNKNOWN	13.10	1200	JD
11.		UNKNOWN	13.46	1300	JD
12.		STRAIGHT-CHAIN ALKANE	14.12	2900	JD
13.		UNKNOWN	14.35	3700	JD
14.		UNKNOWN	14.75	1000	JD
15.		UNKNOWN	14.82	1400	JD
16.		UNKNOWN	14.92	880	JD
17.	2958-76-1	NAPHTHALENE, DECAHYDRO-2-MET	14.99	3400	NJD
18.		STRAIGHT-CHAIN ALKANE	15.33	1200	JD
19.		UNKNOWN	15.40	1500	JD
20.		UNKNOWN	15.49	780	JD
21.		UNKNOWN	15.58	6800	JD
22.		STRAIGHT-CHAIN ALKANE	16.41	3900	JD
23.		UNKNOWN	17.49	910	JD
24.					
25.					
26.					
27.					
28.					
29.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3700

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	4	J
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	69	
67-64-1	Acetone	14	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	9	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	1	J
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	3	J
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	230	E
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	7	J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	1200	E
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	12	
591-78-6	2-Hexanone	730	E
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	990	E

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3700

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	2500	E
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	220	E
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	880	E
95-63-6	1,2,4-Trimethylbenzene	1700	E
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	270	E

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3700

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.09	120	J
2.		BRANCHED ALKANE	7.28	83	J
3.		UNKNOWN	7.41	170	J
4.		UNKNOWN	7.82	66	J
5.		STRAIGHT-CHAIN ALKANE	8.08	150	J
6.		UNKNOWN	9.21	230	J
7.		BRANCHED ALKANE	9.35	150	J
8.		BRANCHED ALKANE	10.39	240	J
9.		UNKNOWN	10.52	450	J
10.		UNKNOWN	10.74	220	J
11.		UNKNOWN	10.97	77	J
12.		UNKNOWN	11.06	65	J
13.	620-14-4	BENZENE, 1-ETHYL-3-METHYL-	11.25	130	NJ
14.		STRAIGHT-CHAIN ALKANE	11.40	240	J
15.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	11.61	110	NJ
16.		BRANCHED ALKANE	11.75	81	J
17.		UNKNOWN	12.01	99	J
18.		UNKNOWN	12.12	130	J
19.	95-36-3	1,2,4-TRIMETHYLBENZENE	12.33	120	NJ
20.		UNKNOWN	12.59	88	J
21.		UNKNOWN	12.68	120	J
22.		STRAIGHT-CHAIN ALKANE	12.83	92	J
23.		UNKNOWN	12.90	66	J
24.		UNKNOWN	13.05	62	J
25.	933-98-2	BENZENE, 1-ETHYL-2,3-DIMETHY	13.14	40	NJ
26.		UNKNOWN	13.28	43	J
27.		UNKNOWN	13.47	37	J
28.		UNKNOWN	14.20	16	J
29.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.41	9	NJ
30.	91-20-3	NAPHTHALENE	14.98	14	NJ

000086

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07BDL

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V6C4753

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	330	U
74-87-3	Chloromethane	330	U
75-01-4	Vinyl Chloride	330	U
74-83-9	Bromomethane	330	U
75-00-3	Chloroethane	330	U
75-69-4	Trichlorofluoromethane	330	U
75-35-4	1,1-Dichloroethene	96	DJ
67-64-1	Acetone	330	U
75-15-0	Carbon Disulfide	330	U
75-09-2	Methylene Chloride	330	U
156-60-5	trans-1,2-Dichloroethene	330	U
1634-04-4	Methyl tert-butyl ether	330	U
75-34-3	1,1-Dichloroethane	330	U
78-93-3	2-Butanone	330	U
156-59-2	cis-1,2-Dichloroethene	330	U
67-66-3	Chloroform	330	U
71-55-6	1,1,1-Trichloroethane	1000	D
56-23-5	Carbon Tetrachloride	330	U
107-06-2	1,2-Dichloroethane	330	U
71-43-2	Benzene	330	U
79-01-6	Trichloroethene	330	U
78-87-5	1,2-Dichloropropane	330	U
75-27-4	Bromodichloromethane	330	U
10061-01-5	cis-1,3-Dichloropropene	330	U
108-10-1	4-Methyl-2-pentanone	330	U
108-88-3	Toluene	9700	D
10061-02-6	trans-1,3-Dichloropropene	330	U
79-00-5	1,1,2-Trichloroethane	330	U
127-18-4	Tetrachloroethene	330	U
591-78-6	2-Hexanone	330	U
124-48-1	Dibromochloromethane	330	U
106-93-4	1,2-Dibromoethane	330	U
108-90-7	Chlorobenzene	330	U
100-41-4	Ethylbenzene	2600	D

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07BDL

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V6C4753

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	6000	D
95-47-6	o-Xylene	2300	D
1330-20-7	Xylene (Total)	8400	D
100-42-5	Styrene	330	U
75-25-2	Bromoform	330	U
98-82-8	Isopropylbenzene	760	D
79-34-5	1,1,2,2-Tetrachloroethane	330	U
108-67-8	1,3,5-Trimethylbenzene	5100	D
95-63-6	1,2,4-Trimethylbenzene	12000	D
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
96-12-8	1,2-Dibromo-3-chloropropane	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	330	U
79-20-9	Methyl Acetate	330	U
110-81-7	Cyclohexane	4900	D
108-87-2	Methylcyclohexane	1500	D

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1050911DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07BDL

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V6C4753

Level: (low/med) MED Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	8.20	10000	JD
2.		UNKNOWN	8.36	17000	JD
3.		UNKNOWN	8.81	3100	JD
4.		STRAIGHT-CHAIN ALKANE	11.11	16000	JD
5.		CYCLIC ALKANE	11.90	5300	JD
6.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	12.98	9000	NJD
7.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.48	17000	NJD
8.		BRANCHED ALKANE	13.77	5300	JD
9.		UNKNOWN	13.92	12000	JD
10.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.99	20000	NJD
11.		STRAIGHT-CHAIN ALKANE	14.12	12000	JD
12.	1074-55-1	BENZENE, 1-METHYL-4-PROPYL-	14.21	8400	NJD
13.	874-41-9	BENZENE, 1-ETHYL-2,4-DIMETHY	14.34	15000	NJD
14.	1758-88-9	BENZENE, 2-ETHYL-1,4-DIMETHY	14.42	12000	NJD
15.		UNKNOWN	14.57	13000	JD
16.	2050-24-0	BENZENE, 1,3-DIETHYL-5-METHY	14.67	6400	NJD
17.		UNKNOWN	14.76	10000	JD
18.		UNKNOWN	14.82	5300	JD
19.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	14.87	7100	NJD
20.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	14.92	9600	NJD
21.		UNKNOWN	15.00	17000	JD
22.		UNKNOWN	15.19	8400	JD
23.		UNKNOWN	15.33	8900	JD
24.		UNKNOWN	15.40	16000	JD
25.		UNKNOWN	15.49	5700	JD
26.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	15.58	35000	NJD
27.		STRAIGHT-CHAIN ALKANE	16.41	9500	JD
28.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	16.72	7200	NJD
29.	91-57-6	NAPHTHALENE, 2-METHYL-	17.29	5600	NJD
30.	90-12-0	NAPHTHALENE, 1-METHYL-	17.49	5000	NJD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3702

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	5	JB
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	10	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3702

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	2	J
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3702

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	11.35	9	J
2.		STRAIGHT-CHAIN ALKANE	12.81	23	J
3.		UNKNOWN	13.56	12	J
4.		UNKNOWN	13.68	10	J
5.		STRAIGHT-CHAIN ALKANE	14.15	61	J
6.		BRANCHED ALKANE	14.34	23	J
7.		UNKNOWN	14.82	14	J
8.		UNKNOWN	14.85	9	J
9.		UNKNOWN	14.92	15	J
10.	91-20-3	NAPHTHALENE	14.97	27	NJ
11.		UNKNOWN	15.09	49	J
12.		STRAIGHT-CHAIN ALKANE	15.41	77	J
13.	1075-22-5	1H-INDENE, 2,3-DIHYDRO-5,6-D	15.46	10	NJ
14.		UNKNOWN	15.51	10	J
15.		UNKNOWN	15.56	12	J
16.		UNKNOWN	15.65	12	J
17.		UNKNOWN	15.69	15	J
18.		UNKNOWN	15.85	8	J
19.		UNKNOWN	16.00	13	J
20.		UNKNOWN	16.09	14	J
21.		UNKNOWN	16.14	22	J
22.		UNKNOWN	16.24	12	J
23.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	91	NJ
24.		STRAIGHT-CHAIN ALKANE	16.52	74	J
25.	92-52-4	BIPHENYL	17.12	14	NJ
26.	939-27-5	NAPHTHALENE, 2-ETHYL-	17.32	10	NJ
27.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.44	26	NJ
28.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	17.59	23	NJ
29.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	17.63	17	NJ
30.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	17.82	10	NJ

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV106113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3703

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	11	
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV106113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3703

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV106113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3703

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 6 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 22 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		STRAIGHT-CHAIN ALKANE	12.81	13	J
2.		UNKNOWN	13.56	5	J
3.		STRAIGHT-CHAIN ALKANE	14.15	32	J
4.		UNKNOWN	14.34	11	J
5.		UNKNOWN	14.82	6	J
6.		UNKNOWN	14.91	7	J
7.	91-20-3	NAPHTHALENE	14.97	11	NJ
8.		UNKNOWN	15.09	22	J
9.		STRAIGHT-CHAIN ALKANE	15.41	36	J
10.		UNKNOWN	15.56	6	J
11.		UNKNOWN	15.65	6	J
12.		UNKNOWN	15.69	8	J
13.		UNKNOWN	16.00	6	J
14.		UNKNOWN	16.09	6	J
15.		UNKNOWN	16.14	10	J
16.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	36	NJ
17.		STRAIGHT-CHAIN ALKANE	16.52	31	J
18.		UNKNOWN	17.12	6	J
19.	1127-76-0	NAPHTHALENE, 1-ETHYL-	17.32	5	NJ
20.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	17.44	16	NJ
21.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	17.59	14	NJ
22.	571-61-9	NAPHTHALENE, 1,5-DIMETHYL-	17.63	8	NJ
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3894

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	8	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	3	JB
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3894

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3894

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	13	NJB
2.					
3.					
4.					
5.					
6.					
7.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3721

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	10	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	16	B
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	6	J
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3721

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3721

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.57	28	J
2.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.07	10	NJ
3.	91-20-3	NAPHTHALENE	14.97	18	NJ
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3837

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3837

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3837

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3724

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	11	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	21	B
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3724

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3724

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.07	12	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16BRE

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3838

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16BRE

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3838

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1080709RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16BRE

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3838

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3726

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	8	JB
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	13	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3726

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3726

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	7	J
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3729

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	29	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3729

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3729

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	14	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3730

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	33	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	32	B
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3730

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	2	J
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3730

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	9	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3733

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 5 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	39	B
75-15-0	Carbon Disulfide	3	J
75-09-2	Methylene Chloride	17	B
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3733

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 5 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3733

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 5 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.07	12	J
2.		UNKNOWN	2.27	5	J
3.		UNKNOWN	2.91	5	J
4.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.06	3	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3732

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	27	B
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

000123

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3732

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3732

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 12 Date Analyzed: 02/09/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	9	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3727

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	19	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SW1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3727

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SW1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3727

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 8 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	8	J
2.					
3.					
4.					
5.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4874

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

000129

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4874

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4874

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VS1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3718

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	7	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	16	B
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	4	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VS1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3718

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VS1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3718

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: not dec. 9 Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	14.98	6	J
2.					
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2087

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

000150

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2087

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	53	J
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

000154

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2087

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.03	220	J
2.					
3.					
4.					
5.					
6.					
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000155

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2135

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	780	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	780	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	780	U
83-32-9	Acenaphthene	380	U

000156

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2135

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	780	U
100-02-7	4-Nitrophenol	780	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	780	U
534-52-1	4,6-Dinitro-2-methylphenol	780	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	780	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	190	J
129-00-0	Pyrene	210	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	130	J
218-01-9	Chrysene	160	J
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	230	J
207-08-9	Benzo(k)fluoranthene	110	J
50-32-8	Benzo(a)pyrene	140	J
193-39-5	Indeno(1,2,3-cd)pyrene	84	J
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	98	J

(1) - Cannot be separated from Diphenylamine

000157

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2161

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	U
83-32-9	Acenaphthene	370	U

000159

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2135

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	20.96	220	J
2.		UNKNOWN	23.67	300	J
3.		UNKNOWN	29.55	330	J
4.					
5.					
6.					
7.					
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000158

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2161

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	80	J
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	170	J
129-00-0	Pyrene	120	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	92	J
218-01-9	Chrysene	99	J
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	140	J
207-08-9	Benzo(k)fluoranthene	50	J
50-32-8	Benzo(a)pyrene	83	J
193-39-5	Indeno(1,2,3-cd)pyrene	72	J
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	92	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2161

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.60	150	J
2.		UNKNOWN	27.27	210	J
3.		UNKNOWN	27.50	180	J
4.		UNKNOWN	29.52	210	J
5.					
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000161

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2162

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

000162

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2162

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

000163

1F

EPA SAMPLE NO.

FTASS107

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2162

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	27.50	270	J
2.		UNKNOWN	27.57	220	J
3.		UNKNOWN	28.23	260	J
4.					
5.					
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8.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2082

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	810	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	810	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	810	U
83-32-9	Acenaphthene	400	U

000165

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2082

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	810	U
100-02-7	4-Nitrophenol	810	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	810	U
534-52-1	4,6-Dinitro-2-methylphenol	810	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	810	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	400	U
129-00-0	Pyrene	400	U
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	400	U
218-01-9	Chrysene	400	U
117-81-7	bis(2-Ethylhexyl)phthalate	400	U
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	400	U
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	400	U
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U

(1) - Cannot be separated from Diphenylamine

000166

1F

EPA SAMPLE NO.

FTASS108

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2082

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 18 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.95	2300	J
2.		UNKNOWN	27.39	240	J
3.		UNKNOWN	27.54	170	J
4.		UNKNOWN	27.74	170	J
5.	83-47-6	.GAMMA.-SITOSTEROL	28.37	240	NJ
6.		UNKNOWN	29.84	310	J
7.		UNKNOWN	30.07	200	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2163

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2163

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FTASS109

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2163

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	27.23	200	J
2.		UNKNOWN	27.50	210	J
3.		UNKNOWN	28.21	300	J
4.		UNKNOWN	28.88	310	J
5.		UNKNOWN	29.51	550	J
6.		UNKNOWN	29.75	250	J
7.		UNKNOWN	29.91	150	J
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000170

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2074

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

000171

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2074

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	46	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

000172

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2074

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	27.41	250	J
2.		UNKNOWN	28.40	190	J
3.		UNKNOWN	29.20	190	J
4.		UNKNOWN	29.85	250	J
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3553

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U

000174

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3553

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

000175

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3553

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2133

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

000177

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2133

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

000170

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2133

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2134

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	610	
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	1700	
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	700	U
83-32-9	Acenaphthene	340	U

000100

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2134

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	700	U
100-02-7	4-Nitrophenol	700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	700	U
534-52-1	4,6-Dinitro-2-methylphenol	700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	700	U
85-01-8	Phenanthrene	320	J
120-12-7	Anthracene	65	J
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	130	J
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	550	
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

000181

1F

EPA SAMPLE NO.

SV1040911

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2134

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.22	9900	J
2.		UNKNOWN	9.62	13000	J
3.		UNKNOWN	10.57	11000	J
4.		UNKNOWN	11.86	10000	J
5.		UNKNOWN	12.20	9000	J
6.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	13.08	9400	NJ
7.		UNKNOWN	13.12	11000	J
8.		UNKNOWN	13.22	18000	J
9.		UNKNOWN	13.25	20000	J
10.		UNKNOWN	15.63	24000	J
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2088

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	300	J
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	1100	
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

000183

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2088

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	260	J
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	290	J
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	18	J
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	51	J
117-81-7	bis(2-Ethylhexyl)phthalate	520	
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	81	J
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	50	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1050204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2088

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/14/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.11	4900	J
2.	2958-76-1	NAPHTHALENE, DECAHYDRO-2-MET	9.46	7800	NJ
3.		UNKNOWN	11.15	1400	J
4.		UNKNOWN	11.87	410	J
5.		UNKNOWN	12.30	500	J
6.		UNKNOWN	13.27	1000	J
7.		UNKNOWN	15.69	17000	J
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2264

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	3500	U
111-44-4	bis(2-Chloroethyl)Ether	3500	U
95-57-8	2-Chlorophenol	3500	U
541-73-1	1,3-Dichlorobenzene	3500	U
106-46-7	1,4-Dichlorobenzene	3500	U
95-50-1	1,2-Dichlorobenzene	3500	U
95-48-7	2-Methylphenol	3500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	3500	U
106-44-5	4-Methylphenol	3500	U
621-64-7	N-Nitroso-di-n-propylamine	3500	U
67-72-1	Hexachloroethane	3500	U
98-95-3	Nitrobenzene	3500	U
78-59-1	Isophorone	3500	U
88-75-5	2-Nitrophenol	3500	U
105-67-9	2,4-Dimethylphenol	3500	U
120-83-2	2,4-Dichlorophenol	3500	U
120-82-1	1,2,4-Trichlorobenzene	3500	U
91-20-3	Naphthalene	24000	
106-47-8	4-Chloroaniline	3500	U
111-91-1	bis(2-Chloroethoxy)methane	3500	U
87-68-3	Hexachlorobutadiene	3500	U
59-50-7	4-Chloro-3-Methylphenol	3500	U
91-57-6	2-Methylnaphthalene	56000	
77-47-4	Hexachlorocyclopentadiene	3500	U
88-06-2	2,4,6-Trichlorophenol	3500	U
95-95-4	2,4,5-Trichlorophenol	7100	U
91-58-7	2-Chloronaphthalene	3500	U
88-74-4	2-Nitroaniline	7100	U
131-11-3	Dimethylphthalate	3500	U
208-96-8	Acenaphthylene	3500	U
606-20-2	2,6-Dinitrotoluene	3500	U
99-09-2	3-Nitroaniline	7100	U
83-32-9	Acenaphthene	440	J

000186

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2264

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	7100	U
100-02-7	4-Nitrophenol	7100	U
132-64-9	Dibenzofuran	620	J
121-14-2	2,4-Dinitrotoluene	3500	U
84-66-2	Diethylphthalate	3500	U
7005-72-3	4-Chlorophenyl-phenylether	3500	U
86-73-7	Fluorene	1000	J
100-01-6	4-Nitroaniline	7100	U
534-52-1	4,6-Dinitro-2-methylphenol	7100	U
86-30-6	N-Nitrosodiphenylamine (1)	3500	U
101-55-3	4-Bromophenyl-phenylether	3500	U
118-74-1	Hexachlorobenzene	3500	U
87-86-5	Pentachlorophenol	7100	U
85-01-8	Phenanthrene	3900	
120-12-7	Anthracene	3500	U
86-74-8	Carbazole	3500	U
84-74-2	Di-n-butylphthalate	3500	U
206-44-0	Fluoranthene	3500	U
129-00-0	Pyrene	3500	U
85-68-7	Butylbenzylphthalate	3500	U
91-94-1	3,3'-Dichlorobenzidine	3500	U
56-55-3	Benzo(a)anthracene	3500	U
218-01-9	Chrysene	3500	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200	J
117-84-0	Di-n-octylphthalate	3500	U
205-99-2	Benzo(b)fluoranthene	3500	U
207-08-9	Benzo(k)fluoranthene	3500	U
50-32-8	Benzo(a)pyrene	3500	U
193-39-5	Indeno(1,2,3-cd)pyrene	3500	U
53-70-3	Dibenzo(a,h)anthracene	3500	U
191-24-2	Benzo(g,h,i)perylene	3500	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1050911

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2264

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.28	8700	J
2.		UNKNOWN	9.58	8500	J
3.		UNKNOWN	9.66	7900	J
4.		UNKNOWN	10.77	7700	J
5.		UNKNOWN	10.84	6100	J
6.		UNKNOWN	10.94	21000	J
7.	90-12-0	NAPHTHALENE, 1-METHYL-	11.62	8100	NJ
8.		UNKNOWN	11.87	3500	J
9.	582-16-1	NAPHTHALENE, 2,7-DIMETHYL-	12.70	3800	NJ
10.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	12.84	5400	NJ
11.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	13.06	7600	NJ
12.					
13.					
14.					
15.					
16.					
17.					
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30.					

000188

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2050

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

000189

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2050

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1060204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2050

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.79	180	J
2.	123-95-5	OCTADECANOIC ACID, BUTYL EST	21.24	210	NJ
3.		UNKNOWN	23.82	290	J
4.					
5.					
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000191

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1061113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2051

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	700	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	700	U
83-32-9	Acenaphthene	340	U

000192

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1061113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2051

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	700	U
100-02-7	4-Nitrophenol	700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	700	U
534-52-1	4,6-Dinitro-2-methylphenol	700	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	700	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	74	J
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

000193

1F

EPA SAMPLE NO.

SV1061113

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2051

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.82	330	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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28.					
29.					
30.					

000194

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2052

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

000195

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2052

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	77	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

000196

1F

EPA SAMPLE NO.

SV1070204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2052

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.82	210	J
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2053

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

000190

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2053

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	43	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1071113

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2053

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.82	320	J
2.					
3.					
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2054

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

000201

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2054

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	280	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1080204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2054

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.78	220	J
2.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.24	300	NJ
3.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.82	230	NJ
4.		UNKNOWN	30.10	280	J
5.		UNKNOWN	32.54	380	J
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2055

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2055

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1080709

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2055

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.93	320	J
2.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.82	460	NJ
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2056

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	U
83-32-9	Acenaphthene	370	U

000207

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2056

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	67	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

000208

1F

EPA SAMPLE NO.

SV1090204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2056

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.81	220	J
2.					
3.					
4.					
5.					
6.					
7.					
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000209

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2057

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

000210

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2057

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2057

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/24/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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000212

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2075

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2075

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	290	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2075

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.19	150	J
2.		UNKNOWN	23.72	540	J
3.					
4.					
5.					
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000215

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2081

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

000216

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2081

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	100	J
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2081

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.72	400	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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000213

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2077

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

000219

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2077

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	78	J
120-12-7	Anthracene	160	J
86-74-8	Carbazole	65	J
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	53	J
129-00-0	Pyrene	40	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	240	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1110204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2077

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.72	450	J
2.					
3.					
4.					
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000221

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2080

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	690	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	690	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	690	U
83-32-9	Acenaphthene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2080

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	690	U
100-02-7	4-Nitrophenol	690	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	690	U
534-52-1	4,6-Dinitro-2-methylphenol	690	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	690	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

000227

1F

EPA SAMPLE NO.

SV1110810

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2080

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.95	1900	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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000223

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2076

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	750	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	750	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	750	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2076

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	750	U
100-02-7	4-Nitrophenol	750	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	750	U
534-52-1	4,6-Dinitro-2-methylphenol	750	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	750	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	41	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SVDUP2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2076

Level: (low/med) LOW Date Received: 02/05/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/15/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.97	2500	J
2.		UNKNOWN	23.72	460	J
3.					
4.					
5.					
6.					
7.					
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10.					
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30.					

000231

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4466F

% Moisture: 6 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000247

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4469F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

000248

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4432F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000249

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-11A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4435F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

000250

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-14A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4438F

% Moisture: 18 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

000051

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-17A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4447F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000252

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-20A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4450F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000253

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) WATER Lab Sample ID: B0199-28C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E2D4481F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/06/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000254

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1040204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-03A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4467F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000255

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1040911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4468F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000256

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1050204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4470F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

000257

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1050911

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4471F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000258

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1060204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2D4433F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000259

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1061113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-10A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E2D4434F

% Moisture: 6 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000200

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1070204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2D4436F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000961

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1071113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-13A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4437F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000262

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1080204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-15A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4439F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000263

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1080709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-16A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4446F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000264

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1090204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-18A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2D4448F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

000265

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1090709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-19A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4449F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000266

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-21A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E2D4451F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000267

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1100709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-22A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4452F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000268

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1110204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-26A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4454F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

000209

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1110810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-27A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4465F

% Moisture: 5 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

000270

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SVDUP2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: B0199-24A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2D4453F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/05/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/13/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

000271

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		LAB PROJECT #:
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA 15220		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	VOA + MIBE 5 stream encore sample	VOA + MTBE 40z Amber glass	SVOC + PCB 40z Amber glass	TAL Metals + pH 40z Amber glass	TOC + Moisture 8 oz Amber glass	Grain Size 40z Amber glass	TAL Metals + Moisture	COMMENTS
TB-020403	2/4/03 / 0700		X	X			01	2	2								
FTA-SS-104	2/4/03 / 0750		X		X		02	7		3	1*	1*	1*	1*			
FTA-SU-104-0204	2/4/03 / 0803		X		X		03	5		3	1*				1*		
FTA-SU-104-0911	2/4/03 / 0818		X		X		04	5		3	1				1		
FTA-SS-105	2/4/03 / 0835		X		X		05	7		3	1	1	1	1			
FTA-SU-105-0204	2/4/03 / 0848		X		X		06	5		3	1				1		
FTA-SU-105-0911	2/4/03 / 0858		X		X		07	5		3	1				1		
FTA-SS-106	2/4/03 / 0910		X		X		08	7		3	1	1	1	1			
FTA-SU-106-0204	2/4/03 / 0925		X		X		09	5		3	1				1		
FTA-SU-106-1113	2/4/03 / 0938		X		X		10	5		3	1				1		
FTA-SS-107-	2/4/03 / 1005		X		X		11	7		3	1	1	1	1			
FTA-SU-107-0204	2/4/03 / 1020		X		X		12	5		3	1				1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		2/4/03 / 1700		2-5-03 / 0900	Shipped via FED EX 8286 8470 7122	10
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME: /	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661-Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Sysum Encore samplr	VOC+MTBE 40z Amber glass	SVOC+PCB 40z Amber glass	TAL Metals 40z Amber glass	TAL Metals 40z Amber glass	TOC 40z Amber glass	% Moisture 40z Amber glass	Grain Size	COMMENTS
FTA-SU-107-1113	2/4/03 / 1030		X		X		13	5	3	1	1						
FTA-SS-108	2/4/03 / 1045		X		X		14	3	3	1		1	1	1			
FTA-SU-108-0204	2/4/03 / 1057		X		X		15	5	3	1	1						
FTA-SU-108-0709	2/4/03 / 1110		X		X		16	5	3	1	1						
FTA-SS-109	2/4/03 / 1122		X		X		17	3	3	1		1	1	1			
FTA-SU-109-0204	2/4/03 / 1134		X		X		18	5	3	1	1						
FTA-SU-109-0709	2/4/03 / 1145		X		X		19	5	3	1	1						
FTA-SS-110	2/4/03 / 1220		X		X		20	3	3	1		1	1	1			
FTA-SU-110-0204	2/4/03 / 1250		X		X		21	5	3	1	1						
FTA-SU-110-0709	2/4/03 / 1305		X		X		22	5	3	1	1						
FTA-SS-Dup 1	2/4/03 / 1225		X		X		23	6	3			1	1	1			
FTA-SU-Dup 2	2/4/03 / 1255		X		X		24	5	3	1	1						

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/4/03 / 1700	[signature]	2-5-03 / 0900	Shipped via Fed Ex 8286 8470 7122	10
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
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Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Sarum Encore sampler	VOC + MTBE 40z Amber Glass	SVOC + PCB 40z Amber Glass	TAL Metals + Pit 40z Amber Glass	TCL s/p moisture 40z Amber Glass	TAL Metals s/p moisture 40ml VOA Vial HCl	VOC MTBE 1 Liter Amber Glass	SVOC 1 Liter Amber Glass	PCB 500ml poly HNO3	TAL Metals 8oz Amber Glass Wide Size	COMMENTS
FTA-SS-111	2/4/03 1315		X		X		25		9	3	2	2					1		DO MS/MSD
FTA-SU-111-0204	2/4/03 1340		X		X		26		9	2			2						DO MS/MSD
FTA-SU-111-0810	2/4/03 1355		X		X		27		3	1			1						
RB-020403	2/4/03 1600		X	X			28							2	2	2	1		
	/																		
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		2/4/03 1700		2-5-03 0900	Shipped via Fed Ex 8286 8470 7122	10
		/		/		
		/		/		

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SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and twenty-six soil samples that were collected on February 4, 2003, and received at Mitkem on February 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples FTASS111MS and SV1080709 and high recovery of bromofluorobenzene in samples SV1040911, SV1050204 and SV1050911. Sample SV1080911 was re-analyzed with 1,2-dichloroethane-d4 with QC limits and low recovery of bromofluorobenzene. Samples SV1040911, SV1050204 and SV1050911 were re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of bromomethane inV6XLCS and high recovery of vinyl chloride, bromomethane, chloroethane and trichlorofluoromethane in V6ELCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on samples FTASS111 and SV1110204. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate for sample FTASS111 and SV1110204. Replicate RPDs were within the QC limits with the exception of methylene chloride for sample FTASS111.

Sample analysis: samples SV1040911, SV1050204 and SV1050911 were initially analyzed at low level, but due to high concentration of target analytes, were re-analyzed at dilution by medium level. Internal standard area counts were within the QC criteria with the exception of sample SV1050204, FTASS110, FTASSDUP1 and SV1080709RE. Sample SV1050204 was re-analyzed at dilution with all internal standard area counts within QC criteria. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine in S1CLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to high concentration of target analytes, sample SV1050911 was re-analyzed at 10x dilution. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a low reporting limit. These samples were extracted with samples requiring a lower reporting limit. No other unusual observation was made for the analysis.

5. Metals Analysis (SDG A):

Due to the large number of samples, metals results are arranged into two Sample Delivery Groups, SDG B0199A and B0199B. Each SDG includes a matrix spike/duplicate analysis. Results are qualified where necessary for those samples associated with each spike/duplicate. Raw analysis data for both SDGs follow Form 14 for SDG B0220B.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTASS111. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimonywith spike recovery within QC limits.\.

Matrix duplicate: matrix duplicate was performed on sample FTASS111. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. Metals Analysis (SDG B):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on samples SV1110204 and RB020403. Spike recoveries were within the QC limits. The mercury spike and %Recovery are incorrect on Form 5's due to the software. The mercury spike added and %Recovery were manually corrected.

Matrix duplicate: matrix duplicate was performed on samples SV1110204 and RB020403. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: V5B0207A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3683

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/07/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: V5B0208A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3713

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/08/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	12	
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

000371

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0187

Instrument ID: V6 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) N Calibration Time(s): 1547 1810

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C4722 RRF20 =V6C4726
RRF50 =V6C4721 RRF100=V6C4725 RRF200=V6C4724

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.202	0.242	0.238	0.222	0.212	0.223	7.5
Chloromethane	*	0.390	0.411	0.443	0.379	0.379	0.400	6.8*
Vinyl Chloride		0.400	0.431	0.436	0.398	0.397	0.412	4.7
Bromomethane		0.164	0.211	0.282	0.194	0.260	0.222	21.7
Chloroethane		0.227	0.241	0.261	0.232	0.225	0.237	6.1
Trichlorofluoromethane		0.391	0.465	0.490	0.456	0.459	0.452	8.1
1,1-Dichloroethene		0.372	0.358	0.374	0.366	0.364	0.367	1.8
Acetone		0.114	0.064	0.077	0.057	0.057	0.074	32.2
Carbon Disulfide		0.734	0.770	0.696	0.738	0.716	0.731	3.8
Methylene Chloride		0.285	0.258	0.282	0.267	0.262	0.271	4.4
trans-1,2-Dichloroethene		0.256	0.258	0.285	0.294	0.291	0.277	6.7
Methyl tert-butyl ether		0.598	0.644	0.687	0.657	0.647	0.647	5.0
1,1-Dichloroethane	*	0.442	0.445	0.462	0.486	0.482	0.463	4.4*
2-Butanone		0.098	0.084	0.102	0.083	0.091	0.092	9.1
cis-1,2-Dichloroethene		0.253	0.274	0.291	0.305	0.301	0.285	7.5
Chloroform		0.448	0.440	0.472	0.473	0.461	0.459	3.2
1,1,1-Trichloroethane		0.329	0.318	0.326	0.341	0.336	0.330	2.6
Carbon Tetrachloride		0.300	0.303	0.316	0.336	0.342	0.319	5.9
1,2-Dichloroethane		0.338	0.339	0.363	0.356	0.357	0.351	3.2
Benzene		1.050	1.096	1.171	1.178	1.153	1.130	4.9
Trichloroethene		0.252	0.258	0.276	0.292	0.294	0.274	7.0
1,2-Dichloropropane		0.254	0.268	0.293	0.298	0.303	0.283	7.4
Bromodichloromethane		0.323	0.334	0.351	0.363	0.365	0.347	5.2
cis-1,3-Dichloropropene		0.362	0.400	0.447	0.470	0.480	0.432	11.5
4-Methyl-2-pentanone		0.125	0.160	0.195	0.178	0.192	0.170	16.9
Toluene		1.072	1.154	1.252	1.259	1.212	1.190	6.6
trans-1,3-Dichloropropene		0.316	0.344	0.404	0.419	0.425	0.382	12.8
1,1,2-Trichloroethane		0.205	0.207	0.244	0.239	0.245	0.228	8.9
Tetrachloroethene		0.255	0.263	0.276	0.289	0.282	0.273	5.1
2-Hexanone		0.113	0.129	0.167	0.149	0.154	0.142	14.9
Dibromochloromethane		0.301	0.296	0.328	0.322	0.320	0.313	4.5
1,2-Dibromoethane		0.276	0.276	0.306	0.293	0.294	0.289	4.6
Chlorobenzene	*	1.050	1.047	1.058	1.064	0.986	1.041	3.0*
Ethylbenzene		0.490	0.551	0.586	0.597	0.574	0.560	7.6
m,p-Xylene		0.616	0.676	0.724	0.747	0.712	0.695	7.3
o-Xylene		0.558	0.636	0.701	0.741	0.728	0.673	11.3
Xylene (Total)		0.596	0.663	0.716	0.745	0.717	0.687	8.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Instrument ID: V5 Calibration Date: 02/08/03 Time: 1508

Lab File ID: V5E3711 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.277	0.250	0.01	9.7	20.0	
Chloromethane	0.449	0.375	0.1	16.5	20.0	
Vinyl Chloride	0.410	0.356	0.01	13.2	20.0	
Bromomethane	0.235	0.228	0.01	3.0	20.0	
Chloroethane	0.206	0.186	0.01	9.7	20.0	
Trichlorofluoromethane	0.337	0.319	0.01	5.3	20.0	
1,1-Dichloroethene	0.288	0.266	0.01	7.6	20.0	
Acetone	0.119	0.084	0.01	29.4	20.0	<-
Carbon Disulfide	0.803	0.726	0.01	9.6	20.0	
Methylene Chloride	0.384	0.398	0.01	3.6	20.0	
trans-1,2-Dichloroethene	0.299	0.288	0.01	3.7	20.0	
Methyl tert-butyl ether	0.846	0.880	0.01	4.0	20.0	
1,1-Dichloroethane	0.591	0.542	0.1	8.3	20.0	
2-Butanone	0.172	0.150	0.01	12.8	20.0	
cis-1,2-Dichloroethene	0.316	0.307	0.01	2.8	20.0	
Chloroform	0.521	0.500	0.01	4.0	20.0	
1,1,1-Trichloroethane	0.352	0.318	0.01	9.6	20.0	
Carbon Tetrachloride	0.338	0.320	0.01	5.3	20.0	
1,2-Dichloroethane	0.389	0.352	0.01	9.5	20.0	
Benzene	1.241	1.206	0.01	2.8	20.0	
Trichloroethene	0.319	0.331	0.01	3.8	20.0	
1,2-Dichloropropane	0.336	0.314	0.01	6.5	20.0	
Bromodichloromethane	0.391	0.378	0.01	3.3	20.0	
cis-1,3-Dichloropropene	0.519	0.516	0.01	0.6	20.0	
4-Methyl-2-pentanone	0.335	0.307	0.01	8.4	20.0	
Toluene	1.206	1.190	0.01	1.3	20.0	
trans-1,3-Dichloropropene	0.466	0.456	0.01	2.1	20.0	
1,1,2-Trichloroethane	0.261	0.252	0.01	3.4	20.0	
Tetrachloroethene	0.322	0.318	0.01	1.2	20.0	
2-Hexanone	0.297	0.290	0.01	2.4	20.0	
Dibromochloromethane	0.408	0.412	0.01	1.0	20.0	
1,2-Dibromoethane	0.371	0.364	0.01	1.9	20.0	
Chlorobenzene	1.071	1.035	0.3	3.4	20.0	
Ethylbenzene	0.530	0.526	0.01	0.8	20.0	
Xylene (Total)	0.652	0.649	0.01	0.5	20.0	
Styrene	1.100	1.111	0.01	1.0	20.0	
Bromoform	0.280	0.287	0.1	2.5	20.0	

000778

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Instrument ID: V6 Calibration Date: 02/14/03 Time: 0907

Lab File ID: V6C4861 Init. Calib. Date(s): 02/12/03 02/12/03

Heated Purge: (Y/N) N Init. Calib. Times: 1321 1520

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.300	0.269	0.01	10.3	20.0	
Chloromethane	0.593	0.433	0.1	27.0	20.0	<-
Vinyl Chloride	0.584	0.568	0.01	2.7	20.0	
Bromomethane	0.436	0.355	0.01	18.6	20.0	
Chloroethane	0.351	0.373	0.01	6.3	20.0	
Trichlorofluoromethane	0.754	0.657	0.01	12.9	20.0	
1,1-Dichloroethene	0.556	0.487	0.01	12.4	20.0	
Acetone	0.117	0.158	0.01	35.0	20.0	<-
Carbon Disulfide	0.828	0.724	0.01	12.6	20.0	
Methylene Chloride	0.273	0.281	0.01	2.9	20.0	
trans-1,2-Dichloroethene	0.282	0.261	0.01	7.4	20.0	
Methyl tert-butyl ether	0.778	0.838	0.01	7.7	20.0	
1,1-Dichloroethane	0.485	0.478	0.1	1.4	20.0	
2-Butanone	0.097	0.112	0.01	15.5	20.0	
cis-1,2-Dichloroethene	0.292	0.286	0.01	2.0	20.0	
Chloroform	0.507	0.506	0.01	0.2	20.0	
1,1,1-Trichloroethane	0.423	0.364	0.01	13.9	20.0	
Carbon Tetrachloride	0.445	0.355	0.01	20.2	20.0	<-
1,2-Dichloroethane	0.426	0.444	0.01	4.2	20.0	
Benzene	1.042	1.038	0.01	0.4	20.0	
Trichloroethene	0.303	0.281	0.01	7.3	20.0	
1,2-Dichloropropane	0.274	0.285	0.01	4.0	20.0	
Bromodichloromethane	0.393	0.406	0.01	3.3	20.0	
cis-1,3-Dichloropropene	0.457	0.469	0.01	2.6	20.0	
4-Methyl-2-pentanone	0.194	0.218	0.01	12.4	20.0	
Toluene	1.128	1.111	0.01	1.5	20.0	
trans-1,3-Dichloropropene	0.421	0.440	0.01	4.5	20.0	
1,1,2-Trichloroethane	0.215	0.233	0.01	8.4	20.0	
Tetrachloroethene	0.314	0.260	0.01	17.2	20.0	
2-Hexanone	0.157	0.166	0.01	5.7	20.0	
Dibromochloromethane	0.358	0.370	0.01	3.4	20.0	
1,2-Dibromoethane	0.275	0.292	0.01	6.2	20.0	
Chlorobenzene	0.955	0.961	0.3	0.6	20.0	
Ethylbenzene	0.523	0.479	0.01	8.4	20.0	
m,p-Xylene	0.659	0.606	0.01	8.0	20.0	
o-Xylene	0.667	0.622	0.01	6.7	20.0	
Xylene (Total)	0.662	0.611	0.01	7.7	20.0	

000786

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5L	100	102	104	95	0
02	V5LLCS	95	98	100	97	0
03	V5LLCSD	98	102	101	100	0
04	FTASS104	104	117	110	80	0
05	SV1040204	101	112	98	92	0
06	SV1040911	105	116	112	301*	1
07	FTASS105	100	114	106	88	0
08	SV1050204	106	120	118	368*	1
09	SV1050911	111	125	141	182*	1
10	SV1060204	99	114	97	100	0
11	SV106113	99	112	97	100	0
12	FTASS107	100	112	108	86	0
13	VBLK5M	95	104	98	97	0
14	V5MLCS	100	105	103	103	0
15	FTASS111	104	116	107	92	0
16	FTASS111MSD	107	124	111	94	0
17	VS1110204	99	112	94	96	0
18	VS1110204MS	106	118	100	106	0
19	VS1110204MSD	106	120	101	106	0
20	SV1071113	105	122	103	103	0
21	SV1080709	113	130*	105	106	1
22	SV1090204	97	106	96	94	0
23	SW1090709	100	114	96	96	0
24	FTASS110	105	122	102	83	0
25	SV1100204	101	117	95	95	0
26	SV1100709	102	120	94	93	0
27	FTASSDUP1	107	124	106	86	0
28	SVDUP2	105	118	100	99	0
29	SV1110810	103	118	96	96	0
30	VBLK5T	95	104	99	112	0

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

000301

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Lab File ID (Standard): V5E3681 Date Analyzed: 02/07/03

Instrument ID: V5 Time Analyzed: 1551

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	888545	6.25	677117	9.47	346671	12.22
	UPPER LIMIT	1777090	6.75	1354234	9.97	693342	12.72
	LOWER LIMIT	444273	5.75	338559	8.97	173336	11.72
	EPA SAMPLE NO.						
01	VBLK5L	932952	6.26	710399	9.47	303802	12.21
02	V5LLCS	891640	6.25	674333	9.47	344330	12.22
03	V5LLCSD	889207	6.25	686940	9.47	345493	12.22
04	FTASS104	1048691	6.26	706537	9.48	205913	12.21
05	SV1040204	1126785	6.25	880938	9.47	341418	12.22
06	SV1040911	994395	6.25	611131	9.47	361694	12.22
07	FTASS105	969663	6.25	682555	9.47	258289	12.21
08	SV1050204	877167	6.25	480898	9.47	93163*	12.23
09	SV1050911	959550	6.25	589922	9.47	244997	12.23
10	SV1060204	1065953	6.25	860830	9.47	442269	12.21
11	SV106113	1174144	6.25	935477	9.47	480725	12.21
12	FTASS107	1078261	6.25	745363	9.47	267514	12.21
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Lab File ID (Standard): V5E3711 Date Analyzed: 02/08/03

Instrument ID: V5 Time Analyzed: 1508

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	832745	6.25	658677	9.47	367955	12.22
	UPPER LIMIT	1665490	6.75	1317354	9.97	735910	12.72
	LOWER LIMIT	416373	5.75	329339	8.97	183978	11.72
	EPA SAMPLE NO.						
01	VBLK5M	831845	6.26	661805	9.48	329374	12.21
02	V5MLCS	764299	6.25	591927	9.47	318856	12.22
03	FTASS111	731496	6.25	538899	9.47	215810	12.22
04	FTASS111MSD	661550	6.26	465311	9.48	198789	12.21
05	VS1110204	780495	6.25	647280	9.47	329878	12.22
06	VS1110204MS	691261	6.25	569552	9.47	325771	12.22
07	VS1110204MSD	689233	6.26	553152	9.48	309183	12.21
08	SV1071113	757886	6.25	615190	9.47	309660	12.22
09	SV1080709	692541	6.25	565055	9.48	265731	12.21
10	SV1090204	698473	6.25	559292	9.47	269838	12.22
11	SW1090709	811901	6.25	648809	9.47	304987	12.22
12	FTASS110	667172	6.25	467332	9.47	161139*	12.22
13	SV1100204	702734	6.25	575388	9.47	267450	12.22
14	SV1100709	594528	6.25	482040	9.47	216173	12.22
15	FTASSDUP1	655859	6.26	470856	9.48	161910*	12.21
16	SVDUP2	736129	6.25	587671	9.47	272019	12.22
17	SV1110810	754280	6.25	609644	9.47	280543	12.22
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: FTASS111 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	61	0.0	60	98	58-131
Chloromethane	61	0.0	58	95	63-120
Vinyl Chloride	61	0.0	60	98	61-134
Bromomethane	61	0.0	61	100	10-215
Chloroethane	61	0.0	62	102	55-146
Trichlorofluoromethane	61	0.0	63	103	63-126
1,1-Dichloroethene	61	0.0	60	98	67-127
Acetone	61	12	80	111	0-154
Carbon Disulfide	61	0.0	62	102	63-126
Methylene Chloride	61	28	72	72	62-128
trans-1,2-Dichloroethen	61	0.0	61	100	76-120
Methyl tert-butyl ether	61	0.0	80	131*	52-130
1,1-Dichloroethane	61	0.0	60	98	74-118
2-Butanone	61	0.0	95	156*	14-154
cis-1,2-Dichloroethene	61	0.0	61	100	83-115
Chloroform	61	0.0	62	102	77-120
1,1,1-Trichloroethane	61	0.0	58	95	72-126
Carbon Tetrachloride	61	0.0	59	97	69-135
1,2-Dichloroethane	61	0.0	63	103	65-126
Benzene	61	0.0	61	100	78-121
Trichloroethene	61	0.0	61	100	75-125
1,2-Dichloropropane	61	0.0	61	100	78-117
Bromodichloromethane	61	0.0	61	100	75-118
cis-1,3-Dichloropropene	61	0.0	62	102	78-120
4-Methyl-2-pentanone	61	0.0	88	144*	45-141
Toluene	61	0.0	59	97	80-126
trans-1,3-Dichloroprope	61	0.0	62	102	73-123
1,1,2-Trichloroethane	61	0.0	67	110	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000309

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: FTASS111 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	61	0.0	60	98	65-134
2-Hexanone	61	4	93	146*	37-136
Dibromochloromethane	61	0.0	71	116*	76-115
1,2-Dibromoethane	61	0.0	76	124*	72-117
Chlorobenzene	61	0.0	60	98	78-117
Ethylbenzene	61	0.0	60	98	79-129
Xylene (Total)	180	0.0	180	100	83-125
Styrene	61	0.0	50	82*	83-122
Bromoform	61	0.0	73	120	67-126
Isopropylbenzene	61	0.0	55	90	80-135
1,1,2,2-Tetrachloroetha	61	0.0	88	144*	70-117
1,3,5-Trimethylbenzene	61	0.0	60	98	72-133
1,2,4-Trimethylbenzene	61	0.0	61	100	73-126
1,3-Dichlorobenzene	61	0.0	60	98	75-115
1,4-Dichlorobenzene	61	0.0	60	98	72-110
1,2-Dichlorobenzene	61	0.0	60	98	78-113
1,2-Dibromo-3-chloropro	61	0.0	86	141*	52-128
1,2,4-Trichlorobenzene	61	0.0	35	57	49-126
1,1,2-Trichlo-1,2,2-tri	61	0.0	59	97	70-130
Methyl Acetate	61	0.0	69	113	70-130
Cyclohexane	61	0.0	55	90	70-130
Methylcyclohexane	61	0.0	50	82	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000210

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: FTASS111 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	60	62	103	5	40	58-131
Chloromethane	60	59	98	3	40	63-120
Vinyl Chloride	60	61	102	4	40	61-134
Bromomethane	60	65	108	8	40	10-215
Chloroethane	60	62	103	1	40	55-146
Trichlorofluoromethane	60	60	100	3	40	63-126
1,1-Dichloroethene	60	61	102	4	40	67-127
Acetone	60	83	118	6	40	0-154
Carbon Disulfide	60	58	97	5	40	63-126
Methylene Chloride	60	94	110	42*	40	62-128
trans-1,2-Dichloroethen	60	62	103	3	40	76-120
Methyl tert-butyl ether	60	82	137*	4	40	52-130
1,1-Dichloroethane	60	60	100	2	40	74-118
2-Butanone	60	94	157*	1	40	14-154
cis-1,2-Dichloroethene	60	63	105	5	40	83-115
Chloroform	60	63	105	3	40	77-120
1,1,1-Trichloroethane	60	58	97	2	40	72-126
Carbon Tetrachloride	60	58	97	0	40	69-135
1,2-Dichloroethane	60	65	108	5	40	65-126
Benzene	60	62	103	3	40	78-121
Trichloroethene	60	62	103	3	40	75-125
1,2-Dichloropropane	60	62	103	3	40	78-117
Bromodichloromethane	60	64	107	7	40	75-118
cis-1,3-Dichloropropene	60	64	107	5	40	78-120
4-Methyl-2-pentanone	60	100	167*	15	40	45-141
Toluene	60	59	98	1	40	80-126
trans-1,3-Dichloroprope	60	65	108	6	40	73-123
1,1,2-Trichloroethane	60	70	117	6	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000311

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: FTASS111 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	60	59	98	0	40	65-134
2-Hexanone	60	120	193*	28	40	37-136
Dibromochloromethane	60	76	127*	9	40	76-115
1,2-Dibromoethane	60	81	135*	8	40	72-117
Chlorobenzene	60	61	102	4	40	78-117
Ethylbenzene	60	60	100	2	40	79-129
Xylene (Total)	180	180	100	0	40	83-125
Styrene	60	47	78*	5	40	83-122
Bromoform	60	81	135*	12	40	67-126
Isopropylbenzene	60	52	87	3	40	80-135
1,1,2,2-Tetrachloroetha	60	98	163*	12	40	70-117
1,3,5-Trimethylbenzene	60	59	98	0	40	72-133
1,2,4-Trimethylbenzene	60	60	100	0	40	73-126
1,3-Dichlorobenzene	60	60	100	2	40	75-115
1,4-Dichlorobenzene	60	61	102	4	40	72-110
1,2-Dichlorobenzene	60	62	103	5	40	78-113
1,2-Dibromo-3-chloropro	60	110	183*	26	40	52-128
1,2,4-Trichlorobenzene	60	41	68	18	40	49-126
1,1,2-Trichlo-1,2,2-tri	60	53	88	10	40	70-130
Methyl Acetate	60	80	133*	16	40	70-130
Cyclohexane	60	50	83	8	40	70-130
Methylcyclohexane	60	45	75	9	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 50 outside limits
Spike Recovery: 20 out of 100 outside limits

COMMENTS: _____

000312

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: VS1110204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	49	0.0	50	102	58-131
Chloromethane	49	0.0	46	94	63-120
Vinyl Chloride	49	0.0	47	96	61-134
Bromomethane	49	0.0	51	104	10-215
Chloroethane	49	0.0	50	102	55-146
Trichlorofluoromethane	49	0.0	49	100	63-126
1,1-Dichloroethene	49	0.0	49	100	67-127
Acetone	49	7	57	102	0-154
Carbon Disulfide	49	0.0	50	102	63-126
Methylene Chloride	49	16	73	116	62-128
trans-1,2-Dichloroethen	49	0.0	50	102	76-120
Methyl tert-butyl ether	49	0.0	64	131*	52-130
1,1-Dichloroethane	49	0.0	48	98	74-118
2-Butanone	49	0.0	70	143	14-154
cis-1,2-Dichloroethene	49	0.0	52	106	83-115
Chloroform	49	0.0	50	102	77-120
1,1,1-Trichloroethane	49	0.0	48	98	72-126
Carbon Tetrachloride	49	0.0	49	100	69-135
1,2-Dichloroethane	49	0.0	52	106	65-126
Benzene	49	0.0	51	104	78-121
Trichloroethene	49	0.0	53	108	75-125
1,2-Dichloropropane	49	0.0	50	102	78-117
Bromodichloromethane	49	0.0	52	106	75-118
cis-1,3-Dichloropropene	49	0.0	53	108	78-120
4-Methyl-2-pentanone	49	0.0	77	157*	45-141
Toluene	49	0.0	50	102	80-126
trans-1,3-Dichloroprope	49	0.0	54	110	73-123
1,1,2-Trichloroethane	49	0.0	58	118	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000313

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: VS1110204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	49	0.0	48	98	65-134
2-Hexanone	49	4	75	145*	37-136
Dibromochloromethane	49	0.0	56	114	76-115
1,2-Dibromoethane	49	0.0	59	120*	72-117
Chlorobenzene	49	0.0	49	100	78-117
Ethylbenzene	49	0.0	49	100	79-129
Xylene (Total)	150	0.0	150	100	83-125
Styrene	49	0.0	43	88	83-122
Bromoform	49	0.0	64	131*	67-126
Isopropylbenzene	49	0.0	49	100	80-135
1,1,2,2-Tetrachloroetha	49	0.0	58	118*	70-117
1,3,5-Trimethylbenzene	49	0.0	45	92	72-133
1,2,4-Trimethylbenzene	49	0.0	46	94	73-126
1,3-Dichlorobenzene	49	0.0	49	100	75-115
1,4-Dichlorobenzene	49	0.0	49	100	72-110
1,2-Dichlorobenzene	49	0.0	53	108	78-113
1,2-Dibromo-3-chloropro	49	0.0	70	143*	52-128
1,2,4-Trichlorobenzene	49	0.0	58	118	49-126
1,1,2-Trichlo-1,2,2-tri	49	0.0	47	96	70-130
Methyl Acetate	49	0.0	51	104	70-130
Cyclohexane	49	0.0	48	98	70-130
Methylcyclohexane	49	0.0	52	106	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000014

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: VS1110204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	55	52	94	8	40	58-131
Chloromethane	55	48	87	8	40	63-120
Vinyl Chloride	55	50	91	5	40	61-134
Bromomethane	55	56	102	2	40	10-215
Chloroethane	55	53	96	6	40	55-146
Trichlorofluoromethane	55	54	98	2	40	63-126
1,1-Dichloroethene	55	53	96	4	40	67-127
Acetone	55	65	105	3	40	0-154
Carbon Disulfide	55	52	94	8	40	63-126
Methylene Chloride	55	79	114	2	40	62-128
trans-1,2-Dichloroethen	55	55	100	2	40	76-120
Methyl tert-butyl ether	55	70	127	3	40	52-130
1,1-Dichloroethane	55	53	96	2	40	74-118
2-Butanone	55	79	144	1	40	14-154
cis-1,2-Dichloroethene	55	57	104	2	40	83-115
Chloroform	55	56	102	0	40	77-120
1,1,1-Trichloroethane	55	52	94	4	40	72-126
Carbon Tetrachloride	55	54	98	2	40	69-135
1,2-Dichloroethane	55	59	107	1	40	65-126
Benzene	55	56	102	2	40	78-121
Trichloroethene	55	59	107	1	40	75-125
1,2-Dichloropropane	55	55	100	2	40	78-117
Bromodichloromethane	55	58	105	1	40	75-118
cis-1,3-Dichloropropene	55	59	107	1	40	78-120
4-Methyl-2-pentanone	55	89	162*	3	40	45-141
Toluene	55	56	102	0	40	80-126
trans-1,3-Dichloroprope	55	61	111	1	40	73-123
1,1,2-Trichloroethane	55	65	118	0	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000315

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - EPA Sample No.: VS1110204 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	55	55	100	2	40	65-134
2-Hexanone	55	93	162*	11	40	37-136
Dibromochloromethane	55	64	116*	2	40	76-115
1,2-Dibromoethane	55	68	124*	3	40	72-117
Chlorobenzene	55	56	102	2	40	78-117
Ethylbenzene	55	55	100	0	40	79-129
Xylene (Total)	160	170	106	6	40	83-125
Styrene	55	54	98	11	40	83-122
Bromoform	55	72	131*	0	40	67-126
Isopropylbenzene	55	55	100	0	40	80-135
1,1,2,2-Tetrachloroetha	55	68	124*	5	40	70-117
1,3,5-Trimethylbenzene	55	52	94	2	40	72-133
1,2,4-Trimethylbenzene	55	53	96	2	40	73-126
1,3-Dichlorobenzene	55	56	102	2	40	75-115
1,4-Dichlorobenzene	55	56	102	2	40	72-110
1,2-Dichlorobenzene	55	59	107	1	40	78-113
1,2-Dibromo-3-chloropro	55	79	144*	1	40	52-128
1,2,4-Trichlorobenzene	55	64	116	2	40	49-126
1,1,2-Trichlo-1,2,2-tri	55	53	96	0	40	70-130
Methyl Acetate	55	55	100	4	40	70-130
Cyclohexane	55	52	94	4	40	70-130
Methylcyclohexane	55	56	102	4	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 14 out of 100 outside limits

COMMENTS: _____

000316

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - Sample No.: V6ELCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		52	104	48-135
Chloromethane	50		58	116	60-118
Vinyl Chloride	50		57	114*	65-113
Bromomethane	50		67	134*	73-122
Chloroethane	50		64	128*	72-118
Trichlorofluoromethane	50		69	138*	68-129
1,1-Dichloroethene	50		50	100	67-121
Acetone	50		54	108	38-161
Carbon Disulfide	50		46	92	53-137
Methylene Chloride	50		51	102	59-132
trans-1,2-Dichloroethen	50		49	98	71-124
Methyl tert-butyl ether	50		52	104	75-123
1,1-Dichloroethane	50		52	104	83-116
2-Butanone	50		49	98	64-139
cis-1,2-Dichloroethene	50		50	100	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		49	98	81-122
Carbon Tetrachloride	50		47	94	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		49	98	77-121
1,2-Dichloropropane	50		51	102	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		51	102	78-119
4-Methyl-2-pentanone	50		49	98	57-138
Toluene	50		52	104	81-121
trans-1,3-Dichloroprope	50		50	100	85-118
1,1,2-Trichloroethane	50		50	100	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000027

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - Sample No.: V6XLCS Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	2500		2600	104	48-135
Chloromethane	2500		2800	112	60-118
Vinyl Chloride	2500		2700	108	65-113
Bromomethane	2500		3200	128*	73-122
Chloroethane	2500		2800	112	72-118
Trichlorofluoromethane	2500		2600	104	68-129
1,1-Dichloroethene	2500		2600	104	67-121
Acetone	2500		2300	92	38-161
Carbon Disulfide	2500		2700	108	53-137
Methylene Chloride	2500		2700	108	59-132
trans-1,2-Dichloroethen	2500		2700	108	71-124
Methyl tert-butyl ether	2500		2800	112	75-123
1,1-Dichloroethane	2500		2700	108	83-116
2-Butanone	2500		2500	100	64-139
cis-1,2-Dichloroethene	2500		2700	108	83-120
Chloroform	2500		2800	112	89-118
1,1,1-Trichloroethane	2500		2800	112	81-122
Carbon Tetrachloride	2500		2600	104	79-125
1,2-Dichloroethane	2500		2800	112	83-123
Benzene	2500		2800	112	81-120
Trichloroethene	2500		2600	104	77-121
1,2-Dichloropropane	2500		2800	112	81-116
Bromodichloromethane	2500		2700	108	90-114
cis-1,3-Dichloropropene	2500		2800	112	78-119
4-Methyl-2-pentanone	2500		2700	108	57-138
Toluene	2500		2800	112	81-121
trans-1,3-Dichloroprope	2500		2700	108	85-118
1,1,2-Trichloroethane	2500		2600	104	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000029

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Instrument ID: S2 Calibration Date: 02/28/03 Time: 1629

Lab File ID: S2D2157 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.683	0.050	7.4	100
4-Chlorophenyl-phenylether	0.824	0.818	0.050	-0.7	100
Fluorene	1.481	1.470	0.050	-0.7	100
4-Nitroaniline	0.222	0.341	0.050	53.6	100
4,6-Dinitro-2-methylphenol	0.167	0.179	0.050	7.2	100
N-Nitrosodiphenylamine(1)	0.520	0.508	0.050	-2.3	20.0
4-Bromophenyl-phenylether	0.319	0.303	0.050	-5.0	100
Hexachlorobenzene	0.351	0.343	0.050	-2.3	100
Pentachlorophenol	0.129	0.143	0.050	10.8	20.0
Phenanthrene	1.129	1.075	0.050	-4.8	100
Anthracene	1.095	1.072	0.050	-2.1	100
Carbazole	0.603	0.852	0.050	41.3	100
Di-n-butylphthalate	1.425	1.434	0.050	0.6	100
Fluoranthene	1.243	1.354	0.050	8.9	20.0
Pyrene	1.169	1.049	0.050	-10.3	100
Butylbenzylphthalate	0.521	0.470	0.050	-9.8	100
3,3'-Dichlorobenzidine	0.408	0.474	0.050	16.2	100
Benzo(a)anthracene	1.152	1.130	0.050	-1.9	100
Chrysene	0.976	0.992	0.050	1.6	100
bis(2-Ethylhexyl)phthalate	0.732	0.668	0.050	-8.7	100
Di-n-octylphthalate	2.243	1.906	0.050	-15.0	20.0
Benzo(b)fluoranthene	1.833	1.817	0.050	-0.9	100
Benzo(k)fluoranthene	1.640	1.625	0.050	-0.9	100
Benzo(a)pyrene	1.493	1.579	0.050	5.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.066	0.050	36.3	100
Dibenzo(a,h)anthracene	1.288	1.794	0.050	39.3	100
Benzo(g,h,i)perylene	1.136	1.640	0.050	44.4	100
Nitrobenzene-d5	0.433	0.448	0.050	3.5	100
2-Fluorobiphenyl	1.558	1.467	0.050	-5.8	100
Terphenyl-d14	0.934	0.856	0.050	-8.4	100
Phenol-d5	1.260	1.300	0.050	3.2	100
2-Fluorophenol	0.974	0.994	0.050	2.0	100
2,4,6-Tribromophenol	0.158	0.163	0.050	3.2	100
2-Chlorophenol-d4	1.255	1.273	0.050	1.4	100
1,2-Dichlorobenzene-d4	0.955	0.911	0.050	-4.6	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

001406

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Instrument ID: S2 Calibration Date: 02/25/03 Time: 1712

Lab File ID: S2D2071 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.321	1.496	0.050	13.2	100
4-Chlorophenyl-phenylether	0.588	0.667	0.050	13.4	100
Fluorene	1.212	1.362	0.050	12.4	100
4-Nitroaniline	0.365	0.215	0.050	-41.1	100
4,6-Dinitro-2-methylphenol	0.146	0.166	0.050	13.7	100
N-Nitrosodiphenylamine(1)	0.549	0.572	0.050	4.2	20.0
4-Bromophenyl-phenylether	0.224	0.261	0.050	16.5	100
Hexachlorobenzene	0.234	0.267	0.050	14.1	100
Pentachlorophenol	0.124	0.111	0.050	-10.5	20.0
Phenanthrene	1.046	1.139	0.050	8.9	100
Anthracene	1.046	1.136	0.050	8.6	100
Carbazole	0.921	0.513	0.050	-44.3	100
Di-n-butylphthalate	1.364	1.531	0.050	12.2	100
Fluoranthene	1.079	1.096	0.050	1.6	20.0
Pyrene	1.273	1.272	0.050	-0.1	100
Butylbenzylphthalate	0.652	0.671	0.050	2.9	100
3,3'-Dichlorobenzidine	0.426	0.310	0.050	-27.2	100
Benzo(a)anthracene	1.094	1.151	0.050	5.2	100
Chrysene	0.982	1.016	0.050	3.5	100
bis(2-Ethylhexyl)phthalate	0.899	0.926	0.050	3.0	100
Di-n-octylphthalate	2.313	2.667	0.050	15.3	20.0
Benzo(b)fluoranthene	1.596	1.768	0.050	10.8	100
Benzo(k)fluoranthene	1.401	1.617	0.050	15.4	100
Benzo(a)pyrene	1.398	1.606	0.050	14.9	20.0
Indeno(1,2,3-cd)pyrene	1.502	1.880	0.050	25.2	100
Dibenzo(a,h)anthracene	1.389	1.583	0.050	14.0	100
Benzo(g,h,i)perylene	1.373	1.511	0.050	10.0	100
Nitrobenzene-d5	0.418	0.432	0.050	3.3	100
2-Fluorobiphenyl	1.317	1.484	0.050	12.7	100
Terphenyl-d14	0.864	0.932	0.050	7.9	100
Phenol-d5	1.578	1.465	0.050	-7.2	100
2-Fluorophenol	1.225	1.099	0.050	-10.3	100
2,4,6-Tribromophenol	0.113	0.117	0.050	3.5	100
2-Chlorophenol-d4	1.284	1.308	0.050	1.9	100
1,2-Dichlorobenzene-d4	0.826	0.896	0.050	8.5	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

001482

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Lab File ID (Standard): S2D2071 Date Analyzed: 02/25/03

Instrument ID: S2 Time Analyzed: 1712

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	689494	16.67	597181	22.06	349035	24.78
	UPPER LIMIT	1378988	17.17	1194362	22.56	698070	25.28
	LOWER LIMIT	344747	16.17	298591	21.56	174518	24.28
	EPA SAMPLE NO.						
01	FTASS110	956860	16.66	756568	22.04	484818	24.77
02	SV1100204	885336	16.66	723799	22.04	479179	24.77
03	SVDUP2	993630	16.66	770504	22.04	474477	24.77
04	SV1110204	840169	16.66	652297	22.04	434569	24.77
05	SV1110204MS	993786	16.66	876297	22.05	546345	24.78
06	SV1110204MSD	1002922	16.66	893891	22.05	573633	24.77
07	SV1110810	1033180	16.65	850701	22.04	554558	24.77
08	SV1100709	1001823	16.66	869767	22.04	576917	24.77
09	FTASS108	956532	16.65	781145	22.04	506329	24.77
10	FTASS104	988831	16.66	795810	22.06	~~232980~~	24.79
11	SV1050204	1010294	16.71	692141	22.10	173315*	24.85
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		3	12	0-127
bis(2-Chloroethyl)Ether	25		16	64	46-109
2-Chlorophenol	25		13	52	22-117
1,3-Dichlorobenzene	25		19	76	28-103
1,4-Dichlorobenzene	25		18	72	28-104
1,2-Dichlorobenzene	25		19	76	29-107
2-Methylphenol	25		8	32*	40-104
2,2'-oxybis(1-Chloropro	25		18	72	10-134
4-Methylphenol	25		7	28*	35-106
N-Nitroso-di-n-prop.(1)	25		20	80	44-122
Hexachloroethane	25		19	76	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		20	80	48-118
2-Nitrophenol	25		18	72	29-122
2,4-Dimethylphenol	25		6	24	14-109
2,4-Dichlorophenol	25		16	64	31-122
1,2,4-Trichlorobenzene	25		19	76	33-108
Naphthalene	25		19	76	38-117
4-Chloroaniline	25		6	24	0-152
bis(2-Chloroethoxy)meth	25		19	76	49-112
Hexachlorobutadiene	25		20	80	28-109
4-Chloro-3-Methylphenol	25		13	52	48-117
2-Methylnaphthalene	25		18	72	43-113
Hexachlorocyclopentadie	25		14	56	34-103
2,4,6-Trichlorophenol	25		19	76	34-127
2,4,5-Trichlorophenol	25		18	72	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000037

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	25		20	80	53-124
Acenaphthylene	25		20	80	50-119
2,6-Dinitrotoluene	25		19	76	52-122
3-Nitroaniline	25		11	44*	47-115
Acenaphthene	25		21	84	50-121
2,4-Dinitrophenol	25		12	48	0-144
4-Nitrophenol	25		2	8	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		19	76	52-126
Diethylphthalate	25		20	80	53-126
4-Chlorophenyl-phenylet	25		20	80	50-124
Fluorene	25		20	80	52-125
4-Nitroaniline	25		12	48	47-117
4,6-Dinitro-2-methylphe	25		17	68	3-151
4-Bromophenyl-phenyleth	25		21	84	51-124
Hexachlorobenzene	25		22	88	52-124
Pentachlorophenol	25		17	68	5-125
Phenanthrene	25		21	84	52-128
Anthracene	25		20	80	52-127
Carbazole	25		21	84	54-126
Di-n-butylphthalate	25		20	80	56-132
Fluoranthene	25		20	80	53-130
Pyrene	25		22	88	53-131
Butylbenzylphthalate	25		19	76	54-128
3,3'-Dichlorobenzidine	25		9	36*	41-117
Benzo(a)anthracene	25		21	84	56-124
Chrysene	25		22	88	53-123
bis(2-Ethylhexyl)phthal	25		18	72	56-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000338

TETRA TECH NUS

PHIL- 17049

TO: G. GLENN **DATE:** APRIL 29, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0199

SAMPLES: **26/Solid/**

FTA-SS-104	FTA-SS-107	FTA-SS-110
FTA-SU-104-0204	FTA-SU-107-0204	FTA-SS-DUP1
FTA-SU-104-0911	FTA-SU-107-1113	FTA-SU-110-0204
FTA-SS-105	FTA-SS-108	FTA-SU-DUP2
FTA-SU-105-0204	FTA-SU-108-0204	FTA-SU-110-0709
FTA-SU-105-0911	FTA-SU-108-0709	FTA-SS-111
FTA-SS-106	FTA-SS-109	FTA-SU-111-0204
FTA-SU-106-0204	FTA-SU-109-0204	FTA-SU-111-0810
FTA-SU-106-1113	FTA-SU-109-0709	

1/Aqueous/

RB-020403

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0199 consists of 26 solid environmental samples (designated FTA-) and one rinsate blank (designated RB-). All samples were analyzed for TAL metals. Two field duplicate pairs (FTA-SS-110/FTA-SS-DUP1 and FTA-SU-110-0204/FTA-SU-110-DUP2) were included in this SDG.

The samples were collected by Tetra Tech NUS on February 3, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B, 7470A, and 7471A.

SUMMARY

All analytes, with the exception of thallium and cadmium, were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control blank results, field duplicate results, compound identification, compound quantitation, and detection limits.

MAJOR PROBLEMS

SDG B0199A

- Arsenic, cadmium, copper, lead, manganese, nickel, and thallium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. Positive results for cadmium and thallium at concentrations less than or approximately equal to the predicted interference value relative to the sample iron concentration (based on comparing the ratio of analyte concentration to iron concentration in samples versus ICS solution A) are considered false positives and were qualified rejected, (R). For arsenic, cadmium, copper, nickel, and thallium, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K). For copper, several results were qualified for another issue that supercedes (blank contamination) ICP interference.
- Antimony, barium, selenium, silver, and vanadium exhibited negative concentrations with absolute values greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For antimony and silver, when the detection limit was greater than the absolute value of the negative interference, and the detection limit was more than 10 times the expected interference value affected non-detected results were qualified as rejected (UR). For antimony and selenium, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL). For positive antimony results, when the sample concentration was greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased low (L).

SDG B0199B

- Arsenic, cadmium, copper, lead, manganese, nickel, and thallium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. Positive results for thallium at concentrations less than or approximately equal to the predicted interference value relative to the sample iron concentration (based on comparing the ratio of analyte concentration to iron concentration in samples versus ICS solution A) are considered false positives and were qualified rejected, (R). For arsenic, copper, and nickel, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K). For copper, several results were qualified for another issue that supercedes (blank contamination) ICP interference.
- Antimony, barium, cobalt, selenium, silver, and vanadium exhibited negative concentrations with absolute values greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For antimony and silver, when the detection limit was greater than the absolute value of the negative interference, and the detection limit was more than 10 times the expected interference value affected non-detected results were qualified as rejected (UR). For antimony and selenium, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL).

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the soil laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Barium	0.25 mg/kg	1.25 mg/kg
Copper	8.5 ug/L	2.125 mg/kg
Manganese	0.911 mg/kg	4.55 mg/kg
Potassium	194 mg/kg	970 mg/kg
Sodium	208 mg/kg	1040 mg/kg

Samples affected: The soil action levels apply to all soil environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for copper, potassium and sodium in soil samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for barium or manganese because all soil concentrations exceeded the associated blank action levels.

- The laboratory duplicate relative percent difference (RPD) for manganese exceeded the QC limit of 35% for SDG B0199B. The associated soil results for manganese were qualified as estimated (J).
- The percent recovery (%R) for antimony was less than the lower QC limit of 75% for both SDGs B0199A and B0199B. The associated soil results and detection limits were qualified as biased low (L/UL), except where superceded by rejection (R) for ICP interference.
- The field duplicate RPD for manganese exceeded the QC limit of 50% for field duplicate pair FTA-SS-110 and FTA-SS-DUP1. The results for manganese for this field duplicate pair were qualified as estimated (J).
- Field duplicate RPDs for aluminum, barium, beryllium, chromium, magnesium, vanadium, and zinc exceeded the QC limit of 50% for field duplicate pair FTA-SU-110-0204 and FTA-SU-DUP2. The results for these analytes for this field duplicate pair were qualified as estimated (J).

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

The data validator has corrected the proper field sample I.D.s which are shown on the data summary and handwritten atop the sample result sheets (Form I's). This action was necessary because the laboratory software used to generate the data report does not allow sufficient field width to list the entire field sample I.D.s from the chain of custody forms. The laboratory reported abbreviated I.D.s omitting the prefix "FTA-" and dashes.

EXECUTIVE SUMMARY

Laboratory Performance: Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as rejected (R), biased high (K), or biased low (L/UL). Several contaminants were detected in the laboratory blanks. Associated soil sample results were qualified (B) to indicate artifacts of blank contamination. The laboratory duplicate RPD exceeded QC criteria for one analyte. ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed. The laboratory truncated sample I.D.s due to limitations in the reporting software and in one case inconsistently translated the field sample I.D.

Other Factors Affecting Data Quality: Antimony recoveries were less than the lower QC limit in two matrix spike samples. Several analytes exceeded QC criteria for field duplicate precision for the field duplicate pairs.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Russell Sloboda

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SU-104-0204			FTA-SU-104-0911			FTA-SS-105			FTA-SU-105-0204		
Laboratory ID:	B0199-02A			B0199-03A			B0199-04A			B0199-05A			B0199-06A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	3970			6520			2390			6320			5760		
Antimony	0.45	L	DK	0.16	UL	DK	0.13	UL	DK	0.53	L	DK	0.57	L	DK
Arsenic	2.8	K	K	1.4	K	K	1.3	K	K	6	K	K	1.3	K	K
Barium	21.2			23.4			7.4			50.4			18		
Beryllium	0.21			0.26			0.16			0.38			0.22		
Cadmium	0.15	K	K	0.036	U		0.03	U		0.15	K	K	0.037	U	
Calcium	250			189			44.5			348			66.2		
Chromium	5.8			5.3			4.9			8.4			4.5		
Cobalt	1.1			0.75			0.18			1.8			0.81		
Copper	3.4			2.3			0.64	B	A	4.2			2.8		
Iron	3420			3160			1290			5880			2920		
Lead	19.5			26.2			2.1			17.1			4.3		
Magnesium	313			336			119			594			285		
Manganese	51.9			18.8			7.9			118			12.6		
Mercury	0.02			0.018	U		0.015	U		0.071			0.016	U	
Nickel	2.8			2.4			0.62	K	K	4.2			2.1		
Potassium	145	B	A	227	B	A	115	B	A	274	B	A	226	B	A
Selenium	0.4	UL	K	0.47	UL	K	0.39	UL	K	0.46	UL	K	0.48	UL	K
Silver	0.089	UR	K	0.1	UR	K	0.087	UR	K	0.1	UR	K	0.11	UR	K
Sodium	50.7	B	A	24.1	B	A	11.3	B	A	23.6	B	A	26.9	B	A
Thallium	0.22	R	K	0.34	R	K	0.31	K	K	0.22	R	K	0.4	K	K
Vanadium	6.8			6.8			3.3			11.2			6.2		
Zinc	15.5			4.8			1.4			15.5			7.3		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-105-0911			FTA-SS-106			FTA-SU-106-0204			FTA-SU-106-1113			FTA-SS-107		
Laboratory ID:	B0199-07A			B0199-08A			B0199-09A			B0199-10A			B0199-11A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/14/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	3860			4840			5620			3040			5220		
Antimony	0.15	UL	DK	1.5	L	DK	0.18	L	DK	0.19	L	DK	0.15	UR	K
Arsenic	1.7			3.1	K	K	1.6	K	K	1.8	K	K	2.8	K	K
Barium	11.8			32.3			16.4			11.7			27.5		
Beryllium	0.18			0.27			0.24			0.15			0.36		
Cadmium	0.035	U		0.35	K	K	0.034	R	K	0.038	R	K	0.13	K	K
Calcium	50.5			259			199			70			412		
Chromium	3.3			5.8			4			6.5			5.6		
Cobalt	0.26			1.3			0.78			0.32			1.5		
Copper	0.68	B	A	3.6			2.5			0.89	B	A	2.8	K	K
Iron	1590			4220			3310			2120			4600		
Lead	1.8			12			2.7			1.4			9.7		
Magnesium	201			400			310			135			568		
Manganese	7.3			74.1			34.3			42.9			108		
Mercury	0.017	U		0.029			0.016	U		0.015	U		0.029		
Nickel	0.91			3.6			2.3			0.94	K	K	3.2		
Potassium	158	B	A	181	B	A	203	B	A	143	B	A	269	B	A
Selenium	0.44	UL	K	0.47	UL	K	0.41	UL	K	0.41	UL	K	0.44	UL	K
Silver	0.099	UR	K	0.1	UR	K	0.092	UR	K	0.092	UR	K	0.098	UR	K
Sodium	15.1	B	A	16.3	B	A	13.8	B	A	20.1	B	A	13.2	B	A
Thallium	0.24	K	K	0.2	R	K	0.28	R	K	0.23	R	K	0.15	R	K
Vanadium	4.1			11.4			6.4			3.6			9.1		
Zinc	2.4			15.3			4.8			2.1			11.8		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-107-0204			FTA-SU-107-1113			FTA-SS-108			FTA-SU-108-0204			FTA-SU-108-0709		
Laboratory ID:	B0199-12A			B0199-13A			B0199-14A			B0199-15A			B0199-16A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	6510			1440			4810			8660			3660		
Antimony	0.14	UL	DK	0.16	UL	DK	0.17	UL	DK	0.33	L	DK	0.22	L	DK
Arsenic	1.5	K	K	1.7			1.5	K	K	2	K	K	1.1	K	K
Barium	21.4			5.2			14.3			23.2			10.7		
Beryllium	0.26			0.1			0.32			0.29			0.17		
Cadmium	0.033	U		0.038	U		0.11	K	K	0.037	U		0.032	U	
Calcium	353			51.9			372			337			116		
Chromium	5.2			2.1			5.7			7.6			7.5		
Cobalt	0.9			0.097			1.2			0.92			0.3		
Copper	2.3			0.32	B	A	2.4			3.4			1.3	B	A
Iron	3230			1210			3620			3600			1750		
Lead	3.2			1.1			7			3.3			1.6		
Magnesium	325			67.1			647			404			177		
Manganese	44.9			7			67			33.3			17.6		
Mercury	0.017	U		0.015	U		0.02	U		0.016	U		0.017	U	
Nickel	2.4			0.42	K	K	3.2			3.2			1.3		
Potassium	214	B	A	65.6	B	A	201	B	A	303	B	A	158	B	A
Selenium	0.43	UL	K	0.49	UL	K	0.5	UL	K	0.48	UL	K	0.41	UL	K
Silver	0.095	UR	K	0.11	UL	K	0.11	UR	K	0.11	UR	K	0.092	UR	K
Sodium	16.1	B	A	6.4	B	A	21.7	B	A	24.7	B	A	18.5	B	A
Thallium	0.35	R	K	0.17	K	K	0.29	R	K	0.41	R	K	0.22	R	K
Vanadium	6.8			2.2			7.4			8.6			4.7		
Zinc	4.4			0.99			8.5			5.8			2.4		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-109			FTA-SU-109-0204			FTA-SU-109-0709			FTA-SS-110			FTA-SS-DUP1		
Laboratory ID:	B0199-17A			B0199-18A			B0199-19A			B0199-20A			B0199-23A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:										FTA-SS-DUP1			FTA-SS-110		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	3630			5040			2870			4440			4420		
Antimony	0.14	L	DK	0.17	L	DK	0.3	L	DK	0.16	L	DK	0.15	UL	DK
Arsenic	1.6	K	K	1.2	K	K	1.5	K	K	1.6	K	K	1.4	K	K
Barium	8.6			16.3			8.3			8.9			6.7		
Beryllium	0.19			0.22			0.16			0.2			0.17		
Cadmium	0.11	K	K	0.033	U		0.034	U		0.051	R	K	0.034	U	
Calcium	175			263			68.5			136			118		
Chromium	4.5			6			3.3			4.9			4.5		
Cobalt	0.92			0.48			0.12			1.6			1.2		
Copper	2	B	A	2.2			0.36	B	A	2.1	B	A	2.5		
Iron	2830			2340			1600			3330			2640		
Lead	5.6			2.2			1.1			6.1			4.6		
Magnesium	219			245			125			284			196		
Manganese	37.5			20.8			13.6			60.2	J	G	30.2	J	FG
Mercury	0.016	U		0.018	U		0.014	U		0.019	U		0.018	U	
Nickel	2.7			1.7			0.59	K	K	3.4			3.2		
Potassium	136	B	A	169	B	A	104	B	A	145	B	A	116	B	A
Selenium	0.4	UL	K	0.42	UL	K	0.43	UL	K	0.44	UL	K	0.44	UL	K
Silver	0.089	UR	K	0.094	UR	K	0.096	UR	K	0.099	UR	K	0.097	UR	K
Sodium	8.4	B	A	10.6	B	A	6.4	B	A	24.8	B	A	32.6	B	A
Thallium	0.18	R	K	0.28	R	K	0.19	K	K	0.32	R	K	0.15	U	
Vanadium	6.5			4.7			3.7			6.2			4.6		
Zinc	5.6			3.1			1.4			6.1			4.7		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-110-0204			FTA-SU-DUP2			FTA-SU-110-0709			FTA-SS-111			FTA-SU-111-0204		
Laboratory ID:	B0199-21A			B0199-24A			B0199-22A			B0199-25A			B0199-26A		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Duplicate:	FTA-SU-DUP2			FTA-SU-110-0204											
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	5720	J	G	12400	J	G	8350			3130			4280		
Antimony	0.16	UL	DK	0.16	UL	DK	0.15	UR	K	0.18	L	DK	0.16	UL	DK
Arsenic	1.1	K	K	1.1	K	K	3.2			1.3	K	K	2		
Barium	14.6	J	G	31.9	J	G	35.6			14.5			7.7		
Beryllium	0.22	J	G	0.37	J	G	0.3			0.15			0.23		
Cadmium	0.037	U		0.037	U		0.035	U		0.062	K	K	0.037	U	
Calcium	101			148			95.1			261			71.9		
Chromium	4.9	J	G	8.6	J	G	8.3			3.6			5.1		
Cobalt	0.86			1.1			2			0.6			0.28		
Copper	2.7			4			2.4	K	K	2.9			1.1	B	A
Iron	2320			3570			3600			2200			1930		
Lead	2.7			3.7			2.5			8.1			1.7		
Magnesium	260	J	G	713	J	G	376			242			185		
Manganese	33	J	F	36	J	F	47	J	F	56.3			19.2	J	F
Mercury	0.017	U		0.016	U		0.017	U		0.019	U		0.017	U	
Nickel	2.2			3			3			2			0.74	K	K
Potassium	155	B	A	436	B	A	219	B	A	187	B	A	200	B	A
Selenium	0.48	UL	K	0.48	UL	K	0.45	UL		0.51	UL	K	0.48	UL	K
Silver	0.11	UR	K	0.11	UR	K	0.1	UR		0.11	UR	K	0.11	UR	K
Sodium	52.2	B	A	40.5	B	A	26.1	B	A	13.5	B	A	15.6	B	A
Thallium	0.16	U		0.2	R	K	0.24	R	K	0.17	U		0.19	R	K
Vanadium	4.9	J	G	8.4	J	G	9.7			7.2			6.7		
Zinc	3.6	J	G	7.3	J	G	5.6			13.8			1.6		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SU-111-0810			RB-020403		
Laboratory ID:	B0199-27A			B0199-28B		
Sample Date:	02/04/03			02/04/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			ug/L		
Aluminum	2040			17	U	
Antimony	0.14	UL	D	3	U	
Arsenic	0.64			3	U	
Barium	4.6			5.7		
Beryllium	0.095			0.5	U	
Cadmium	0.033	U		0.7	U	
Calcium	35.9			240	U	
Chromium	3.3			1.2		
Cobalt	0.17			0.9	U	
Copper	0.93	B	A	4.6		
Iron	906			26	U	
Lead	0.84			4	U	
Magnesium	86.3			8	U	
Manganese	7.5	J	F	3.3		
Mercury	0.017	U		0.13	U	
Nickel	0.63			0.95		
Potassium	125	B	A	265		
Selenium	0.43	U		9	U	
Silver	0.095	U		2	U	
Sodium	23.4	B	A	260		
Thallium	0.14	U		3	U	
Vanadium	2.3			0.7	U	
Zinc	1.6			7	U	

DATA SUMMARY OF INORGANIC RESULTS
SDG B0199 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0199\M_B0199_A.DBF data retrieved on: 04/29/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS104

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-02A

Level (low/med): MED Date Received: 02/05/03

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3970			P
7440-36-0	Antimony	0.45	B	N	P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	21.2		2/14/03	P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.15	B		P
7440-70-2	Calcium	250	B		P
7440-47-3	Chromium	5.8			P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	3420			P
7439-92-1	Lead	19.5			P
7439-95-4	Magnesium	313	B		P
7439-96-5	Manganese	51.9			P
7439-97-6	Mercury	0.020	B		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	145	B		P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.089	U		P
7440-23-5	Sodium	50.7	B		P
7440-28-0	Thallium	0.22	B		P
7440-62-2	Vanadium	6.8	B		P
7440-66-6	Zinc	15.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-104-0204
SV1040204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-03A

Level (low/med): MED Date Received: 02/05/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6520			P
7440-36-0	Antimony	0.16	U	*N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	23.4			P
7440-41-7	Beryllium	0.26			P
7440-43-9	Cadmium	0.036	U		P
7440-70-2	Calcium	189	B		P
7440-47-3	Chromium	5.3			P
7440-48-4	Cobalt	0.75	B		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	3160			P
7439-92-1	Lead	26.2			P
7439-95-4	Magnesium	336	B		P
7439-96-5	Manganese	18.8			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	227	B		P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	24.1	B		P
7440-28-0	Thallium	0.34	B		P
7440-62-2	Vanadium	6.8	B		P
7440-66-6	Zinc	4.8	B		P
	Cyanide				NR

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Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-104-0911

SV1040911

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-04A

Level (low/med): MED Date Received: 02/05/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2390			P
7440-36-0	Antimony	0.13	U	*N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	7.4	B		P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.030	U		P
7440-70-2	Calcium	44.5	B		P
7440-47-3	Chromium	4.9			P
7440-48-4	Cobalt	0.18	B		P
7440-50-8	Copper	0.64	B		P
7439-89-6	Iron	1290			P
7439-92-1	Lead	2.1			P
7439-95-4	Magnesium	119	B		P
7439-96-5	Manganese	7.9			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	0.62	B		P
7440-09-7	Potassium	115	B		P
7782-49-2	Selenium	0.39	U		P
7440-22-4	Silver	0.087	U		P
7440-23-5	Sodium	11.3	B		P
7440-28-0	Thallium	0.31	B		P
7440-62-2	Vanadium	3.3	B		P
7440-66-6	Zinc	1.4	B		P
	Cyanide				NR

*N JMC 2/14/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS105

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-05A

Level (low/med): MED Date Received: 02/05/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6320			P
7440-36-0	Antimony	0.53	B	N	P
7440-38-2	Arsenic	6.0		pm 2/14/03	P
7440-39-3	Barium	50.4			P
7440-41-7	Beryllium	0.38			P
7440-43-9	Cadmium	0.15	B		P
7440-70-2	Calcium	348	B		P
7440-47-3	Chromium	8.4			P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	4.2	B		P
7439-89-6	Iron	5880			P
7439-92-1	Lead	17.1			P
7439-95-4	Magnesium	594	B		P
7439-96-5	Manganese	118			P
7439-97-6	Mercury	0.071	B		CV
7440-02-0	Nickel	4.2	B		P
7440-09-7	Potassium	274	B		P
7782-49-2	Selenium	0.46	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	23.6	B		P
7440-28-0	Thallium	0.22	B		P
7440-62-2	Vanadium	11.2			P
7440-66-6	Zinc	15.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-105-0204
SV1050204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-06A

Level (low/med): MED Date Received: 02/05/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5760			P
7440-36-0	Antimony	0.57	B	N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	18.0			P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	66.2	B		P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	0.81	B		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	2920			P
7439-92-1	Lead	4.3			P
7439-95-4	Magnesium	285	B		P
7439-96-5	Manganese	12.6			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	2.1	B		P
7440-09-7	Potassium	226	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	26.9	B		P
7440-28-0	Thallium	0.40	B		P
7440-62-2	Vanadium	6.2	B		P
7440-66-6	Zinc	7.3	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-105-0911

SV1050911

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-07A

Level (low/med): MED Date Received: 02/05/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3860			P
7440-36-0	Antimony	0.15	U	*N	P
7440-38-2	Arsenic	1.7			P
7440-39-3	Barium	11.8			P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	50.5	B		P
7440-47-3	Chromium	3.3			P
7440-48-4	Cobalt	0.26	B		P
7440-50-8	Copper	0.68	B		P
7439-89-6	Iron	1590			P
7439-92-1	Lead	1.8	B		P
7439-95-4	Magnesium	201	B		P
7439-96-5	Manganese	7.3			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.91	B		P
7440-09-7	Potassium	158	B		P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.099	U		P
7440-23-5	Sodium	15.1	B		P
7440-28-0	Thallium	0.24	B		P
7440-62-2	Vanadium	4.1	B		P
7440-66-6	Zinc	2.4	B		P
	Cyanide				NR

RMC 2/14/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS106

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-08A

Level (low/med): MED Date Received: 02/05/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4840			P
7440-36-0	Antimony	1.5	B	N	P
7440-38-2	Arsenic	3.1			P
7440-39-3	Barium	32.3			P
7440-41-7	Beryllium	0.27			P
7440-43-9	Cadmium	0.35			P
7440-70-2	Calcium	259	B		P
7440-47-3	Chromium	5.8			P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	3.6	B		P
7439-89-6	Iron	4220			P
7439-92-1	Lead	12.0			P
7439-95-4	Magnesium	400	B		P
7439-96-5	Manganese	74.1			P
7439-97-6	Mercury	0.029	B		CV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	181	B		P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	16.3	B		P
7440-28-0	Thallium	0.20	B		P
7440-62-2	Vanadium	11.4			P
7440-66-6	Zinc	15.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-106-0204
SV1060204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-09A

Level (low/med): MED Date Received: 02/05/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5620			P
7440-36-0	Antimony	0.18	B	*N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	16.4			P
7440-41-7	Beryllium	0.24			P
7440-43-9	Cadmium	0.034	B		P
7440-70-2	Calcium	199	B		P
7440-47-3	Chromium	4.0			P
7440-48-4	Cobalt	0.78	B		P
7440-50-8	Copper	2.5	B		P
7439-89-6	Iron	3310			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	310	B		P
7439-96-5	Manganese	34.3			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	2.3	B		P
7440-09-7	Potassium	203	B		P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.092	U		P
7440-23-5	Sodium	13.8	B		P
7440-28-0	Thallium	0.28	B		P
7440-62-2	Vanadium	6.4	B		P
7440-66-6	Zinc	4.8	B		P
	Cyanide				NR

TRC 2/14/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-106-1113
SV1061113

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-10A

Level (low/med): MED Date Received: 02/05/03

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3040			P
7440-36-0	Antimony	0.19	B	*N	P
7440-38-2	Arsenic	1.8			P
7440-39-3	Barium	11.7			P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.038	B		P
7440-70-2	Calcium	70.0	B		P
7440-47-3	Chromium	6.5			P
7440-48-4	Cobalt	0.32	B		P
7440-50-8	Copper	0.89	B		P
7439-89-6	Iron	2120			P
7439-92-1	Lead	1.4	B		P
7439-95-4	Magnesium	135	B		P
7439-96-5	Manganese	42.9			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	0.94	B		P
7440-09-7	Potassium	143	B		P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.092	U		P
7440-23-5	Sodium	20.1	B		P
7440-28-0	Thallium	0.23	B		P
7440-62-2	Vanadium	3.6	B		P
7440-66-6	Zinc	2.1	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS107

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-11A

Level (low/med): MED Date Received: 02/05/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5220			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	27.5			P
7440-41-7	Beryllium	0.36			P
7440-43-9	Cadmium	0.13	B		P
7440-70-2	Calcium	412	B		P
7440-47-3	Chromium	5.6			P
7440-48-4	Cobalt	1.5	B		P
7440-50-8	Copper	2.8	B		P
7439-89-6	Iron	4600			P
7439-92-1	Lead	9.7			P
7439-95-4	Magnesium	568	B		P
7439-96-5	Manganese	108			P
7439-97-6	Mercury	0.029	B		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	269	B		P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.098	U		P
7440-23-5	Sodium	13.2	B		P
7440-28-0	Thallium	0.15	B		P
7440-62-2	Vanadium	9.1	B		P
7440-66-6	Zinc	11.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-107-0204
SV1070204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-12A

Level (low/med): MED Date Received: 02/05/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6510			P
7440-36-0	Antimony	0.14	U	*N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	21.4			P
7440-41-7	Beryllium	0.26			P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	353	B		P
7440-47-3	Chromium	5.2			P
7440-48-4	Cobalt	0.90	B		P
7440-50-8	Copper	2.3	B		P
7439-89-6	Iron	3230			P
7439-92-1	Lead	3.2			P
7439-95-4	Magnesium	325	B		P
7439-96-5	Manganese	44.9			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	214	B		P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	16.1	B		P
7440-28-0	Thallium	0.35	B		P
7440-62-2	Vanadium	6.8	B		P
7440-66-6	Zinc	4.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-107-1113
SV1071113

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-13A

Level (low/med): MED Date Received: 02/05/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1440			P
7440-36-0	Antimony	0.16	U	*N	P
7440-38-2	Arsenic	1.7			P
7440-39-3	Barium	5.2	B		P
7440-41-7	Beryllium	0.10	B		P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	51.9	B		P
7440-47-3	Chromium	2.1	B		P
7440-48-4	Cobalt	0.097	B		P
7440-50-8	Copper	0.32	B		P
7439-89-6	Iron	1210			P
7439-92-1	Lead	1.1	B		P
7439-95-4	Magnesium	67.1	B		P
7439-96-5	Manganese	7.0			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	0.42	B		P
7440-09-7	Potassium	65.6	B		P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	6.4	B		P
7440-28-0	Thallium	0.17	B		P
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	0.99	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS108

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-14A

Level (low/med): MED Date Received: 02/05/03

% Solids: 82.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4810			P
7440-36-0	Antimony	0.17	U	*N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	14.3		2/14/03	P
7440-41-7	Beryllium	0.32			P
7440-43-9	Cadmium	0.11	B		P
7440-70-2	Calcium	372	B		P
7440-47-3	Chromium	5.7			P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	2.4	B		P
7439-89-6	Iron	3620			P
7439-92-1	Lead	7.0			P
7439-95-4	Magnesium	647	B		P
7439-96-5	Manganese	67.0			P
7439-97-6	Mercury	0.020	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	201	B		P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	21.7	B		P
7440-28-0	Thallium	0.29	B		P
7440-62-2	Vanadium	7.4	B		P
7440-66-6	Zinc	8.5	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-108-0204
SV1080204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-15A

Level (low/med): MED Date Received: 02/05/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8660			P
7440-36-0	Antimony	0.33	B	*N	P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	23.2			P
7440-41-7	Beryllium	0.29			P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	337	B		P
7440-47-3	Chromium	7.6			P
7440-48-4	Cobalt	0.92	B		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	3600			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	404	B		P
7439-96-5	Manganese	33.3			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	303	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	24.7	B		P
7440-28-0	Thallium	0.41	B		P
7440-62-2	Vanadium	8.6	B		P
7440-66-6	Zinc	5.8	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-108-0709
SV1080709

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-16A

Level (low/med): MED Date Received: 02/05/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3660			P
7440-36-0	Antimony	0.22	B	N	P
7440-38-2	Arsenic	1.1			P
7440-39-3	Barium	10.7			P
7440-41-7	Beryllium	0.17	B		P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	116	B		P
7440-47-3	Chromium	7.5			P
7440-48-4	Cobalt	0.30	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	1750			P
7439-92-1	Lead	1.6	B		P
7439-95-4	Magnesium	177	B		P
7439-96-5	Manganese	17.6			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	158	B		P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.092	U		P
7440-23-5	Sodium	18.5	B		P
7440-28-0	Thallium	0.22	B		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	2.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS109

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-17A

Level (low/med): MED Date Received: 02/05/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3630			P
7440-36-0	Antimony	0.14	B	*N	P
7440-38-2	Arsenic	1.6		pre 2/11/03	P
7440-39-3	Barium	8.6	B		P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.11	B		P
7440-70-2	Calcium	175	B		P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	0.92	B		P
7440-50-8	Copper	2.0	B		P
7439-89-6	Iron	2830			P
7439-92-1	Lead	5.6			P
7439-95-4	Magnesium	219	B		P
7439-96-5	Manganese	37.5			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	2.7	B		P
7440-09-7	Potassium	136	B		P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.089	U		P
7440-23-5	Sodium	8.4	B		P
7440-28-0	Thallium	0.18	B		P
7440-62-2	Vanadium	6.5	B		P
7440-66-6	Zinc	5.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-109-0204
SV1090204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-18A

Level (low/med): MED Date Received: 02/05/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5040			P
7440-36-0	Antimony	0.17	B	*N	P
7440-38-2	Arsenic	1.2		for elevated	P
7440-39-3	Barium	16.3			P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	263	B		P
7440-47-3	Chromium	6.0			P
7440-48-4	Cobalt	0.48	B		P
7440-50-8	Copper	2.2	B		P
7439-89-6	Iron	2340			P
7439-92-1	Lead	2.2			P
7439-95-4	Magnesium	245	B		P
7439-96-5	Manganese	20.8			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	169	B		P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.094	U		P
7440-23-5	Sodium	10.6	B		P
7440-28-0	Thallium	0.28	B		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	3.1	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-109-0709

SV1090709

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-19A

Level (low/med): MED Date Received: 02/05/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2870			P
7440-36-0	Antimony	0.30	B	N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	8.3	B		P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	68.5	B		P
7440-47-3	Chromium	3.3			P
7440-48-4	Cobalt	0.12	B		P
7440-50-8	Copper	0.36	B		P
7439-89-6	Iron	1600			P
7439-92-1	Lead	1.1	B		P
7439-95-4	Magnesium	125	B		P
7439-96-5	Manganese	13.6			P
7439-97-6	Mercury	0.014	U		CV
7440-02-0	Nickel	0.59	B		P
7440-09-7	Potassium	104	B		P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.096	U		P
7440-23-5	Sodium	6.4	B		P
7440-28-0	Thallium	0.19	B		P
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	1.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS110

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-20A

Level (low/med): MED Date Received: 02/05/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4440			P
7440-36-0	Antimony	0.16	B	*N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	8.9	B		P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.051	B		P
7440-70-2	Calcium	136	B		P
7440-47-3	Chromium	4.9			P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	2.1	B		P
7439-89-6	Iron	3330			P
7439-92-1	Lead	6.1			P
7439-95-4	Magnesium	284	B		P
7439-96-5	Manganese	60.2			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	3.4	B		P
7440-09-7	Potassium	145	B		P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.099	U		P
7440-23-5	Sodium	24.8	B		P
7440-28-0	Thallium	0.32	B		P
7440-62-2	Vanadium	6.2	B		P
7440-66-6	Zinc	6.1	B		P
	Cyanide				NR

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Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS111

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Lab Sample ID: B0199-25A

Level (low/med): MED Date Received: 02/05/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3130			P
7440-36-0	Antimony	0.18	B	*N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	14.5			P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.062	B		P
7440-70-2	Calcium	261	B		P
7440-47-3	Chromium	3.6			P
7440-48-4	Cobalt	0.60	B		P
7440-50-8	Copper	2.9	B		P
7439-89-6	Iron	2200			P
7439-92-1	Lead	8.1			P
7439-95-4	Magnesium	242	B		P
7439-96-5	Manganese	56.3			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	187	B		P
7782-49-2	Selenium	0.51	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	13.5	B		P
7440-28-0	Thallium	0.17	U		P
7440-62-2	Vanadium	7.2	B		P
7440-66-6	Zinc	13.8			P
	Cyanide				NR

*N DM 2/14/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-110-0204
SV1100204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-21A

Level (low/med): MED Date Received: 02/05/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5720			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	1.1			P
7440-39-3	Barium	14.6			P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	101	B		P
7440-47-3	Chromium	4.9			P
7440-48-4	Cobalt	0.86	B	* Fe 2/11/03	P
7440-50-8	Copper	2.7	B		P
7439-89-6	Iron	2320			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	260	B		P
7439-96-5	Manganese	33.0		*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	155	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	52.2	B		P
7440-28-0	Thallium	0.16	U	* Fe 2/11/03	P
7440-62-2	Vanadium	4.9	B		P
7440-66-6	Zinc	3.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-110-0709

SV1100709

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-22A

Level (low/med): MED Date Received: 02/05/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8350			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	3.2			P
7440-39-3	Barium	35.6			P
7440-41-7	Beryllium	0.30			P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	95.1	B		P
7440-47-3	Chromium	8.3			P
7440-48-4	Cobalt	2.0	B	* BF 2/11/03	P
7440-50-8	Copper	2.4	B		P
7439-89-6	Iron	3600			P
7439-92-1	Lead	2.5			P
7439-95-4	Magnesium	376	B		P
7439-96-5	Manganese	47.0		*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	219	B		P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	26.1	B		P
7440-28-0	Thallium	0.24	B	* BF 2/11/03	P
7440-62-2	Vanadium	9.7	B		P
7440-66-6	Zinc	5.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASSDUP1

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-23A

Level (low/med): MED Date Received: 02/05/03

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4420			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	6.7	B		P
7440-41-7	Beryllium	0.17	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	118	B		P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	1.2	B	Blind	P
7440-50-8	Copper	2.5	B		P
7439-89-6	Iron	2640			P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	196	B		P
7439-96-5	Manganese	30.2		*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	116	B		P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.097	U		P
7440-23-5	Sodium	32.6	B		P
7440-28-0	Thallium	0.15	U	Blind	P
7440-62-2	Vanadium	4.6	B		P
7440-66-6	Zinc	4.7	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SU-DUP2

SVDUP2

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-24A

Level (low/med): MED Date Received: 02/05/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12400			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	1.1			P
7440-39-3	Barium	31.9			P
7440-41-7	Beryllium	0.37			P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	148	B		P
7440-47-3	Chromium	8.6			P
7440-48-4	Cobalt	1.1	B	* Dup Limits	P
7440-50-8	Copper	4.0	B		P
7439-89-6	Iron	3570			P
7439-92-1	Lead	3.7			P
7439-95-4	Magnesium	713	B		P
7439-96-5	Manganese	36.0		*	P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	436	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	40.5	B		P
7440-28-0	Thallium	0.20	B	* Dup Limits	P
7440-62-2	Vanadium	8.4	B		P
7440-66-6	Zinc	7.3	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-1184-0204
SV1110204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-26A

Level (low/med): MED Date Received: 02/05/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4280			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	7.7	B		P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	71.9	B		P
7440-47-3	Chromium	5.1			P
7440-48-4	Cobalt	0.28	B	* Blank	P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	1930			P
7439-92-1	Lead	1.7	B		P
7439-95-4	Magnesium	185	B		P
7439-96-5	Manganese	19.2		*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.74	B		P
7440-09-7	Potassium	200	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	15.6	B		P
7440-28-0	Thallium	0.19	B	* Blank	P
7440-62-2	Vanadium	6.7	B		P
7440-66-6	Zinc	1.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTA-SU-111-0810
SV1110810

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Lab Sample ID: B0199-27A

Level (low/med): MED Date Received: 02/05/03

% Solids: 95.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2040			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	0.64	B		P
7440-39-3	Barium	4.6	B		P
7440-41-7	Beryllium	0.095	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	35.9	B		P
7440-47-3	Chromium	3.3			P
7440-48-4	Cobalt	0.17	B	* Failed	P
7440-50-8	Copper	0.93	B		P
7439-89-6	Iron	906			P
7439-92-1	Lead	0.84	B		P
7439-95-4	Magnesium	86.3	B		P
7439-96-5	Manganese	7.5		*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.63	B		P
7440-09-7	Potassium	112	B		P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	20.9	B		P
7440-28-0	Thallium	0.14	U	* Failed	P
7440-62-2	Vanadium	2.3	B		P
7440-66-6	Zinc	1.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): WATER Lab Sample ID: B0199-28B

Level (low/med): MED Date Received: 02/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	5.7	B	EP 2/14/03	P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.2	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.6	B	EP 2/14/03	P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	3.3	B	EP 2/14/03	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.95	B		P
7440-09-7	Potassium	265	B	EP 2/14/03	P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	260	B	EP 2/14/03	P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: 30199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA 15220		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	VOA + MTBE 5 gram encore sampler	VOA + MTBE 40z Amber glass	SVOC + PCB 40z Amber glass	TAL Metals + pH 40z Amber glass	TOC 40z Amber glass	Grain Size 40z Amber glass	TAL Metals + % Moisture	COMMENTS
TB-020403	2/4/03 / 0700		X	X			01	2	2								
FTA-SS-104	2/4/03 / 0750		X		X		02	7		3	1*	1*	1*	1*			
FTA-SU-104-0204	2/4/03 / 0803		X		X		03	5		3	1*				1*		
FTA-SU-104-0911	2/4/03 / 0818		X		X		04	5		3	1				1		
FTA-SS-105	2/4/03 / 0835		X		X		05	7		3	1	1	1	1			
FTA-SU-105-0204	2/4/03 / 0848		X		X		06	5		3	1				1		
FTA-SU-105-0911	2/4/03 / 0858		X		X		07	5		3	1				1		
FTA-SS-106	2/4/03 / 0910		X		X		08	7		3	1	1	1	1			
FTA-SU-106-0204	2/4/03 / 0925		X		X		09	5		3	1				1		
FTA-SU-106-1113	2/4/03 / 0938		X		X		10	5		3	1				1		
FTA-SS-107-	2/4/03 / 1005		X		X		11	7		3	1	1	1	1			
FTA-SU-107-0204	2/4/03 / 1020		X		X		12	5		3	1				1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/4/03 / 1700	[signature]	2-5-03 / 0900	Shipped VIA FED EX 8286 8470 7122	10
		/		/		
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MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME: /	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 - Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 5 Encore samplers; VOC + MTBE 40z Amber Glass; Gwat + PCB 40z Amber Glass; TAL Metals 40z Amber Glass; TAL Metals 40z Amber Glass; TOC 40z Amber Glass; Grain Size	COMMENTS
FTA-SU-107-1113	2/4/03 1030		X		X		13	5	3 1 1	
FTA-SS-108	2/4/03 1045		X		X		14	3	3 1 1 1 1	
FTA-SU-108-0204	2/4/03 1057		X		X		15	5	3 1 1	
FTA-SU-108-0709	2/4/03 1110		X		X		16	5	3 1 1	
FTA-SS-109	2/4/03 1122		X		X		17	3	3 1 1 1	
FTA-SU-109-0204	2/4/03 1134		X		X		18	5	3 1 1	
FTA-SU-109-0709	2/4/03 1145		X		X		19	5	3 1 1	
FTA-SS-110	2/4/03 1220		X		X		20	3	3 1 1 1	
FTA-SU-110-0204	2/4/03 1250		X		X		21	5	3 1 1	
FTA-SU-110-0709	2/4/03 1305		X		X		22	5	3 1 1	
FTA-SS-Dup 1	2/4/03 1225		X		X		23	6	3 1 1	
FTA-SU-Dup 2	2/4/03 1255		X		X		24	5	3 1 1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/4/03 1700	[signature]	2-5-03 0900	Shipped via Fed Ex 8286 8470 7122	10
		/		/		
		/		/		

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MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 5 gram Encore sampler; VOC + MTBE 40z Amber Glass; SVOC + PCB 40z Amber Glass; TAL Metals + Pct 40z Amber Glass; TAL Metals 5g Moisture 40z Amber Glass; TAL Metals 5g Moisture 40ml VOA Vial HCl; VOL MTBE 1 Liter Amber Glass; SVOC 1 Liter Amber Glass; PCB 500ml Poly HNO3; TAL Metals 8oz Amber Glass Wide Mouth	COMMENTS
FTA-SS-111	2/4/03 1315		X		X		25		9 3 2 2 1	DO MS/MSD
FTA-SU-111-0204	2/4/03 1340		X		X		26		9 2 2	DO MS/MSD
FTA-SU-111-0810	2/4/03 1355		X		X		27		3 1 1	
RB-020403	2/4/03 1600		X	X			28		2 2 2 1	
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/4/03 1700	[signature]	2-5-03 0900	Shipped via Fed Ex 8286 8420 7122	10
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SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and twenty-six soil samples that were collected on February 4, 2003, and received at Mitkem on February 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples FTASS111MS and SV1080709 and high recovery of bromofluorobenzene in samples SV1040911, SV1050204 and SV1050911. Sample SV1080911 was re-analyzed with 1,2-dichloroethane-d4 with QC limits and low recovery of bromofluorobenzene. Samples SV1040911, SV1050204 and SV1050911 were re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of bromomethane inV6XLCS and high recovery of vinyl chloride, bromomethane, chloroethane and trichlorofluoromethane in V6ELCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on samples FTASS111 and SV1110204. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate for sample FTASS111 and SV1110204. Replicate RPDs were within the QC limits with the exception of methylene chloride for sample FTASS111.

Sample analysis: samples SV1040911, SV1050204 and SV1050911 were initially analyzed at low level, but due to high concentration of target analytes, were re-analyzed at dilution by medium level. Internal standard area counts were within the QC criteria with the exception of sample SV1050204, FTASS110, FTASSDUP1 and SV1080709RE. Sample SV1050204 was re-analyzed at dilution with all internal standard area counts within QC criteria. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine in S1CLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to high concentration of target analytes, sample SV1050911 was re-analyzed at 10x dilution. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a low reporting limit. These samples were extracted with samples requiring a lower reporting limit. No other unusual observation was made for the analysis.

5. Metals Analysis (SDG A):

Due to the large number of samples, metals results are arranged into two Sample Delivery Groups, SDG B0199A and B0199B. Each SDG includes a matrix spike/duplicate analysis. Results are qualified where necessary for those samples associated with each spike/duplicate. Raw analysis data for both SDGs follow Form 14 for SDG B0220B.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTASS111. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimonywith spike recovery within QC limits.\.

Matrix duplicate: matrix duplicate was performed on sample FTASS111. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. Metals Analysis (SDG B):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on samples SV1110204 and RB020403. Spike recoveries were within the QC limits. The mercury spike and %Recovery are incorrect on Form 5's due to the software. The mercury spike added and %Recovery were manually corrected.

Matrix duplicate: matrix duplicate was performed on samples SV1110204 and RB020403. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

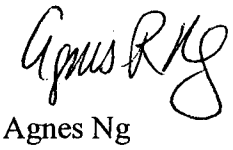
Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.



Agnes Ng
CLP Project Manager
03/19/03

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U			17.000	U	P
Antimony	3.0	U	3.0	U	3.0	U			3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U			3.000	U	P
Barium	4.0	U	4.0	U	4.0	U			4.000	U	P
Beryllium	0.5	U	0.5	U	0.5	U			0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U			0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U			240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U			0.600	U	P
Cobalt	0.9	U	0.9	U	0.9	U			0.900	U	P
Copper	7.6	B	4.0	U	4.0	U			4.000	U	P
Iron	26.0	U	26.0	U	26.0	U			26.000	U	P
Lead	4.0	U	4.0	U	4.0	U			4.000	U	P
Magnesium	8.0	U	8.0	U	8.0	U			8.000	U	P
Manganese	0.8	U	0.8	U	0.8	U			0.911	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U	0.8	U			0.800	U	P
Potassium	486.9	B	403.2	B	353.0	B	295.7	B	194.427	B	P
Selenium	9.0	U	9.0	U	9.0	U			9.000	U	P
Silver	-4.2	B	-6.7	B	-6.9	B			-6.681	B	P
Sodium	379.9	B	406.0	B	362.4	B	257.3	B	208.096	B	P
Thallium	3.0	U	3.0	U	3.0	U			3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U			0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U			7.000	U	P
Cyanide											

000400

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.250	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.045	U	P
Copper	8.5	B	4.0	U	4.0	U	4.0	U	0.251	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.300	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	-8.9	B	8.0	U	-9.7	B	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.071	B	P
Mercury									0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.040	U	P
Potassium			377.9	B					19.513	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium			327.7	B					18.873	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

000401

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.045	U	P
Copper	7.6	B	4.0	U	4.0	U	4.0	U	0.200	U	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.300	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.0	U	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.040	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.040	U	P
Potassium	486.9	B	403.2	B	353.0	B	295.7	B	8.008	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	-4.2	B	-6.7	B	-6.9	B	-6.6	B	-0.358	B	P
Sodium	379.9	B	406.0	B	362.4	B	257.3	B	8.079	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

000097

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R	IDL
Aluminum	500000	500000				509029	520148.4	104.0	
Antimony		600				-5.3	615.7	102.6	3
Arsenic		100				21	113.3	113.3	3
Barium		500					507.6	101.5	4
Beryllium		500					487.6	97.5	0.5
Cadmium		1000				4.3	939.4	93.9	0.7
Calcium	500000	500000				533074	552472.0	110.5	
Chromium		500					486.8	97.4	0.6
Cobalt		500					446.2	89.2	0.9
Copper		500				5.3	537.1	107.4	4
Iron	200000	200000				181881	185566.6	92.8	
Lead		500				4.1	470.8	94.2	4
Magnesium	500000	500000				501955	511809.2	102.4	
Manganese		500				8.3	506.2	101.2	0.8
Mercury									
Nickel		1000				10	921.9	92.2	0.8
Potassium									
Selenium		500					494.4	98.9	9
Silver		200				-13.7	205.1	102.6	2
Sodium									
Thallium		100					108.5	108.5	3
Vanadium		500				10.7 -2.7	498.2	99.6	0.2
Zinc		1000					910.7	91.1	7

001941

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial %R	Final Found Sol. A	Final Found Sol. AB	Final %R	IDL
Aluminum	500000	500000	497782	517700.5	103.5	502902	518349.5	103.7	
Antimony		600	[redacted]	579.8	96.6	[redacted] -7.6	599.9	100.0	3
Arsenic		100	13.5	106.3	106.3	7	119.3	119.3	3
Barium		500		513.6	102.7	-4.1	517.2	103.4	4
Beryllium		500		484.4	96.9		486.4	97.3	0.5
Cadmium		1000	4.1	930.1	93.0	3.9	928.3	92.8	0.7
Calcium	500000	500000	526779	550911.4	110.2	529644	546643.1	109.3	
Chromium		500		482.9	96.6		482.0	96.4	0.6
Cobalt		500		443.7	88.7		442.1	88.4	0.9
Copper		500	12.7	551.5	110.3		529.7	105.9	4
Iron	200000	200000	177713	184639.7	92.3	180643	185632.0	92.8	
Lead		500		465.4	93.1	4.3	471.7	94.3	4
Magnesium	500000	500000	488785	507105.4	101.4	497071	510317.6	102.1	
Manganese		500	7.8	508.1	101.6	8.3	519.2	103.8	0.8
Mercury									
Nickel		1000	9.2	921.6	92.2	9.7	940.2	94.0	0.8
Potassium									
Selenium		500		490.2	98.0	-9.1	480.6	96.1	9
Silver		200	-11.7	208.1	104.0	-14.5	199.5	99.8	2
Sodium									
Thallium		100	20.7	113.8	113.8	24.6	119.6	119.6	3
Vanadium		500	-2.7	496.2	99.2	-2.4	497.1	99.4	0.2
Zinc		1000		901.2	90.1		897.6	89.8	7

001940

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-104	10.1		IRON	200000	-7.6	77248	-2.94	L	na
Arsenic	3	FTA-SS-104	62.3		IRON	200000	21	77248	8.11	K	na
Barium	4	FTA-SS-104	477.7		IRON	200000	-4.1	77248	-1.58	na	na
Cadmium	0.7	FTA-SS-104	3.4		IRON	200000	4.3	77248	1.66	K	na
Copper	4	FTA-SS-104	77.5		IRON	200000	12.7	77248	4.91	na	na
Lead	4	FTA-SS-104	439.3		IRON	200000	4.3	77248	1.66	na	na
Manganese	0.8	FTA-SS-104	1170.5		IRON	200000	8.3	77248	3.21	na	na
Nickel	0.8	FTA-SS-104	64.1		IRON	200000	10	77248	3.86	na	na
Selenium	9	FTA-SS-104		U	IRON	200000	-9.7	77248	-3.75	na	UL
Silver	2	FTA-SS-104		U	IRON	200000	-14.5	77248	-5.60	na	UR
Thallium	3	FTA-SS-104	4.9		IRON	200000	24.6	77248	9.50	R	na
Vanadium	0.2	FTA-SS-104	153.5		IRON	200000	-2.7	77248	-1.04	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-104-0204		U	IRON	200000	-7.6	60859	-2.31	na	UL
Arsenic	3	FTA-SU-104-0204	26.2		IRON	200000	21	60859	6.39	K	na
Barium	4	FTA-SU-104-0204	450.8		IRON	200000	-4.1	60859	-1.25	na	na
Cadmium	0.7	FTA-SU-104-0204		U	IRON	200000	4.3	60859	1.31	na	na
Copper	4	FTA-SU-104-0204	45		IRON	200000	12.7	60859	3.86	na	na
Lead	4	FTA-SU-104-0204	505.5		IRON	200000	4.3	60859	1.31	na	na
Manganese	0.8	FTA-SU-104-0204	362.5		IRON	200000	8.3	60859	2.53	na	na
Nickel	0.8	FTA-SU-104-0204	45.3		IRON	200000	10	60859	3.04	na	na
Selenium	9	FTA-SU-104-0204		U	IRON	200000	-9.7	60859	-2.95	na	UL
Silver	2	FTA-SU-104-0204		U	IRON	200000	-14.5	60859	-4.41	na	UR
Thallium	3	FTA-SU-104-0204	6.6		IRON	200000	24.6	60859	7.49	R	na
Vanadium	0.2	FTA-SU-104-0204	131.7		IRON	200000	-2.7	60859	-0.82	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-104-0911		U	IRON	200000	-7.6	29787	-1.13	na	UL
Arsenic	3	FTA-SU-104-0911	30.4		IRON	200000	21	29787	3.13	K	na
Barium	4	FTA-SU-104-0911	170.7		IRON	200000	-4.1	29787	-0.61	na	na
Cadmium	0.7	FTA-SU-104-0911		U	IRON	200000	4.3	29787	0.64	na	na
Copper	4	FTA-SU-104-0911	14.7		IRON	200000	12.7	29787	1.89	K	na
Lead	4	FTA-SU-104-0911	48.2		IRON	200000	4.3	29787	0.64	na	na
Manganese	0.8	FTA-SU-104-0911	181.8		IRON	200000	8.3	29787	1.24	na	na
Nickel	0.8	FTA-SU-104-0911	14.4		IRON	200000	10	29787	1.49	K	na
Selenium	9	FTA-SU-104-0911		U	IRON	200000	-9.7	29787	-1.44	na	UL
Silver	2	FTA-SU-104-0911		U	IRON	200000	-14.5	29787	-2.16	na	UR
Thallium	3	FTA-SU-104-0911	7.2		IRON	200000	24.6	29787	3.66	K	na
Vanadium	0.2	FTA-SU-104-0911	76.3		IRON	200000	-2.7	29787	-0.40	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-105	10.5		IRON	200000	-7.6	116000	-4.41	L	na
Arsenic	3	FTA-SS-105	117.6		IRON	200000	21	116000	12.18	K	na
Barium	4	FTA-SS-105	993.1		IRON	200000	-4.1	116000	-2.38	na	na
Cadmium	0.7	FTA-SS-105	2.9		IRON	200000	4.3	116000	2.49	K	na
Copper	4	FTA-SS-105	83.3		IRON	200000	12.7	116000	7.37	na	na
Lead	4	FTA-SS-105	337.6		IRON	200000	4.3	116000	2.49	na	na
Manganese	0.8	FTA-SS-105	2333.1		IRON	200000	8.3	116000	4.81	na	na
Nickel	0.8	FTA-SS-105	83.2		IRON	200000	10	116000	5.80	na	na
Selenium	9	FTA-SS-105		U	IRON	200000	-9.7	116000	-5.63	na	UL
Silver	2	FTA-SS-105		U	IRON	200000	-14.5	116000	-8.41	na	UR
Thallium	3	FTA-SS-105	4.4		IRON	200000	24.6	116000	14.27	R	na
Vanadium	0.2	FTA-SS-105	220		IRON	200000	-2.7	116000	-1.57	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-105-0204	10.7		IRON	200000	-7.6	54796	-2.08	L	na
Arsenic	3	FTA-SU-105-0204	25.2		IRON	200000	21	54796	5.75	K	na
Barium	4	FTA-SU-105-0204	338.2		IRON	200000	-4.1	54796	-1.12	na	na
Cadmium	0.7	FTA-SU-105-0204		U	IRON	200000	4.3	54796	1.18	na	na
Copper	4	FTA-SU-105-0204	52.9		IRON	200000	12.7	54796	3.48	na	na
Lead	4	FTA-SU-105-0204	79.9		IRON	200000	4.3	54796	1.18	na	na
Manganese	0.8	FTA-SU-105-0204	236.9		IRON	200000	8.3	54796	2.27	na	na
Nickel	0.8	FTA-SU-105-0204	39.5		IRON	200000	10	54796	2.74	na	na
Selenium	9	FTA-SU-105-0204		U	IRON	200000	-9.7	54796	-2.66	na	UL
Silver	2	FTA-SU-105-0204		U	IRON	200000	-14.5	54796	-3.97	na	UR
Thallium	3	FTA-SU-105-0204	7.6		IRON	200000	24.6	54796	6.74	K	na
Vanadium	0.2	FTA-SU-105-0204	115.4		IRON	200000	-2.7	54796	-0.74	na	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-105-0911		U	IRON	200000	-7.6	32215	-1.22	na	UL
Arsenic	3	FTA-SU-105-0911	35.3		IRON	200000	21	32215	3.38	na	na
Barium	4	FTA-SU-105-0911	238.6		IRON	200000	-4.1	32215	-0.66	na	na
Cadmium	0.7	FTA-SU-105-0911		U	IRON	200000	4.3	32215	0.69	na	na
Copper	4	FTA-SU-105-0911	13.7		IRON	200000	12.7	32215	2.05	K	na
Lead	4	FTA-SU-105-0911	35.5		IRON	200000	4.3	32215	0.69	na	na
Manganese	0.8	FTA-SU-105-0911	148		IRON	200000	8.3	32215	1.34	na	na
Nickel	0.8	FTA-SU-105-0911	18.4		IRON	200000	10	32215	1.61	na	na
Selenium	9	FTA-SU-105-0911		U	IRON	200000	-9.7	32215	-1.56	na	UL
Silver	2	FTA-SU-105-0911		U	IRON	200000	-14.5	32215	-2.34	na	UR
Thallium	3	FTA-SU-105-0911	4.9		IRON	200000	24.6	32215	3.96	K	na
Vanadium	0.2	FTA-SU-105-0911	83.1		IRON	200000	-2.7	32215	-0.43	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-106	28		IRON	200000	-7.6	80990	-3.08	L	na
Arsenic	3	FTA-SS-106	59.6		IRON	200000	21	80990	8.50	K	na
Barium	4	FTA-SS-106	619.2		IRON	200000	-4.1	80990	-1.66	na	na
Cadmium	0.7	FTA-SS-106	6.6		IRON	200000	4.3	80990	1.74	K	na
Copper	4	FTA-SS-106	68.6		IRON	200000	12.7	80990	5.14	na	na
Lead	4	FTA-SS-106	231		IRON	200000	4.3	80990	1.74	na	na
Manganese	0.8	FTA-SS-106	1421.3		IRON	200000	8.3	80990	3.36	na	na
Nickel	0.8	FTA-SS-106	69.6		IRON	200000	10	80990	4.05	na	na
Selenium	9	FTA-SS-106		U	IRON	200000	-9.7	80990	-3.93	na	UL
Silver	2	FTA-SS-106		U	IRON	200000	-14.5	80990	-5.87	na	UR
Thallium	3	FTA-SS-106	3.7		IRON	200000	24.6	80990	9.96	R	na
Vanadium	0.2	FTA-SS-106	218.3		IRON	200000	-2.7	80990	-1.09	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-106-0204	3.9		IRON	200000	-7.6	71785	-2.73	L	na
Arsenic	3	FTA-SU-106-0204	33.7		IRON	200000	21	71785	7.54	K	na
Barium	4	FTA-SU-106-0204	355.8		IRON	200000	-4.1	71785	-1.47	na	na
Cadmium	0.7	FTA-SU-106-0204	0.7		IRON	200000	4.3	71785	1.54	R	na
Copper	4	FTA-SU-106-0204	55		IRON	200000	12.7	71785	4.56	na	na
Lead	4	FTA-SU-106-0204	59.7		IRON	200000	4.3	71785	1.54	na	na
Manganese	0.8	FTA-SU-106-0204	745.6		IRON	200000	8.3	71785	2.98	na	na
Nickel	0.8	FTA-SU-106-0204	49.2		IRON	200000	10	71785	3.59	na	na
Selenium	9	FTA-SU-106-0204		U	IRON	200000	-9.7	71785	-3.48	na	UL
Silver	2	FTA-SU-106-0204		U	IRON	200000	-14.5	71785	-5.20	na	UR
Thallium	3	FTA-SU-106-0204	6.1		IRON	200000	24.6	71785	8.83	R	na
Vanadium	0.2	FTA-SU-106-0204	139.7		IRON	200000	-2.7	71785	-0.97	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-106-1113	4.2		IRON	200000	-7.6	46336	-1.76	L	na
Arsenic	3	FTA-SU-106-1113	38.9		IRON	200000	21	46336	4.87	K	na
Barium	4	FTA-SU-106-1113	254.9		IRON	200000	-4.1	46336	-0.95	na	na
Cadmium	0.7	FTA-SU-106-1113	0.8		IRON	200000	4.3	46336	1.00	R	na
Copper	4	FTA-SU-106-1113	19.4		IRON	200000	12.7	46336	2.94	K	na
Lead	4	FTA-SU-106-1113	31.6		IRON	200000	4.3	46336	1.00	na	na
Manganese	0.8	FTA-SU-106-1113	935.5		IRON	200000	8.3	46336	1.92	na	na
Nickel	0.8	FTA-SU-106-1113	20.5		IRON	200000	10	46336	2.32	K	na
Selenium	9	FTA-SU-106-1113		U	IRON	200000	-9.7	46336	-2.25	na	UL
Silver	2	FTA-SU-106-1113		U	IRON	200000	-14.5	46336	-3.36	na	UR
Thallium	3	FTA-SU-106-1113	5.1		IRON	200000	24.6	46336	5.70	R	na
Vanadium	0.2	FTA-SU-106-1113	78.8		IRON	200000	-2.7	46336	-0.63	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-107		U	IRON	200000	-7.6	94121	-3.58	na	UR
Arsenic	3	FTA-SS-107	56.5		IRON	200000	21	94121	9.88	K	na
Barium	4	FTA-SS-107	562.5		IRON	200000	-4.1	94121	-1.93	na	na
Cadmium	0.7	FTA-SS-107	2.7		IRON	200000	4.3	94121	2.02	K	na
Copper	4	FTA-SS-107	57.7		IRON	200000	12.7	94121	5.98	K	na
Lead	4	FTA-SS-107	198.7		IRON	200000	4.3	94121	2.02	na	na
Manganese	0.8	FTA-SS-107	2214.7		IRON	200000	8.3	94121	3.91	na	na
Nickel	0.8	FTA-SS-107	64.5		IRON	200000	10	94121	4.71	na	na
Selenium	9	FTA-SS-107		U	IRON	200000	-9.7	94121	-4.56	na	UL
Silver	2	FTA-SS-107		U	IRON	200000	-14.5	94121	-6.82	na	UR
Thallium	3	FTA-SS-107	3.2		IRON	200000	24.6	94121	11.58	R	na
Vanadium	0.2	FTA-SS-107	186.1		IRON	200000	-2.7	94121	-1.27	na	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-107-0204		U	IRON	200000	-7.6	67868	-2.58	na	UL
Arsenic	3	FTA-SU-107-0204	32.1		IRON	200000	21	67868	7.13	K	na
Barium	4	FTA-SU-107-0204	450.4		IRON	200000	-4.1	67868	-1.39	na	na
Cadmium	0.7	FTA-SU-107-0204		U	IRON	200000	4.3	67868	1.46	na	na
Copper	4	FTA-SU-107-0204	48.6		IRON	200000	12.7	67868	4.31	na	na
Lead	4	FTA-SU-107-0204	66.7		IRON	200000	4.3	67868	1.46	na	na
Manganese	0.8	FTA-SU-107-0204	944		IRON	200000	8.3	67868	2.82	na	na
Nickel	0.8	FTA-SU-107-0204	51.4		IRON	200000	10	67868	3.39	na	na
Selenium	9	FTA-SU-107-0204		U	IRON	200000	-9.7	67868	-3.29	na	UL
Silver	2	FTA-SU-107-0204		U	IRON	200000	-14.5	67868	-4.92	na	UR
Thallium	3	FTA-SU-107-0204	7.4		IRON	200000	24.6	67868	8.35	R	na
Vanadium	0.2	FTA-SU-107-0204	143.8		IRON	200000	-2.7	67868	-0.92	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-107-1113		U	IRON	200000	-7.6	22435	-0.85	na	UL
Arsenic	3	FTA-SU-107-1113	31.6		IRON	200000	21	22435	2.36	na	na
Barium	4	FTA-SU-107-1113	95.7		IRON	200000	-4.1	22435	-0.46	na	na
Cadmium	0.7	FTA-SU-107-1113		U	IRON	200000	4.3	22435	0.48	na	na
Copper	4	FTA-SU-107-1113	5.9		IRON	200000	12.7	22435	1.42	K	na
Lead	4	FTA-SU-107-1113	21		IRON	200000	4.3	22435	0.48	na	na
Manganese	0.8	FTA-SU-107-1113	129.9		IRON	200000	8.3	22435	0.93	na	na
Nickel	0.8	FTA-SU-107-1113	7.8		IRON	200000	10	22435	1.12	K	na
Selenium	9	FTA-SU-107-1113		U	IRON	200000	-9.7	22435	-1.09	na	UL
Silver	2	FTA-SU-107-1113		U	IRON	200000	-14.5	22435	-1.63	na	UL
Thallium	3	FTA-SU-107-1113	3.1		IRON	200000	24.6	22435	2.76	K	na
Vanadium	0.2	FTA-SU-107-1113	41.6		IRON	200000	-2.7	22435	-0.30	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-108		U	IRON	200000	-7.6	65361	-2.48	na	UL
Arsenic	3	FTA-SS-108	27.5		IRON	200000	21	65361	6.86	K	na
Barium	4	FTA-SS-108	257.8		IRON	200000	-4.1	65361	-1.34	na	na
Cadmium	0.7	FTA-SS-108	2		IRON	200000	4.3	65361	1.41	K	na
Copper	4	FTA-SS-108	42.7		IRON	200000	12.7	65361	4.15	na	na
Lead	4	FTA-SS-108	126.5		IRON	200000	4.3	65361	1.41	na	na
Manganese	0.8	FTA-SS-108	1207.9		IRON	200000	8.3	65361	2.71	na	na
Nickel	0.8	FTA-SS-108	58		IRON	200000	10	65361	3.27	na	na
Selenium	9	FTA-SS-108		U	IRON	200000	-9.7	65361	-3.17	na	UL
Silver	2	FTA-SS-108		U	IRON	200000	-14.5	65361	-4.74	na	UR
Thallium	3	FTA-SS-108	5.3		IRON	200000	24.6	65361	8.04	R	na
Vanadium	0.2	FTA-SS-108	132.9		IRON	200000	-2.7	65361	-0.88	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-108-0204	6.3		IRON	200000	-7.6	67329	-2.56	L	na
Arsenic	3	FTA-SU-108-0204	37.2		IRON	200000	21	67329	7.07	K	na
Barium	4	FTA-SU-108-0204	435.1		IRON	200000	-4.1	67329	-1.38	na	na
Cadmium	0.7	FTA-SU-108-0204		U	IRON	200000	4.3	67329	1.45	na	na
Copper	4	FTA-SU-108-0204	63.5		IRON	200000	12.7	67329	4.28	na	na
Lead	4	FTA-SU-108-0204	61.4		IRON	200000	4.3	67329	1.45	na	na
Manganese	0.8	FTA-SU-108-0204	624.2		IRON	200000	8.3	67329	2.79	na	na
Nickel	0.8	FTA-SU-108-0204	60.7		IRON	200000	10	67329	3.37	na	na
Selenium	9	FTA-SU-108-0204		U	IRON	200000	-9.7	67329	-3.27	na	UL
Silver	2	FTA-SU-108-0204		U	IRON	200000	-14.5	67329	-4.88	na	UR
Thallium	3	FTA-SU-108-0204	7.6		IRON	200000	24.6	67329	8.28	R	na
Vanadium	0.2	FTA-SU-108-0204	160.5		IRON	200000	-2.7	67329	-0.91	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-108-0709	4.9		IRON	200000	-7.6	38234	-1.45	L	na
Arsenic	3	FTA-SU-108-0709	24.8		IRON	200000	21	38234	4.01	K	na
Barium	4	FTA-SU-108-0709	234.2		IRON	200000	-4.1	38234	-0.78	na	na
Cadmium	0.7	FTA-SU-108-0709		U	IRON	200000	4.3	38234	0.82	na	na
Copper	4	FTA-SU-108-0709	27.3		IRON	200000	12.7	38234	2.43	na	na
Lead	4	FTA-SU-108-0709	35.9		IRON	200000	4.3	38234	0.82	na	na
Manganese	0.8	FTA-SU-108-0709	385.1		IRON	200000	8.3	38234	1.59	na	na
Nickel	0.8	FTA-SU-108-0709	28.2		IRON	200000	10	38234	1.91	na	na
Selenium	9	FTA-SU-108-0709		U	IRON	200000	-9.7	38234	-1.85	na	UL
Silver	2	FTA-SU-108-0709		U	IRON	200000	-14.5	38234	-2.77	na	UR
Thallium	3	FTA-SU-108-0709	4.7		IRON	200000	24.6	38234	4.70	R	na
Vanadium	0.2	FTA-SU-108-0709	102		IRON	200000	-2.7	38234	-0.52	na	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-109	3.1		IRON	200000	-7.6	63925	-2.43	L	na
Arsenic	3	FTA-SS-109	35.1		IRON	200000	21	63925	6.71	K	na
Barium	4	FTA-SS-109	193.5		IRON	200000	-4.1	63925	-1.31	na	na
Cadmium	0.7	FTA-SS-109	2.6		IRON	200000	4.3	63925	1.37	K	na
Copper	4	FTA-SS-109	46		IRON	200000	12.7	63925	4.06	na	na
Lead	4	FTA-SS-109	125.3		IRON	200000	4.3	63925	1.37	na	na
Manganese	0.8	FTA-SS-109	845.5		IRON	200000	8.3	63925	2.65	na	na
Nickel	0.8	FTA-SS-109	61.7		IRON	200000	10	63925	3.20	na	na
Selenium	9	FTA-SS-109		U	IRON	200000	-9.7	63925	-3.10	na	UL
Silver	2	FTA-SS-109		U	IRON	200000	-14.5	63925	-4.63	na	UR
Thallium	3	FTA-SS-109	4		IRON	200000	24.6	63925	7.86	R	na
Vanadium	0.2	FTA-SS-109	146.7		IRON	200000	-2.7	63925	-0.86	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-109-0204	3.6		IRON	200000	-7.6	49743	-1.89	L	na
Arsenic	3	FTA-SU-109-0204	25.6		IRON	200000	21	49743	5.22	K	na
Barium	4	FTA-SU-109-0204	346.8		IRON	200000	-4.1	49743	-1.02	na	na
Cadmium	0.7	FTA-SU-109-0204		U	IRON	200000	4.3	49743	1.07	na	na
Copper	4	FTA-SU-109-0204	47		IRON	200000	12.7	49743	3.16	na	na
Lead	4	FTA-SU-109-0204	47.3		IRON	200000	4.3	49743	1.07	na	na
Manganese	0.8	FTA-SU-109-0204	443.2		IRON	200000	8.3	49743	2.06	na	na
Nickel	0.8	FTA-SU-109-0204	36.9		IRON	200000	10	49743	2.49	na	na
Selenium	9	FTA-SU-109-0204		U	IRON	200000	-9.7	49743	-2.41	na	UL
Silver	2	FTA-SU-109-0204		U	IRON	200000	-14.5	49743	-3.61	na	UR
Thallium	3	FTA-SU-109-0204	6.1		IRON	200000	24.6	49743	6.12	R	na
Vanadium	0.2	FTA-SU-109-0204	100.7		IRON	200000	-2.7	49743	-0.67	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-109-0709	6.3		IRON	200000	-7.6	33275	-1.26	L	na
Arsenic	3	FTA-SU-109-0709	31.9		IRON	200000	21	33275	3.49	K	na
Barium	4	FTA-SU-109-0709	172.9		IRON	200000	-4.1	33275	-0.68	na	na
Cadmium	0.7	FTA-SU-109-0709		U	IRON	200000	4.3	33275	0.72	na	na
Copper	4	FTA-SU-109-0709	7.6		IRON	200000	12.7	33275	2.11	K	na
Lead	4	FTA-SU-109-0709	23.5		IRON	200000	4.3	33275	0.72	na	na
Manganese	0.8	FTA-SU-109-0709	282		IRON	200000	8.3	33275	1.38	na	na
Nickel	0.8	FTA-SU-109-0709	12.3		IRON	200000	10	33275	1.66	K	na
Selenium	9	FTA-SU-109-0709		U	IRON	200000	-9.7	33275	-1.61	na	UL
Silver	2	FTA-SU-109-0709		U	IRON	200000	-14.5	33275	-2.41	na	UR
Thallium	3	FTA-SU-109-0709	4.1		IRON	200000	24.6	33275	4.09	K	na
Vanadium	0.2	FTA-SU-109-0709	76.2		IRON	200000	-2.7	33275	-0.45	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-110	3.3		IRON	200000	-7.6	67664	-2.57	L	na
Arsenic	3	FTA-SS-110	32.7		IRON	200000	21	67664	7.10	K	na
Barium	4	FTA-SS-110	180.7		IRON	200000	-4.1	67664	-1.39	na	na
Cadmium	0.7	FTA-SS-110	1		IRON	200000	4.3	67664	1.45	R	na
Copper	4	FTA-SS-110	42.9		IRON	200000	12.7	67664	4.30	K	na
Lead	4	FTA-SS-110	124.2		IRON	200000	4.3	67664	1.45	na	na
Manganese	0.8	FTA-SS-110	1221.1		IRON	200000	8.3	67664	2.81	na	na
Nickel	0.8	FTA-SS-110	68.7		IRON	200000	10	67664	3.38	na	na
Selenium	9	FTA-SS-110		U	IRON	200000	-9.7	67664	-3.28	na	UL
Silver	2	FTA-SS-110		U	IRON	200000	-14.5	67664	-4.91	na	UR
Thallium	3	FTA-SS-110	6.4		IRON	200000	24.6	67664	8.32	R	na
Vanadium	0.2	FTA-SS-110	125.5		IRON	200000	-2.7	67664	-0.91	na	na

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Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-111	3.2		IRON	200000	-7.6	38943	-1.48	L	na
Arsenic	3	FTA-SS-111	23.6		IRON	200000	21	38943	4.09	K	na
Barium	4	FTA-SS-111	257.1		IRON	200000	-4.1	38943	-0.80	na	na
Cadmium	0.7	FTA-SS-111	1.1		IRON	200000	4.3	38943	0.84	K	na
Copper	4	FTA-SS-111	50.6		IRON	200000	12.7	38943	2.47	na	na
Lead	4	FTA-SS-111	143.7		IRON	200000	4.3	38943	0.84	na	na
Manganese	0.8	FTA-SS-111	995.6		IRON	200000	8.3	38943	1.62	na	na
Nickel	0.8	FTA-SS-111	34.6		IRON	200000	10	38943	1.95	na	na
Selenium	9	FTA-SS-111		U	IRON	200000	-9.7	38943	-1.89	na	UL
Silver	2	FTA-SS-111		U	IRON	200000	-14.5	38943	-2.82	na	UR
Thallium	3	FTA-SS-111	24	U	IRON	200000	24.6	38943	4.79	R	na
Vanadium	0.2	FTA-SS-111	127.3		IRON	200000	-2.7	38943	-0.53	na	na

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum	500000	500000	497782	517700.5	103.5	499035	514861.3	103.0	
Antimony		600		579.8	96.6	-7.6	599.9	100.0	3
Arsenic		100	13.5	106.3	106.3	17	98.9	98.9	3
Barium		500		513.6	102.7		517.3	103.5	4
Beryllium		500		484.4	96.9		481.8	96.4	0.5
Cadmium		1000	4.1	930.1	93.0	4	913.3	91.3	0.7
Calcium	500000	500000	526779	550911.4	110.2	518530	537745.8	107.5	
Chromium		500		482.9	96.6		473.6	94.7	0.6
Cobalt		500		443.7	88.7		446.3	89.3	0.9
Copper		500	12.7	551.5	110.3	6.3	525.0	105.0	4
Iron	200000	200000	177713	184639.7	92.3	178159	183775.5	91.9	
Lead		500		465.4	93.1	7.1	473.5	94.7	4
Magnesium	500000	500000	488785	507105.4	101.4	490503	505077.7	101.0	
Manganese		500	7.8	508.1	101.6	7.9	498.9	99.8	0.8
Mercury									
Nickel		1000	9.2	921.6	92.2	10	908.9	90.9	0.8
Potassium									
Selenium		500		490.2	98.0		499.2	99.8	9
Silver		200	-11.7	208.1	104.0	-13.3	198.7	99.4	2
Sodium									
Thallium		100	20.7	113.8	113.8		102.4	102.4	3
Vanadium		500	-2.7	496.2	99.2	19.5	486.9	97.4	0.2
Zinc		1000		901.2	90.1	-2.6	883.2	88.3	7

001991

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R	IDL
Aluminum	500000	500000	499578	489163.8	97.8	504886	498241.0	99.6	
Antimony		600	-4.2	603.5	100.6	-8.9	580.8	96.8	3
Arsenic		100		90.5	90.5	-9.9	86.5	86.5	3
Barium		500	-5.2	490.9	98.2	-6.6	480.8	96.2	4
Beryllium		500		478.6	95.7		488.0	97.6	0.5
Cadmium		1000	1.7	881.8	88.2	2.5	911.8	91.2	0.7
Calcium	500000	500000	519343	509147.2	101.8	539724	520640.4	104.1	
Chromium		500		463.5	92.7		477.2	95.4	0.6
Cobalt		500	-2.1	439.2	87.8		456.6	91.3	0.9
Copper		500	13.5	522.2	104.4		519.1	103.8	4
Iron	200000	200000	178412	175011.0	87.5	179931	176953.7	88.5	
Lead		500	9.2	467.1	93.4	11.3	467.5	93.5	4
Magnesium	500000	500000	490543	480359.8	96.1	497721	488474.0	97.7	
Manganese		500	-6.1	464.0	92.8	-6.7	447.2	89.4	0.8
Mercury									
Nickel		1000	0.9	875.2	87.5		854.9	85.5	0.8
Potassium									
Selenium		500	-14.1	489.6	97.9		507.6	101.5	9
Silver		200	-10.7	172.7	86.4	-10.6	184.2	92.1	2
Sodium									
Thallium		100	4.3	94.7	94.7		96.3	96.3	3
Vanadium		500	-1.7	476.0	95.2	-1.8	481.9	96.4	0.2
Zinc		1000		864.9	86.5		891.6	89.2	7

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-110-0204		U	IRON	200000	-8.9	43532	-1.94	na	UL
Barium	4	FTA-SU-110-0204	274.6		IRON	200000	-6.6	43532	-1.44	na	na
Cobalt	0.9	FTA-SU-110-0204	16.1		IRON	200000	-2.1	43532	-0.46	na	na
Selenium	9	FTA-SU-110-0204		U	IRON	200000	-14.1	43532	-3.07	na	UL
Silver	2	FTA-SU-110-0204		U	IRON	200000	-13.3	43532	-2.89	na	UR
Vanadium	0.2	FTA-SU-110-0204	92.4		IRON	200000	-2.7	43532	-0.59	na	na
Arsenic	3	FTA-SU-110-0204	21.3		IRON	200000	13.5	43532	2.94	K	na
Cadmium	0.7	FTA-SU-110-0204		U	IRON	200000	4.1	43532	0.89	na	na
Copper	4	FTA-SU-110-0204	51.2		IRON	200000	13.5	43532	2.94	na	na
Lead	4	FTA-SU-110-0204	50.4		IRON	200000	11.3	43532	2.46	na	na
Manganese	0.8	FTA-SU-110-0204	618.2		IRON	200000	7.9	43532	1.72	na	na
Nickel	0.8	FTA-SU-110-0204	40.4		IRON	200000	10	43532	2.18	na	na
Thallium	3	FTA-SU-110-0204		U	IRON	200000	20.7	43532	4.51	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-110-0709		U	IRON	200000	-8.9	72225	-3.21	na	UR
Barium	4	FTA-SU-110-0709	713.1		IRON	200000	-6.6	72225	-2.38	na	na
Cobalt	0.9	FTA-SU-110-0709	41		IRON	200000	-2.1	72225	-0.76	na	na
Selenium	9	FTA-SU-110-0709		U	IRON	200000	-14.1	72225	-5.09	na	UL
Silver	2	FTA-SU-110-0709		U	IRON	200000	-13.3	72225	-4.80	na	UR
Vanadium	0.2	FTA-SU-110-0709	194.8		IRON	200000	-2.7	72225	-0.98	na	na
Arsenic	3	FTA-SU-110-0709	65.1		IRON	200000	13.5	72225	4.88	na	na
Cadmium	0.7	FTA-SU-110-0709		U	IRON	200000	4.1	72225	1.48	na	na
Copper	4	FTA-SU-110-0709	47.5		IRON	200000	13.5	72225	4.88	K	na
Lead	4	FTA-SU-110-0709	49.6		IRON	200000	11.3	72225	4.08	na	na
Manganese	0.8	FTA-SU-110-0709	942		IRON	200000	7.9	72225	2.85	na	na
Nickel	0.8	FTA-SU-110-0709	61		IRON	200000	10	72225	3.61	na	na
Thallium	3	FTA-SU-110-0709	4.7		IRON	200000	20.7	72225	7.48	R	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SS-DUP1		U	IRON	200000	-8.9	54269	-2.41	na	UL
Barium	4	FTA-SS-DUP1	137.7		IRON	200000	-6.6	54269	-1.79	na	na
Cobalt	0.9	FTA-SS-DUP1	23.7		IRON	200000	-2.1	54269	-0.57	na	na
Selenium	9	FTA-SS-DUP1		U	IRON	200000	-14.1	54269	-3.83	na	UL
Silver	2	FTA-SS-DUP1		U	IRON	200000	-13.3	54269	-3.61	na	UR
Vanadium	0.2	FTA-SS-DUP1	94.3		IRON	200000	-2.7	54269	-0.73	na	na
Arsenic	3	FTA-SS-DUP1	27.9		IRON	200000	13.5	54269	3.66	K	na
Cadmium	0.7	FTA-SS-DUP1		U	IRON	200000	4.1	54269	1.11	na	na
Copper	4	FTA-SS-DUP1	50.3		IRON	200000	13.5	54269	3.66	na	na
Lead	4	FTA-SS-DUP1	95		IRON	200000	11.3	54269	3.07	na	na
Manganese	0.8	FTA-SS-DUP1	620		IRON	200000	7.9	54269	2.14	na	na
Nickel	0.8	FTA-SS-DUP1	65.4		IRON	200000	10	54269	2.71	na	na
Thallium	3	FTA-SS-DUP1		U	IRON	200000	20.7	54269	5.62	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-DUP2		U	IRON	200000	-8.9	67201	-2.99	na	UL
Barium	4	FTA-SU-DUP2	601.1		IRON	200000	-6.6	67201	-2.22	na	na
Cobalt	0.9	FTA-SU-DUP2	21.6		IRON	200000	-2.1	67201	-0.71	na	na
Selenium	9	FTA-SU-DUP2		U	IRON	200000	-14.1	67201	-4.74	na	UL
Silver	2	FTA-SU-DUP2		U	IRON	200000	-13.3	67201	-4.47	na	UR
Vanadium	0.2	FTA-SU-DUP2	157.6		IRON	200000	-2.7	67201	-0.91	na	na
Arsenic	3	FTA-SU-DUP2	20.4		IRON	200000	13.5	67201	4.54	K	na
Cadmium	0.7	FTA-SU-DUP2		U	IRON	200000	4.1	67201	1.38	na	na
Copper	4	FTA-SU-DUP2	74.5		IRON	200000	13.5	67201	4.54	na	na
Lead	4	FTA-SU-DUP2	69.7		IRON	200000	11.3	67201	3.80	na	na
Manganese	0.8	FTA-SU-DUP2	677.8		IRON	200000	7.9	67201	2.65	na	na
Nickel	0.8	FTA-SU-DUP2	55.9		IRON	200000	10	67201	3.36	na	na
Thallium	3	FTA-SU-DUP2	3.8		IRON	200000	20.7	67201	6.96	R	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-DUP2		U	IRON	200000	-8.9	67201	-2.99	na	UL
Barium	4	FTA-SU-DUP2	601.1		IRON	200000	-6.6	67201	-2.22	na	na
Cobalt	0.9	FTA-SU-DUP2	21.6		IRON	200000	-2.1	67201	-0.71	na	na
Selenium	9	FTA-SU-DUP2		U	IRON	200000	-14.1	67201	-4.74	na	UL
Silver	2	FTA-SU-DUP2		U	IRON	200000	-13.3	67201	-4.47	na	UR
Vanadium	0.2	FTA-SU-DUP2	157.6		IRON	200000	-2.7	67201	-0.91	na	na
Arsenic	3	FTA-SU-DUP2	20.4		IRON	200000	13.5	67201	4.54	K	na
Cadmium	0.7	FTA-SU-DUP2		U	IRON	200000	4.1	67201	1.38	na	na
Copper	4	FTA-SU-DUP2	74.5		IRON	200000	13.5	67201	4.54	na	na
Lead	4	FTA-SU-DUP2	69.7		IRON	200000	11.3	67201	3.80	na	na
Manganese	0.8	FTA-SU-DUP2	677.8		IRON	200000	7.9	67201	2.65	na	na
Nickel	0.8	FTA-SU-DUP2	55.9		IRON	200000	10	67201	3.36	na	na
Thallium	3	FTA-SU-DUP2	3.8		IRON	200000	20.7	67201	6.96	R	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTA-SU-111-0204		U	IRON	200000	-8.9	36111	-1.61	na	UL
Barium	4	FTA-SU-111-0204	143.6		IRON	200000	-6.6	36111	-1.19	na	na
Cobalt	0.9	FTA-SU-111-0204	5.3		IRON	200000	-2.1	36111	-0.38	na	na
Selenium	9	FTA-SU-111-0204		U	IRON	200000	-14.1	36111	-2.55	na	UL
Silver	2	FTA-SU-111-0204		U	IRON	200000	-13.3	36111	-2.40	na	UR
Vanadium	0.2	FTA-SU-111-0204	125.4		IRON	200000	-2.7	36111	-0.49	na	na
Arsenic	3	FTA-SU-111-0204	37.6		IRON	200000	13.5	36111	2.44	na	na
Cadmium	0.7	FTA-SU-111-0204		U	IRON	200000	4.1	36111	0.74	na	na
Copper	4	FTA-SU-111-0204	20.6		IRON	200000	13.5	36111	2.44	K	na
Lead	4	FTA-SU-111-0204	32.6		IRON	200000	11.3	36111	2.04	na	na
Manganese	0.8	FTA-SU-111-0204	359.6		IRON	200000	7.9	36111	1.43	na	na
Nickel	0.8	FTA-SU-111-0204	13.8		IRON	200000	10	36111	1.81	K	na
Thallium	3	FTA-SU-111-0204	3.5		IRON	200000	20.7	36111	3.74	R	na

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

SV1110204D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 91.0 % Solids for Duplicate: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		4279.1268		4233.0584		1.1		P
Antimony		0.1600	U	0.1600	U			P
Arsenic	0.8002	2.0052		2.0091		0.2		P
Barium		7.6592	B	7.4060	B	3.4		P
Beryllium		0.2280	B	0.2328	B	2.1		P
Cadmium		0.0373	U	0.0373	U			P
Calcium		71.9211	B	67.4596	B	6.4		P
Chromium	2.1338	5.0906		5.0683		0.4		P
Cobalt		0.2850	B	0.2034	B	33.4	*	P
Copper		1.0997	B	0.9681	B	12.7		P
Iron		1926.3467		1954.6226		1.5		P
Lead		1.7416	B	1.7411	B	0.0		P
Magnesium		184.7110	B	171.2577	B	7.6		P
Manganese	3.2007	19.1835		9.6456		66.2	*	P
Mercury		0.0172	U	0.0172	U			CV
Nickel		0.7351	B	0.7495	B	1.9		P
Potassium		199.7739	B	195.8761	B	2.0		P
Selenium		0.4801	U	0.4801	U			P
Silver		0.1067	U	0.1067	U			P
Sodium		15.6462	B	14.3094	B	8.9		P
Thallium		0.1859	B	0.2289	B	20.7	*	P
Vanadium		6.6876	B	6.7260	B	0.6		P
Zinc		1.5877	B	1.6160	B	1.8		P
Cyanide								NR

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

FTASS111S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199A

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	11.6223		0.1815	B	25.74	44.4	N	P
Arsenic	75-125	27.0721		1.3321		25.74	100.0		P
Barium	75-125	545.1589		14.5418		514.71	103.1		P
Beryllium	75-125	12.5788		0.1522	B	12.84	96.8		P
Cadmium	75-125	12.9646		0.0620	B	12.84	100.5		P
Calcium									NR
Chromium	75-125	54.0052		3.5951		51.47	97.9		P
Cobalt	75-125	128.1827		0.6037	B	128.39	99.4		P
Copper	75-125	66.3393		2.8635	B	63.91	99.3		P
Iron									NR
Lead	75-125	33.7125		8.1250		25.74	99.4		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.8461		0.0193	U	0.96	88.1		CV
Nickel	75-125	131.3044		1.9595	B	128.39	100.7		P
Potassium									NR
Selenium	75-125	22.9028		0.5090	U	25.74	89.0		P
Silver	75-125	60.6377		0.1131	U	63.91	94.9		P
Sodium									NR
Thallium	75-125	26.2446		0.1697	U	25.74	102.0		P
Vanadium	75-125	132.0870		7.1993	B	128.39	97.3		P
Zinc	75-125	138.0998		13.8206		128.39	96.8		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SV1110204S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0199B

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	11.2100		0.1600	U	24.27	46.2	N	P
Arsenic	75-125	23.8925		2.0052		24.27	~~90.2~~		P
Barium	75-125	489.4011		7.6592	B	485.44	99.2		P
Beryllium	75-125	11.7965		0.2280	B	12.11	95.5		P
Cadmium	75-125	11.2129		0.0373	U	12.11	92.6		P
Calcium									NR
Chromium	75-125	52.0448		5.0906		48.54	96.7		P
Cobalt	75-125	120.0078		0.2850	B	121.09	98.9		P
Copper	75-125	60.1703		1.0997	B	60.28	98.0		P
Iron									NR
Lead	75-125	24.9196		1.7416	B	24.27	95.5		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.7949		0.0172	U	0.7912 ~~0.86~~ 5 1111	102 ~~92.4~~ 5 1111		CV
Nickel	75-125	113.7563		0.7351	B	121.09	93.3		P
Potassium									NR
Selenium	75-125	20.5341		0.4801	U	24.27	84.6		P
Silver	75-125	50.7786		0.1067	U	60.28	84.2		P
Sodium									NR
Thallium	75-125	23.0679		0.1859	B	24.27	94.3		P
Vanadium	75-125	120.4157		6.6876	B	121.09	93.9		P
Zinc	75-125	118.6064		1.5877	B	121.09	96.6		P
Cyanide									NR

Comments:

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	FTA-SS-110		FTA-SS-DUP1				
Laboratory ID:	B0199-20A		B0199-23A				
Sample Date:	02/04/03		02/04/03				
Duplicate:	FTA-SS-DUP1		FTA-SS-110				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	4440		4420		0.5	0.85	1, IN
Antimony	0.16	L	0.15	UL	NC		
Arsenic	1.6	K	1.4	K	13.3	0.15	1, IN
Barium	8.9		6.7		28.2	0.2	1, IN
Beryllium	0.2		0.17		16.2	0.025	1, IN
Cadmium	0.051	R	0.034	U	NC		
Calcium	136		118		14.2	12	1, IN
Chromium	4.9		4.5		8.5	0.03	1, IN
Cobalt	1.6		1.2		28.6	0.045	1, IN
Copper	2.1	B	2.5		NC		
Iron	3330		2640		23.1	1.3	1, IN
Lead	6.1		4.6		28.0	0.2	1, IN
Magnesium	284		196		36.7	0.4	1, IN
Manganese	60.2		30.2	J	66.4	0.04	1, J
Mercury	0.019	U	0.018	U	NC		
Nickel	3.4		3.2		6.1	0.04	1, IN
Potassium	145	B	116	B	NC		
Selenium	0.44	UL	0.44	UL	NC		
Silver	0.099	UR	0.097	UR	NC		
Sodium	24.8	B	32.6	B	NC		
Thallium	0.32	R	0.15	U	NC		
Vanadium	6.2		4.6		29.6	0.035	1, IN
Zinc	6.1		4.7		25.9	0.35	1, IN

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.
2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.
Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.
U - the compound was not detected in the sample at or above the associated numerical value.
NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.
J - The positive results should be considered estimated.
B - The result should be considered non-detected or qualitatively questionable due to blank contamination.
IN - The results are acceptable.

COMMENTS

Mn estimated (J) due to field duplicate imprecision.

4/29/03

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	FTA-SU-110-0204		FTA-SU-DUP2				
Laboratory ID:	B0199-21A		B0199-24A				
Sample Date:	02/04/03		02/04/03				
Duplicate:	FTA-SU-DUP2		FTA-SU-110-0204				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	5720		12400		-73.7	0.9	1, J
Antimony	0	UL	0	UL	NC		
Arsenic	1	K	1	K	0.0	0.2	1, IN
Barium	14.6		31.9		-74.4	0.2	1, J
Beryllium	0.22		0.37		-50.8	0.025	1, J
Cadmium	0.037	U	0.037	U	NC		
Calcium	101		148		-37.8	12	1, IN
Chromium	4.9		8.6		-54.8	0.03	1, J
Cobalt	0.86		1.1		-24.5	0.045	1, IN
Copper	2.7		4		-38.8	0.2	1, IN
Iron	2320		3570		-42.4	1.3	1, IN
Lead	2.7		3.7		-31.3	0.2	1, IN
Magnesium	260		713		-93.1	0.4	1, J
Manganese	33	J	36	J	-8.7	0.04	1, IN
Mercury	0.017	U	0.016	U	NC		
Nickel	2.2		3		-30.8	0.04	1, IN
Potassium	155	B	436	B	NC		
Selenium	0.48	UL	0.48	UL	NC		
Silver	0.11	UR	0.11	UR	NC		
Sodium	52.2	B	40.5	B	NC		
Thallium	0.16	U	0.2	R	NC		
Vanadium	4.9		8.4		-52.6	0.035	1, J
Zinc	3.6		7.3		-67.9	0.35	1, J

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.

2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.

U - the compound was not detected in the sample at or above the associated numerical value.

NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

J - The positive results should be considered estimated.

B - The result should be considered non-detected or qualitatively questionable due to blank contamination.

IN - The results are acceptable.

COMMENTS

Al, Ba, Be, Cr, Mg, V, and Zn are qualified as estimated due to field duplicate imprecision.

4/29/03

TETRA TECH NUS

PHIL- 17050

TO: G. GLENN **DATE:** MAY 2, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – PH and GRAIN SIZE
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0199

SAMPLES: 9/Solid/

FTA-SS-104	FTA-SS-107	FTA-SS-110
FTA-SS-105	FTA-SS-108	FTA-SS-DUP1
FTA-SS-106	FTA-SS-109	FTA-SS-111

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0199 consists of nine soil environmental samples (designated FTA-SS-). All soil samples were analyzed for pH and Grain Size. One field duplicate pair (FTA-SS-110/FTA-SS-DUP1) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 4, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 9045C for pH and ASTM Method D422 for Grain Size.

SUMMARY

All parameters were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, laboratory duplicate precision, field duplicate precision, logbook documentation, and calculations.

NOTES

The Relative Percent Difference (RPD) for the laboratory duplicate results for pH were within the quality control limit of 20%.

The Relative Percent Difference (RPD) for the field duplicate results for pH were within the quality control limit of 50%.

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Results as Reported by the Laboratory
2. Appendix B - Support Documentation

APPENDIX A

Results as Reported by the Laboratory

Mitkem Corporation

Date: *25-Feb-03*

CLIENT: Tetra Tech NUS, Inc.
Lab Order: B0199
Project: Wallops Island
Lab ID: B0199-02A

Client Sample ID: FTASS104
Tag Number: FTA-SS-104
Collection Date: 2/4/03 7:50:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	6.0	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS105
Lab Order:	B0199	**Tag Number:**	FTA-SS-105
Project:	Wallops Island	**Collection Date:**	2/4/03 8:35:00 AM
Lab ID:	B0199-05A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.8	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS106
Lab Order:	B0199	**Tag Number:**	FTA-SS-106
Project:	Wallops Island	**Collection Date:**	2/4/03 9:10:00 AM
Lab ID:	B0199-08A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.8	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS107
Lab Order:	B0199	**Tag Number:**	FTA-SS-107
Project:	Wallops Island	**Collection Date:**	2/14/03 10:05:00 AM
Lab ID:	B0199-11A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.8	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS108
Lab Order:	B0199	**Tag Number:**	FTA-SS-108
Project:	Wallops Island	**Collection Date:**	2/4/03 10:45:00 AM
Lab ID:	B0199-14A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	6.2	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT: Tetra Tech NUS, Inc.
Lab Order: B0199
Project: Wallops Island
Lab ID: B0199-17A

Client Sample ID: FTASS109
Tag Number: FTA-SS-109
Collection Date: 2/4/03 11:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.8	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS110
Lab Order:	B0199	**Tag Number:**	FTA-SS-110
Project:	Wallops Island	**Collection Date:**	2/4/03 12:20:00 PM
Lab ID:	B0199-20A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	6.2	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASSDUP1
Lab Order:	B0199	**Tag Number:**	FTA-SS-DUP1
Project:	Wallops Island	**Collection Date:**	2/4/03 12:25:00 PM
Lab ID:	B0199-23A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	6.4	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *25-Feb-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS111
Lab Order:	B0199	**Tag Number:**	FTA-SS-111
Project:	Wallops Island	**Collection Date:**	2/4/03 1:15:00 PM
Lab ID:	B0199-25A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH		**SW9045C_S**				
pH	5.5	1.0		pH Units	1	02/06/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-104

Sample #: 001 B0199-02B GRAB 02/04/03 @0750

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	2.25	97.75
No. 20	4.50	93.25
No. 40	12.70	80.55
No. 60	21.64	58.91
No. 140	50.54	8.37
No. 200	3.23	5.14

002184

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-105

Sample #: 002 B0199-05B GRAB 02/04/03 @0835

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.72	99.28
No. 10	3.23	96.05
No. 20	14.22	81.83
No. 40	22.68	59.15
No. 60	20.26	38.89
No. 140	25.50	13.39
No. 200	3.56	9.83

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-106

Sample #: 003 B0199-08B GRAB 02/04/03 @0910

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.11	98.89
No. 10	2.12	96.77
No. 20	4.78	91.99
No. 40	11.45	80.54
No. 60	17.98	62.56
No. 140	50.11	12.45
No. 200	3.93	8.52

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-107

Sample #: 04 B0199-11B GRAB 02/04/03 @1005

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.38	99.62
No. 10	2.46	97.16
No. 20	5.68	91.48
No. 40	12.53	78.95
No. 60	17.75	61.20
No. 140	50.31	10.89
No. 200	4.13	6.76

002107

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-108

Sample #: 05 B0199-14B GRAB 02/04/03 @1045

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.72	98.28
No. 10	1.37	96.91
No. 20	2.50	94.41
No. 40	8.20	86.21
No. 60	15.93	70.28
No. 140	60.50	9.78
No. 200	4.47	5.31

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-109

Sample #: 06 B0199-17B GRAB 02/04/03 @1122

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.56	99.44
No. 10	1.29	98.15
No. 20	9.26	88.89
No. 40	29.17	59.72
No. 60	37.85	21.87
No. 140	18.12	3.75
No. 200	1.18	2.57

002109

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-110

Sample #: 07 B0199-20B GRAB 02/04/03 @1220

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	2.21	97.79
No. 10	2.19	95.60
No. 20	8.42	87.18
No. 40	25.06	62.12
No. 60	32.83	29.29
No. 140	25.60	3.69
No. 200	1.61	2.08

002190

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA-SS-DUP1

Sample #: 08 B0199-23B GRAB 02/04/03 @1225

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.83	99.17
No. 10	2.64	96.53
No. 20	10.96	85.57
No. 40	28.95	56.62
No. 60	35.44	21.18
No. 140	16.53	4.65
No. 200	1.31	3.34

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1752
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

FTA - SS - 111

Sample #: 09 B0199-25B GRAB 02/04/03 @1315

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.06	99.94
No. 10	0.25	99.69
No. 20	1.78	97.91
No. 40	8.66	89.25
No. 60	20.13	69.12
No. 140	55.95	13.17
No. 200	6.08	7.09

APPENDIX B

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA 15220		

CLIENT PROJECT NAME: NASA WFF
CLIENT PROJECT #: CTO 848
CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl	VOA + MTBE 5 gram Encore sampler	VOA + MTBE 40z Amber Glass	SVOC + PCB 40z Amber Glass	TAL Metals + Hg 40z Amber Glass	TOC & Moisture 8 oz Amber Glass	Grain Size 40z Amber Glass	TAL Metals & Moisture	COMMENTS
TB-020403	2/4/03 / 0700		X	X			01	2	2								
FTA-SS-104	2/4/03 / 0750		X		X		02	7		3	1*	1*	1*	1*			
FTA-SU-104-0204	2/4/03 / 0803		X		X		03	5		3	1*				1*		
FTA-SU-104-0911	2/4/03 / 0818		X		X		04	5		3	1				1		
FTA-SS-105	2/4/03 / 0835		X		X		05	7		3	1	1	1	1			
FTA-SU-105-0204	2/4/03 / 0848		X		X		06	5		3	1				1		
FTA-SU-105-0911	2/4/03 / 0858		X		X		07	5		3	1				1		
FTA-SS-106	2/4/03 / 0910		X		X		08	7		3	1	1	1	1			
FTA-SU-106-0204	2/4/03 / 0925		X		X		09	5		3	1				1		
FTA-SU-106-1113	2/4/03 / 0938		X		X		10	5		3	1				1		
FTA-SS-107-	2/4/03 / 1005		X		X		11	7		3	1	1	1	1			
FTA-SU-107-0204	2/4/03 / 1020		X		X		12	5		3	1				1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		2/4/03 / 1700		2-5-03 / 0900	Shipped VIA FED EX 8286 8470 7122	10
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		LAB PROJECT #:
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME: 1	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661-Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME: | CLIENT PROJECT #: | CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Sytem Encore sampler	VOC+MTBE 40z Amber Glass	SVOC+PCB 40z Amber Glass	TAL Metals 4oz Amber Glass 4oz Moisture	TAL Metals 4oz Amber Glass	TPH 4oz Amber Glass 8oz Moisture Grain Size	COMMENTS
FTA-SU-107-1113	2/4/03 1030		X		X		13	5	3	1	1				
FTA-SS-108	2/4/03 1045		X		X		14	3	3	1		1	1	1	
FTA-SU-108-0204	2/4/03 1057		X		X		15	5	3	1	1				
FTA-SU-108-0709	2/4/03 1110		X		X		16	5	3	1	1				
FTA-SS-109	2/4/03 1122		X		X		17	3	3	1		1	1	1	
FTA-SU-109-0204	2/4/03 1134		X		X		18	5	3	1	1				
FTA-SU-109-0709	2/4/03 1145		X		X		19	5	3	1	1				
FTA-SS-110	2/4/03 1220		X		X		20	3	3	1		1	1	1	
FTA-SU-110-0204	2/4/03 1250		X		X		21	5	3	1	1				
FTA-SU-110-0709	2/4/03 1305		X		X		22	5	3	1	1				
FTA-SS-Dup 1	2/4/03 1225		X		X		23	6	3			1	1	1	
FTA-SU-Dup 2	2/4/03 1255		X		X		24	5	3	1	1				

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/4/03 1700	[signature]	2-5-03 0900	Shipped via Fed Ex 8286 8470 7122	10
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0199
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Sediment Encore sampler; VOC + MTBE 40z Amber Glass; SVOC + PCB 40z Amber Glass; TAL Metals - Pit 40z Amber Glass; TOC 40z Amber Glass; TAL Metals 40z Amber Glass; 40ml VOA Vial HCl; VOL MTBE 1 Liter Amber Glass; SVOC 1 Liter Amber Glass; PCB 500ml poly; TAL Metals 8oz Amber Glass Wide Size	COMMENTS
FTA-SS-111	2/4/03 1315		X		X		25		9 3 2 3 1	DO MS/MSD
FTA-SU-111-0204	2/4/03 1340		X		X		26		9 2 2	DO MS/MSD
FTA-SU-111-0810	2/4/03 1355		X		X		27		3 1 1	
RB-020403	2/4/03 1600		X	X			28		2 2 2 1	
	/									
	/									
	/									
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
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SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and twenty-six soil samples that were collected on February 4, 2003, and received at Mitkem on February 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples FTASS111MS and SV1080709 and high recovery of bromofluorobenzene in samples SV1040911, SV1050204 and SV1050911. Sample SV1080911 was re-analyzed with 1,2-dichloroethane-d4 with QC limits and low recovery of bromofluorobenzene. Samples SV1040911, SV1050204 and SV1050911 were re-analyzed at dilution with all surrogate recoveries within QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of bromomethane inV6XLCS and high recovery of vinyl chloride, bromomethane, chloroethane and trichlorofluoromethane in V6ELCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on samples FTASS111 and SV1110204. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate for sample FTASS111 and SV1110204. Replicate RPDs were within the QC limits with the exception of methylene chloride for sample FTASS111.

Sample analysis: samples SV1040911, SV1050204 and SV1050911 were initially analyzed at low level, but due to high concentration of target analytes, were re-analyzed at dilution by medium level. Internal standard area counts were within the QC criteria with the exception of sample SV1050204, FTASS110, FTASSDUP1 and SV1080709RE. Sample SV1050204 was re-analyzed at dilution with all internal standard area counts within QC criteria. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine in S1CLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to high concentration of target analytes, sample SV1050911 was re-analyzed at 10x dilution. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1110204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a low reporting limit. These samples were extracted with samples requiring a lower reporting limit. No other unusual observation was made for the analysis.

5. Metals Analysis (SDG A):

Due to the large number of samples, metals results are arranged into two Sample Delivery Groups, SDG B0199A and B0199B. Each SDG includes a matrix spike/duplicate analysis. Results are qualified where necessary for those samples associated with each spike/duplicate. Raw analysis data for both SDGs follow Form 14 for SDG B0220B.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTASS111. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimonywith spike recovery within QC limits.\.

Matrix duplicate: matrix duplicate was performed on sample FTASS111. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. Metals Analysis (SDG B):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on samples SV1110204 and RB020403. Spike recoveries were within the QC limits. The mercury spike and %Recovery are incorrect on Form 5's due to the software. The mercury spike added and %Recovery were manually corrected.

Matrix duplicate: matrix duplicate was performed on samples SV1110204 and RB020403. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **JUNE 6, 2003**

FROM: **D. SCHLOER** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION – VOA / SVOA / PCB**
CTO 848, NASA WALLOPS ISLAND FLIGHT FACILITY
SDG B0215

SAMPLES: 1 / Aqueous / VOA

TB-020503

3 / Aqueous / VOA / SVOA / PCB

RB-020403 RB-020503 FB-020503

22 / Soil / VOA / SVOA / PCB

FTA-SS-112	FTA-SS-113	FTA-SS-114
FTA-SS-115	FTA-SS-116	FTA-SS-117
FTA-SS-118	FTA-SU-112-0204	FTA-SU-112-0709
FTA-SU-113-0204	FTA-SU-113-0709	FTA-SU-114-0204
FTA-SU-114-0709	FTA-SU-115-0204	FTA-SU-115-0810
FTA-SU-116-0204	FTA-SU-116-0709	FTA-SU-117-0204
FTA-SU-117-0709	FTA-SU-118-0204	FTA-SU-118-070
FTA-SU-DUP3		

OVERVIEW

The sample set for CTO 848; SDG B0215, NASA Wallops Island Flight Facility consists of four (4) aqueous quality control samples and twenty-two (22) environmental soil samples. The trip blank was analyzed for volatile organic compounds (VOCs) only. All other aqueous quality control samples and soil environmental samples were analyzed for volatile, semivolatile (SVOC) and Polychlorinated biphenyl (PCB) organic compounds. One field duplicate pair was included in this SDG: FTA-SU-114-0204 / FTA-SU-DUP3.

The samples were collected by TetraTech NUS on February 5th, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using USEPA SW-846 Methods 8260B, 8270C, and 8082, analytical and reporting protocols.

The findings in this report are based upon a general review of all available data including: data completeness, system performance, holding times, initial / continuing calibrations, laboratory method blank results, surrogate spike/internal standard recoveries, blank spike results, field duplicate results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below; documentation supporting these findings is presented in Appendix C. Qualified analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

Major Problems

- No major problems were noted during the data evaluation.

Minor Problems

- The following compound were detected in the soil laboratory method blanks at the maximum concentration indicated below:

Compound	Concentration (µg/kg)	Soil Action Level (µg/kg)
Methylene chloride	5	50

Blank Actions

- Value < Reporting Limit (RL); report value followed by a B.
- Value > RL and < Action Level; report value followed by a B.
- Value > RL and > Action Level; report value unqualified.

An action level of 10X the maximum contaminant concentration was established to evaluate laboratory contamination for methylene chloride. Dilution factors, sample aliquots, and percent moisture were taken into consideration during the application of all blank action levels. The affected positive results were qualified (B) as a result of blank contamination for methylene chloride.

Acetone was detected at low levels in several soil samples. However, acetone was not detected in laboratory method or field quality control blanks. In the professional opinion of the reviewer, the origins of acetone in the soil samples is most likely laboratory related. Therefore, all positive results reported for acetone were qualified as estimated (J) in soil samples.

- A calibration verification percent Difference (%D) exceeded the 25% (and was > 50%) quality control limit for 4-nitroaniline on instrument S2, on 2/28/03, at 16:29. Only nondetected results were reported for 4-nitroaniline, and these were qualified as estimated (UJ) in the affected samples. The direction of bias cannot be determined.

- Calibration verification %Ds exceeded the 25% (but were < 50%) quality control limit for indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene on instrument S2, on 3/3/03, at 15:09. Positive results were reported for indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene, and these were qualified as estimated (J) in the affected samples. The direction of bias cannot be determined.

- A calibration verification %D exceeded the 25% (and was > 50%) quality control limit for hexachlorocyclopentadiene on instrument S2, on 3/4/03, at 14:10. Only nondetected results were reported for hexachlorocyclopentadiene, and these were qualified as estimated (UJ) in the affected samples. The direction of bias cannot be determined.

- All base/neutral and acid surrogates were recovered below the lower quality control limit (but were >10%) for the analysis sample FTA-SU-118-070. The laboratory re-extracted and re-analyzed the sample with acceptable surrogate recoveries; however, the technical holding time for extraction was grossly exceeded. Therefore, the original sample results for all positive and nondetected base/neutral and acid compounds are reported and qualified as estimated (L) and (UL), respectively, due to surrogate recovery noncompliance. The results are considered biased low.

- Three base/neutral surrogates (2-fluorobiphenyl, terphenyl-d14, and 1,2-dichlorobenzene-d4) and two acid surrogates (phenol-d5 and 2,4,6-tribromophenol) were recovered below lower quality control limits (but were >10%) for the analysis of sample FTA-SU-118-0204. The laboratory re-extracted and re-analyzed the sample with acceptable surrogate recoveries; however, the technical holding time for extraction was grossly exceeded. Therefore, the original nondetected sample results for all base/neutral and acid compounds are reported and qualified as estimated (UL), due to surrogate recovery noncompliance. The results are considered biased low.

- The base/neutral surrogates 2-fluorobiphenyl, terphenyl-d14 and 1,2-dichlorobenzene-d4 were recovered below lower quality control limits (but were >10%) for the analysis of sample FTA-SU-113-0709. The laboratory re-extracted and re-analyzed the sample with acceptable surrogate recoveries; however, the technical holding time for extraction was grossly exceeded. Therefore, the original nondetected sample results for all base/neutral compounds are reported and qualified as estimated (UL), due to surrogate recovery noncompliance. The results are considered biased low.

- The internal standard 1,4-dichlorobenzene-d4 was recovered below the 50% quality control limit for the analysis of samples FTA-SS-113, FTA-SS-114, FTA-SU-DUP3, and FTA-SS-116. Positive and nondetected results for the associated target compounds are qualified as estimated (J) and (UJ), respectively, in the aforementioned samples. The direction of bias cannot be determined.

- The percent Difference (%D) between positive results reported for Aroclor-1260 exceeded the 25% quality control limit (and was > 100%) for the analysis of the following sample:

Sample	Compound	%D
FTA-SS-117	Aroclor-1260	143.1

  The positive result reported for Aroclor-1260 was qualified as estimated (J) in sample FTA-SS-117 due %D exceedance. Additionally, the Aroclor pattern identified is weathered and the presence of several large unknown peaks distort the chromatogram. The direction of bias cannot be determined.

- Positive results less than sample reporting limits were qualified as estimated (J), due to uncertainty near the detection limit.

Notes

Continuing calibration %Ds exceeded the 25% (but were <50%) quality control limit for chloromethane and acetone on the instrument V1, on 2/14/03, at 09:07. Only nondetected results were reported for chloromethane and acetone and these did not require qualification.

Continuing calibration %Ds exceeded the 25% quality control limit (but were <50%) quality control limit for methylene chloride and 1,1,2-trichlorotrifluoroethane on instrument V1, on 2/10/03, at 09:54. No action was taken for nondetected methylene chloride and 1,1,2-trichlorotrifluoroethane results. No action was taken for positive methlyene chloride results as these were previously qualified due to lab blank contamination.

A continuing calibration %D exceeded the 25% quality control limit (but was <50%) quality control limit for chloroethane on instrument V1, on 2/11/03, at 10:03. Only nondetected results were reported for chloroethane and these did not require qualification.

A continuing calibration %D exceeded the 25% quality control limit (but was <50%) quality control limit for bromomethane on instrument V1, on 2/12/03, at 11:17. Only nondetected results were reported for bromomethane and these did not require qualification.

The VOCs: vinyl chloride, bromomethane, chloroethane, and trichlorofluoromethane were recovered above their respective upper quality control limits for the analysis of the aqueous Laboratory Control Sample (LCS). No action was taken based on these noncompliances.

The VOC: chloroethane was recovered above the 146% quality control limit for the analysis of both soil LCSs (V1QLCS and V1RLCS) extracted with samples reported in this SDG. Only nondetected results were reported for chloroethane, and these did not require qualification.

Recovery of chloroethane exceeded the 146% quality control limit for the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis of sample FTA-SU-116-0204. Chloroethane also recovered above quality control limits in the associated LCSs as noted above; however, no action was taken because only nondetected results were reported.

An initial calibration percent Relative Standard Deviation (%RSD) exceeded the 30% (but was <60%) quality control limit for hexachlorocyclopentadiene on instrument S2, on 2/266/03. Only nondetected results were reported for hexachlorocyclopentadiene, and these did not require qualification.

Continuing calibration %Ds exceeded the 25% (but were <50%) quality control limit for hexachlorocyclopentadiene, 2,4-dinitrophenol, 4-nitrophenol, carbazole, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene on instrument S2, on 2/28/03, at 16:29. Only nondetected results were reported for the aforementioned compounds, and these did not require qualification.

Continuing calibration %Ds exceeded the 25% (but were <50%) quality control limit for hexachlorocyclopentadiene, 4-nitroaniline, and carbazole on instrument S2, on 3/2/03, at 13:23. Only nondetected results were reported for the aforementioned compounds, and these did not require qualification.

Continuing calibration %Ds exceeded the 25% (but were <50%) quality control limit for hexachlorocyclopentadiene and dibenzo(a,h)anthracene on instrument S2, on 3/3/03, at 15:09. Only nondetected results were reported for the aforementioned compounds, and these did not require qualification.

Continuing calibration %Ds exceeded the 25% (but were <50%) quality control limit for indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene on instrument S2, on 3/4/03, at 14:10. Only nondetected results were reported for the aforementioned compounds, and these did not require qualification.

The SVOCs: 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine were recovered below their respective quality control limits for the LCS (S1CLCS) associated with the aqueous samples reported in this SDG. No action was taken based on these noncompliances.

The SVOCs: 4-nitroaniline and carbazole were recovered above their respective quality control limit for an LCS (S2FLCS) associated with soil samples reported in this SDG. No action was taken based on these noncompliances.

2,4-dinitrophenol recovery fell below the lower quality control limit for the MS analysis of sample FTA-SU-116-0204. 2,4,5-trichlorophenol, fluorene, 4-bromophenyl-phenyl ether, hexachlorobenzene, phenanthrene, anthracene, di-n-butylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, benzo(b)fluoranthene and benzo(a)pyrene recoveries fell below their respective quality control limits for the MSD analysis of sample FTA-SU-116-0204. Di-n-octylphthalate recovery fell below the lower quality control limit for the MS/MSD analysis of FTA-SU-116-0204. No action was taken based on these noncompliances.

The laboratory reported several VOC and SVOC compounds that were not requested target analytes as specified in the technical specification for laboratory services/statement of work (SOW). The laboratory failed to report several VOC and SVOC target analytes as requested in the SOW. Deviations from the SOW were conveyed to the project office (TtNUS- King of Prussia) which subsequently approved variance from the SOW.

Tentatively Identified Compounds (TICS) were identified and reported in the VOC fraction of the following samples:

FTA-SS-113	FTA-SS-114
FTA-SU-113-0204	FTA-SU-113-0709
FTA-SU-114-0204	FTA-SU-115-0810

TICS were identified and reported in the SVOC fraction of the following samples:

FTA-SS-112	FTA-SS-113
FTA-SS-114	FTA-SS-115
FTA-SS-116	FTA-SS-117
FTA-SS-118	FTA-SU-112-0709
FTA-SU-113-0204	FTA-SU-113-0709
FTA-SU-114-0709	FTA-SU-115-0204
FTA-SU-115-0810	FTA-SU-117-0204
FTA-SU-117-0709	FTA-SU-118-0204
FTA-SU-118-070	

EXECUTIVE SUMMARY

Laboratory Performance Issues: Initial calibration of the SVOC: hexachlorocyclopentadiene failed to meet linearity criteria. However, qualification of analytical data was not required. The continuing calibration criteria were not met for several VOC and SVOC compounds resulting in the qualification of analytical data as estimated. Methylene chloride was detected in laboratory method blanks resulting in the qualification of analytical data as lab blank contamination. Poor Instrument performance (low internal standard recovery) was noted for the analysis of several samples in the VOC fraction. SVOC surrogate recovery noncompliances were noted for the analysis of several samples resulting in the qualification of analytical data as biased low.

Other Factors Affecting Data Quality: None

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III and the NFESC guidelines "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS

Douglas S. Schloer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SS-112	nsample	FTA-SS-112	nsample	FTA-SS-113
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-03C	lab_id	B0215-03C	lab_id	B0215-06C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	6	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	UJ	N
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	UJ	N
1,2,4-TRIMETHYLBENZENE	12	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	N
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	UJ	N
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	UJ	N
1,3-DICHLOROBENZENE	12	UJ	N
1,4-DICHLOROBENZENE	12	UJ	N
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SS-113	nsample	FTA-SS-114	nsample	FTA-SS-114
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-06C	lab_id	B0215-09C	lab_id	B0215-09C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	11	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	UJ	N
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	UJ	N
1,2,4-TRIMETHYLBENZENE	11	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	N
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	UJ	N
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	UJ	N
1,3-DICHLOROBENZENE	11	UJ	N
1,4-DICHLOROBENZENE	11	UJ	N
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	20	J	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	5	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SS-115	nsample	FTA-SS-115	nsample	FTA-SS-116
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-13C	lab_id	B0215-13C	lab_id	B0215-16C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	9	J	AP
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	8	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	UJ	N
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	UJ	N
1,2,4-TRIMETHYLBENZENE	12	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	N
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	UJ	N
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	UJ	N
1,3-DICHLOROBENZENE	12	UJ	N
1,4-DICHLOROBENZENE	12	UJ	N
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	J	AP
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SS-116	nsample	FTA-SS-117	nsample	FTA-SS-117
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-16C	lab_id	B0215-19C	lab_id	B0215-19C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	86	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	5	J	P
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	1	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	15	U	
1,1,2,2-TETRACHLOROETHANE	15	U	
1,1,2-TRICHLOROETHANE	15	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	15	U	
1,1-DICHLOROETHANE	15	U	
1,1-DICHLOROETHENE	15	U	
1,2,4-TRICHLOROBENZENE	15	U	
1,2,4-TRIMETHYLBENZENE	15	U	
1,2-DIBROMO-3-CHLOROPROPANE	15	U	
1,2-DIBROMOETHANE	15	U	
1,2-DICHLOROBENZENE	15	U	
1,2-DICHLOROETHANE	15	U	
1,2-DICHLOROPROPANE	15	U	
1,3,5-TRIMETHYLBENZENE	15	U	
1,3-DICHLOROBENZENE	15	U	
1,4-DICHLOROBENZENE	15	U	
2-BUTANONE	15	U	
2-HEXANONE	15	U	
4-METHYL-2-PENTANONE	15	U	
ACETONE	15	U	
BENZENE	15	U	
BROMODICHLOROMETHANE	15	U	
BROMOFORM	15	U	
BROMOMETHANE	15	U	
CARBON DISULFIDE	15	U	
CARBON TETRACHLORIDE	15	U	
CHLOROBENZENE	15	U	
CHLORODIBROMOMETHANE	15	U	
CHLOROETHANE	15	U	
CHLOROFORM	15	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	15	U	
CIS-1,2-DICHLOROETHENE	15	U	
CIS-1,3-DICHLOROPROPENE	15	U	
CYCLOHEXANE	15	U	
DICHLORODIFLUOROMETHANE	15	U	
ETHYLBENZENE	15	U	
ISOPROPYLBENZENE	15	U	
M+P-XYLENES	15	U	
METHYL ACETATE	15	U	
METHYL CYCLOHEXANE	15	U	
METHYL TERT-BUTYL ETHER	15	U	
METHYLENE CHLORIDE	15	U	
O-XYLENE	15	U	
STYRENE	15	U	
TETRACHLOROETHENE	15	U	
TOLUENE	15	U	
TOTAL XYLENES	15	U	
TRANS-1,2-DICHLOROETHENE	15	U	
TRANS-1,3-DICHLOROPROPENE	15	U	
TRICHLOROETHENE	15	U	
TRICHLOROFLUOROMETHANE	15	U	
VINYL CHLORIDE	15	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SS-118	nsample	FTA-SS-118	nsample	FTA-SU-112-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-22C	lab_id	B0215-22C	lab_id	B0215-04B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-112-0204	nsample	FTA-SU-112-0709	nsample	FTA-SU-112-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-04B	lab_id	B0215-05B	lab_id	B0215-05B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	4	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	13	U	
1,1,2,2-TETRACHLOROETHANE	13	U	
1,1,2-TRICHLOROETHANE	13	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	13	U	
1,1-DICHLOROETHANE	13	U	
1,1-DICHLOROETHENE	13	U	
1,2,4-TRICHLOROBENZENE	13	U	
1,2,4-TRIMETHYLBENZENE	13	U	
1,2-DIBROMO-3-CHLOROPROPANE	13	U	
1,2-DIBROMOETHANE	13	U	
1,2-DICHLOROBENZENE	13	U	
1,2-DICHLOROETHANE	13	U	
1,2-DICHLOROPROPANE	13	U	
1,3,5-TRIMETHYLBENZENE	13	U	
1,3-DICHLOROBENZENE	13	U	
1,4-DICHLOROBENZENE	13	U	
2-BUTANONE	13	U	
2-HEXANONE	13	U	
4-METHYL-2-PENTANONE	13	U	
ACETONE	13	U	
BENZENE	13	U	
BROMODICHLOROMETHANE	13	U	
BROMOFORM	13	U	
BROMOMETHANE	13	U	
CARBON DISULFIDE	13	U	
CARBON TETRACHLORIDE	13	U	
CHLOROBENZENE	13	U	
CHLORODIBROMOMETHANE	13	U	
CHLOROETHANE	13	U	
CHLOROFORM	13	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	13	U	
CIS-1,2-DICHLOROETHENE	13	U	
CIS-1,3-DICHLOROPROPENE	13	U	
CYCLOHEXANE	13	U	
DICHLORODIFLUOROMETHANE	13	U	
ETHYLBENZENE	13	U	
ISOPROPYLBENZENE	13	U	
M+P-XYLENES	13	U	
METHYL ACETATE	13	U	
METHYL CYCLOHEXANE	13	U	
METHYL TERT-BUTYL ETHER	13	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	13	U	
STYRENE	13	U	
TETRACHLOROETHENE	13	U	
TOLUENE	13	U	
TOTAL XYLENES	13	U	
TRANS-1,2-DICHLOROETHENE	13	U	
TRANS-1,3-DICHLOROPROPENE	13	U	
TRICHLOROETHENE	13	U	
TRICHLOROFLUOROMETHANE	13	U	
VINYL CHLORIDE	13	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-07B	lab_id	B0215-07B	lab_id	B0215-08B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	11	U	
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	5	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-113-0709	nsample	FTA-SU-114-0204	nsample	FTA-SU-114-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-08B	lab_id	B0215-10B	lab_id	B0215-10B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	5	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	7	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-114-0709	nsample	FTA-SU-114-0709	nsample	FTA-SU-115-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-11B	lab_id	B0215-11B	lab_id	B0215-14B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	13	U	
1,1,2,2-TETRACHLOROETHANE	13	U	
1,1,2-TRICHLOROETHANE	13	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	13	U	
1,1-DICHLOROETHANE	13	U	
1,1-DICHLOROETHENE	13	U	
1,2,4-TRICHLOROBENZENE	13	U	
1,2,4-TRIMETHYLBENZENE	13	U	
1,2-DIBROMO-3-CHLOROPROPANE	13	U	
1,2-DIBROMOETHANE	13	U	
1,2-DICHLOROBENZENE	13	U	
1,2-DICHLOROETHANE	13	U	
1,2-DICHLOROPROPANE	13	U	
1,3,5-TRIMETHYLBENZENE	13	U	
1,3-DICHLOROBENZENE	13	U	
1,4-DICHLOROBENZENE	13	U	
2-BUTANONE	13	U	
2-HEXANONE	13	U	
4-METHYL-2-PENTANONE	13	U	
ACETONE	13	U	
BENZENE	13	U	
BROMODICHLOROMETHANE	13	U	
BROMOFORM	13	U	
BROMOMETHANE	13	U	
CARBON DISULFIDE	13	U	
CARBON TETRACHLORIDE	13	U	
CHLOROBENZENE	13	U	
CHLORODIBROMOMETHANE	13	U	
CHLOROETHANE	13	U	
CHLOROFORM	13	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-115-0204
samp_date	2/5/2003
lab_id	B0215-14B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	13	U	
CIS-1,2-DICHLOROETHENE	13	U	
CIS-1,3-DICHLOROPROPENE	13	U	
CYCLOHEXANE	13	U	
DICHLORODIFLUOROMETHANE	13	U	
ETHYLBENZENE	13	U	
ISOPROPYLBENZENE	13	U	
M+P-XYLENES	13	U	
METHYL ACETATE	13	U	
METHYL CYCLOHEXANE	13	U	
METHYL TERT-BUTYL ETHER	13	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	13	U	
STYRENE	13	U	
TETRACHLOROETHENE	13	U	
TOLUENE	13	U	
TOTAL XYLENES	13	U	
TRANS-1,2-DICHLOROETHENE	13	U	
TRANS-1,3-DICHLOROPROPENE	13	U	
TRICHLOROETHENE	13	U	
TRICHLOROFLUOROMETHANE	13	U	
VINYL CHLORIDE	13	U	

nsample	FTA-SU-115-0810
samp_date	2/5/2003
lab_id	B0215-15B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	11	U	
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

nsample	FTA-SU-115-0810
samp_date	2/5/2003
lab_id	B0215-15B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	3	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-17B	lab_id	B0215-17B	lab_id	B0215-18B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	10	U	
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	10	U	
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-116-0709
samp_date	2/5/2003
lab_id	B0215-18B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	A
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

nsample	FTA-SU-117-0204
samp_date	2/5/2003
lab_id	B0215-20B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	12	J	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

nsample	FTA-SU-117-0204
samp_date	2/5/2003
lab_id	B0215-20B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	3	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-117-0709	nsample	FTA-SU-117-0709	nsample	FTA-SU-118-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-21B	lab_id	B0215-21B	lab_id	B0215-23B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	88
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	3	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	13	U	
1,1,2,2-TETRACHLOROETHANE	13	U	
1,1,2-TRICHLOROETHANE	13	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	13	U	
1,1-DICHLOROETHANE	13	U	
1,1-DICHLOROETHENE	13	U	
1,2,4-TRICHLOROBENZENE	13	U	
1,2,4-TRIMETHYLBENZENE	13	U	
1,2-DIBROMO-3-CHLOROPROPANE	13	U	
1,2-DIBROMOETHANE	13	U	
1,2-DICHLOROBENZENE	13	U	
1,2-DICHLOROETHANE	13	U	
1,2-DICHLOROPROPANE	13	U	
1,3,5-TRIMETHYLBENZENE	13	U	
1,3-DICHLOROBENZENE	13	U	
1,4-DICHLOROBENZENE	13	U	
2-BUTANONE	13	U	
2-HEXANONE	13	U	
4-METHYL-2-PENTANONE	13	U	
ACETONE	13	U	
BENZENE	13	U	
BROMODICHLOROMETHANE	13	U	
BROMOFORM	13	U	
BROMOMETHANE	13	U	
CARBON DISULFIDE	13	U	
CARBON TETRACHLORIDE	13	U	
CHLOROBENZENE	13	U	
CHLORODIBROMOMETHANE	13	U	
CHLOROETHANE	13	U	
CHLOROFORM	13	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-118-0204	nsample	FTA-SU-118-0709	nsample	FTA-SU-118-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-23B	lab_id	B0215-24B	lab_id	B0215-24B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	88	Pct_Solids	94	Pct_Solids	94
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	13	U	
CIS-1,2-DICHLOROETHENE	13	U	
CIS-1,3-DICHLOROPROPENE	13	U	
CYCLOHEXANE	13	U	
DICHLORODIFLUOROMETHANE	13	U	
ETHYLBENZENE	13	U	
ISOPROPYLBENZENE	13	U	
M+P-XYLENES	13	U	
METHYL ACETATE	13	U	
METHYL CYCLOHEXANE	13	U	
METHYL TERT-BUTYL ETHER	13	U	
METHYLENE CHLORIDE	13	U	
O-XYLENE	13	U	
STYRENE	13	U	
TETRACHLOROETHENE	13	U	
TOLUENE	13	U	
TOTAL XYLENES	13	U	
TRANS-1,2-DICHLOROETHENE	13	U	
TRANS-1,3-DICHLOROPROPENE	13	U	
TRICHLOROETHENE	13	U	
TRICHLOROFLUOROMETHANE	13	U	
VINYL CHLORIDE	13	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	U	
1,1,2,2-TETRACHLOROETHANE	14	U	
1,1,2-TRICHLOROETHANE	14	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	14	U	
1,1-DICHLOROETHANE	14	U	
1,1-DICHLOROETHENE	14	U	
1,2,4-TRICHLOROBENZENE	14	U	
1,2,4-TRIMETHYLBENZENE	14	U	
1,2-DIBROMO-3-CHLOROPROPANE	14	U	
1,2-DIBROMOETHANE	14	U	
1,2-DICHLOROBENZENE	14	U	
1,2-DICHLOROETHANE	14	U	
1,2-DICHLOROPROPANE	14	U	
1,3,5-TRIMETHYLBENZENE	14	U	
1,3-DICHLOROBENZENE	14	U	
1,4-DICHLOROBENZENE	14	U	
2-BUTANONE	14	U	
2-HEXANONE	14	U	
4-METHYL-2-PENTANONE	14	U	
ACETONE	14	U	
BENZENE	14	U	
BROMODICHLOROMETHANE	14	U	
BROMOFORM	14	U	
BROMOMETHANE	14	U	
CARBON DISULFIDE	14	U	
CARBON TETRACHLORIDE	14	U	
CHLOROBENZENE	14	U	
CHLORODIBROMOMETHANE	14	U	
CHLOROETHANE	14	U	
CHLOROFORM	14	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	U	
CIS-1,2-DICHLOROETHENE	14	U	
CIS-1,3-DICHLOROPROPENE	14	U	
CYCLOHEXANE	14	U	
DICHLORODIFLUOROMETHANE	14	U	
ETHYLBENZENE	14	U	
ISOPROPYLBENZENE	14	U	
M+P-XYLENES	14	U	
METHYL ACETATE	14	U	
METHYL CYCLOHEXANE	14	U	
METHYL TERT-BUTYL ETHER	14	U	
METHYLENE CHLORIDE	3	B	A
O-XYLENE	14	U	
STYRENE	14	U	
TETRACHLOROETHENE	14	U	
TOLUENE	14	U	
TOTAL XYLENES	14	U	
TRANS-1,2-DICHLOROETHENE	14	U	
TRANS-1,3-DICHLOROPROPENE	14	U	
TRICHLOROETHENE	14	U	
TRICHLOROFLUOROMETHANE	14	U	
VINYL CHLORIDE	14	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-DUP3	nsample	FTA-SU-DUP3
samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-12B	lab_id	B0215-12B
qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90
DUP_OF:	FTA-SU-114-0204	DUP_OF:	FTA-SU-114-0204

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	U	
1,1,2,2-TETRACHLOROETHANE	14	UJ	N
1,1,2-TRICHLOROETHANE	14	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	14	U	
1,1-DICHLOROETHANE	14	U	
1,1-DICHLOROETHENE	14	U	
1,2,4-TRICHLOROBENZENE	14	UJ	N
1,2,4-TRIMETHYLBENZENE	14	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	14	UJ	N
1,2-DIBROMOETHANE	14	U	
1,2-DICHLOROBENZENE	14	UJ	N
1,2-DICHLOROETHANE	14	U	
1,2-DICHLOROPROPANE	14	U	
1,3,5-TRIMETHYLBENZENE	14	UJ	N
1,3-DICHLOROBENZENE	14	UJ	N
1,4-DICHLOROBENZENE	14	UJ	N
2-BUTANONE	14	U	
2-HEXANONE	14	U	
4-METHYL-2-PENTANONE	14	U	
ACETONE	12	J	AP
BENZENE	14	U	
BROMODICHLOROMETHANE	14	U	
BROMOFORM	14	U	
BROMOMETHANE	14	U	
CARBON DISULFIDE	14	U	
CARBON TETRACHLORIDE	14	U	
CHLOROBENZENE	14	U	
CHLORODIBROMOMETHANE	14	U	
CHLOROETHANE	14	U	
CHLOROFORM	14	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	U	
CIS-1,2-DICHLOROETHENE	14	U	
CIS-1,3-DICHLOROPROPENE	14	U	
CYCLOHEXANE	14	U	
DICHLORODIFLUOROMETHANE	14	U	
ETHYLBENZENE	14	U	
ISOPROPYLBENZENE	14	U	
M+P-XYLENES	14	U	
METHYL ACETATE	14	U	
METHYL CYCLOHEXANE	14	U	
METHYL TERT-BUTYL ETHER	14	U	
METHYLENE CHLORIDE	5	B	A
O-XYLENE	14	U	
STYRENE	14	U	
TETRACHLOROETHENE	14	U	
TOLUENE	14	U	
TOTAL XYLENES	14	U	
TRANS-1,2-DICHLOROETHENE	14	U	
TRANS-1,3-DICHLOROPROPENE	14	U	
TRICHLOROETHENE	14	U	
TRICHLOROFLUOROMETHANE	14	U	
VINYL CHLORIDE	14	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-112	nsample	FTA-SS-112	nsample	FTA-SS-112
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-03A	lab_id	B0215-03A	lab_id	B0215-03A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	390	U	
1,2-DICHLOROBENZENE	390	U	
1,3-DICHLOROBENZENE	390	U	
1,4-DICHLOROBENZENE	390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	390	U	
2,4,5-TRICHLOROPHENOL	790	U	
2,4,6-TRICHLOROPHENOL	390	U	
2,4-DICHLOROPHENOL	390	U	
2,4-DIMETHYLPHENOL	390	U	
2,4-DINITROPHENOL	790	U	
2,4-DINITROTOLUENE	390	U	
2,6-DINITROTOLUENE	390	U	
2-CHLORONAPHTHALENE	390	U	
2-CHLOROPHENOL	390	U	
2-METHYLNAPHTHALENE	390	U	
2-METHYLPHENOL	390	U	
2-NITROANILINE	790	U	
2-NITROPHENOL	390	U	
3,3'-DICHLOROBENZIDINE	390	U	
3-NITROANILINE	790	U	
4,6-DINITRO-2-METHYLPHENOL	790	U	
4-BROMOPHENYL PHENYL ETHER	390	U	
4-CHLORO-3-METHYLPHENOL	390	U	
4-CHLOROANILINE	390	U	
4-CHLOROPHENYL PHENYL ETHER	390	U	
4-METHYLPHENOL	390	U	
4-NITROANILINE	790	U	
4-NITROPHENOL	790	U	
ACENAPHTHENE	390	U	
ACENAPHTHYLENE	390	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	390	U	
BENZO(A)ANTHRACENE	130	J	P
BENZO(A)PYRENE	90	J	P
BENZO(B)FLUORANTHENE	140	J	P
BENZO(G,H,I)PERYLENE	57	J	CP
BENZO(K)FLUORANTHENE	65	J	P
BIS(2-CHLOROETHOXY)METHANE	390	U	
BIS(2-CHLOROETHYL)ETHER	390	U	
BIS(2-ETHYLHEXYL)PHTHALATE	390	U	
BUTYL BENZYL PHTHALATE	390	U	
CARBAZOLE	390	U	
CHRYSENE	150	J	P
DIBENZO(A,H)ANTHRACENE	390	U	
DIBENZOFURAN	390	U	
DIETHYL PHTHALATE	390	U	
DIMETHYL PHTHALATE	390	U	
DI-N-BUTYL PHTHALATE	390	U	
DI-N-OCTYL PHTHALATE	390	U	
FLUORANTHENE	190	J	P
FLUORENE	390	U	
HEXACHLOROBENZENE	390	U	
HEXACHLOROBUTADIENE	390	U	
HEXACHLOROCYCLOPENTADIENE	390	U	
HEXACHLOROETHANE	390	U	
INDENO(1,2,3-CD)PYRENE	47	J	P
ISOPHORONE	390	U	
NAPHTHALENE	390	U	
NITROBENZENE	390	U	
N-NITROSO-DI-N-PROPYLAMINE	390	U	
N-NITROSODIPHENYLAMINE	390	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	790	U	
PHENANTHRENE	62	J	P
PHENOL	390	U	
PYRENE	180	J	P

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-113
samp_date	2/5/2003
lab_id	B0215-06A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	720	U	
4-NITROPHENOL	720	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

nsample	FTA-SS-113
samp_date	2/5/2003
lab_id	B0215-06A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	40	J	P
BENZO(A)PYRENE	37	J	P
BENZO(B)FLUORANTHENE	49	J	P
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	46	J	P
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	81	J	P
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

nsample	FTA-SS-113
samp_date	2/5/2003
lab_id	B0215-06A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	65	J	P

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-114	nsample	FTA-SS-114	nsample	FTA-SS-114
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-09A	lab_id	B0215-09A	lab_id	B0215-09A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	730	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	730	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	730	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	730	U	
4,6-DINITRO-2-METHYLPHENOL	730	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	730	U	
4-NITROPHENOL	730	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	730	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-115	nsample	FTA-SS-115	nsample	FTA-SS-115
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-13A	lab_id	B0215-13A	lab_id	B0215-13A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	UJ	C
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-116	nsample	FTA-SS-116	nsample	FTA-SS-116
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-16A	lab_id	B0215-16A	lab_id	B0215-16A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	370	U	
1,2-DICHLOROBENZENE	370	U	
1,3-DICHLOROBENZENE	370	U	
1,4-DICHLOROBENZENE	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	740	U	
4-NITROPHENOL	740	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	370	U	
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	
N-NITROSODIPHENYLAMINE	370	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-117	nsample	FTA-SS-117	nsample	FTA-SS-117
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-19A	lab_id	B0215-19A	lab_id	B0215-19A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	86	Pct_Solids	86	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	370	U	
1,2-DICHLOROBENZENE	370	U	
1,3-DICHLOROBENZENE	370	U	
1,4-DICHLOROBENZENE	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	760	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	760	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	760	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	760	U	
4,6-DINITRO-2-METHYLPHENOL	760	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	760	U	
4-NITROPHENOL	760	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	370	U	
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	
N-NITROSODIPHENYLAMINE	370	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	760	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SS-118	nsample	FTA-SS-118	nsample	FTA-SS-118
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-22A	lab_id	B0215-22A	lab_id	B0215-22A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	U	
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	260	J	P
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-112-0204	nsample	FTA-SU-112-0204	nsample	FTA-SU-112-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-04A	lab_id	B0215-04A	lab_id	B0215-04A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	720	UJ	C
4-NITROPHENOL	720	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-112-0709	nsample	FTA-SU-112-0709	nsample	FTA-SU-112-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-05A	lab_id	B0215-05A	lab_id	B0215-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	UJ	C
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-07A	lab_id	B0215-07A	lab_id	B0215-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	UJ	C
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-113-0709	nsample	FTA-SU-113-0709	nsample	FTA-SU-113-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-08A	lab_id	B0215-08A	lab_id	B0215-08A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	UL	R
1,2-DICHLOROBENZENE	350	UL	R
1,3-DICHLOROBENZENE	350	UL	R
1,4-DICHLOROBENZENE	350	UL	R
2,2'-OXYBIS(1-CHLOROPROPANE)	350	UL	R
2,4,5-TRICHLOROPHENOL	710	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	710	U	
2,4-DINITROTOLUENE	350	UL	R
2,6-DINITROTOLUENE	350	UL	R
2-CHLORONAPHTHALENE	350	UL	R
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	UL	R
2-METHYLPHENOL	350	U	
2-NITROANILINE	710	UL	R
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	UL	R
3-NITROANILINE	710	UL	R
4,6-DINITRO-2-METHYLPHENOL	710	U	
4-BROMOPHENYL PHENYL ETHER	350	UL	R
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	UL	R
4-CHLOROPHENYL PHENYL ETHER	350	UL	R
4-METHYLPHENOL	350	U	
4-NITROANILINE	710	UJ	CR
4-NITROPHENOL	710	U	
ACENAPHTHENE	350	UL	R
ACENAPHTHYLENE	350	UL	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	UL	R
BENZO(A)ANTHRACENE	350	UL	R
BENZO(A)PYRENE	350	UL	R
BENZO(B)FLUORANTHENE	350	UL	R
BENZO(G,H,I)PERYLENE	350	UL	R
BENZO(K)FLUORANTHENE	350	UL	R
BIS(2-CHLOROETHOXY)METHANE	350	UL	R
BIS(2-CHLOROETHYL)ETHER	350	UL	R
BIS(2-ETHYLHEXYL)PHTHALATE	350	UL	R
BUTYL BENZYL PHTHALATE	350	UL	R
CARBAZOLE	350	UL	R
CHRYSENE	350	UL	R
DIBENZO(A,H)ANTHRACENE	350	UL	R
DIBENZOFURAN	350	UL	R
DIETHYL PHTHALATE	350	UL	R
DIMETHYL PHTHALATE	350	UL	R
DI-N-BUTYL PHTHALATE	350	UL	R
DI-N-OCTYL PHTHALATE	350	UL	R
FLUORANTHENE	350	UL	R
FLUORENE	350	UL	R
HEXACHLOROBENZENE	350	UL	R
HEXACHLOROBUTADIENE	350	UL	R
HEXACHLOROCYCLOPENTADIENE	350	UL	R
HEXACHLOROETHANE	350	UL	R
INDENO(1,2,3-CD)PYRENE	350	UL	R
ISOPHORONE	350	UL	R
NAPHTHALENE	350	UL	R
NITROBENZENE	350	UL	R
N-NITROSO-DI-N-PROPYLAMINE	350	UL	R
N-NITROSODIPHENYLAMINE	350	UL	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	710	U	
PHENANTHRENE	350	UL	R
PHENOL	350	U	
PYRENE	350	UL	R

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-114-0204	nsample	FTA-SU-114-0204	nsample	FTA-SU-114-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-10A	lab_id	B0215-10A	lab_id	B0215-10A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	U	
1,2-DICHLOROBENZENE	350	U	
1,3-DICHLOROBENZENE	350	U	
1,4-DICHLOROBENZENE	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	720	U	
4-NITROPHENOL	720	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	UJ	C
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	
N-NITROSODIPHENYLAMINE	350	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-114-0709	nsample	FTA-SU-114-0709	nsample	FTA-SU-114-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-11A	lab_id	B0215-11A	lab_id	B0215-11A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	U	
1,2-DICHLOROBENZENE	350	U	
1,3-DICHLOROBENZENE	350	U	
1,4-DICHLOROBENZENE	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	710	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	710	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	710	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	710	U	
4,6-DINITRO-2-METHYLPHENOL	710	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	710	UJ	C
4-NITROPHENOL	710	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	
N-NITROSODIPHENYLAMINE	350	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	710	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-115-0204	nsample	FTA-SU-115-0204	nsample	FTA-SU-115-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-14A	lab_id	B0215-14A	lab_id	B0215-14A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	720	UJ	C
4-NITROPHENOL	720	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-115-0810	nsample	FTA-SU-115-0810	nsample	FTA-SU-115-0810
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-15A	lab_id	B0215-15A	lab_id	B0215-15A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	U	
1,2-DICHLOROBENZENE	350	U	
1,3-DICHLOROBENZENE	350	U	
1,4-DICHLOROBENZENE	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	720	U	
4-NITROPHENOL	720	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	UJ	C
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	
N-NITROSODIPHENYLAMINE	350	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-17A	lab_id	B0215-17A	lab_id	B0215-17A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	U	
1,2-DICHLOROBENZENE	350	U	
1,3-DICHLOROBENZENE	350	U	
1,4-DICHLOROBENZENE	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	710	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	710	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	710	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	710	U	
4,6-DINITRO-2-METHYLPHENOL	710	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	710	U	
4-NITROPHENOL	710	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	
N-NITROSODIPHENYLAMINE	350	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	710	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-116-0709	nsample	FTA-SU-116-0709	nsample	FTA-SU-116-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-18A	lab_id	B0215-18A	lab_id	B0215-18A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	730	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	730	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	730	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	730	U	
4,6-DINITRO-2-METHYLPHENOL	730	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	730	U	
4-NITROPHENOL	730	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	730	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-117-0204	nsample	FTA-SU-117-0204	nsample	FTA-SU-117-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-20A	lab_id	B0215-20A	lab_id	B0215-20A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	730	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	730	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	730	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	730	U	
4,6-DINITRO-2-METHYLPHENOL	730	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	730	U	
4-NITROPHENOL	730	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	UJ	C
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	730	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-117-0709	nsample	FTA-SU-117-0709	nsample	FTA-SU-117-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-21A	lab_id	B0215-21A	lab_id	B0215-21A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	720	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	720	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	720	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	720	U	
4,6-DINITRO-2-METHYLPHENOL	720	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	720	U	
4-NITROPHENOL	720	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	720	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-118-0204	nsample	FTA-SU-118-0204	nsample	FTA-SU-118-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-23A	lab_id	B0215-23A	lab_id	B0215-23A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	88	Pct_Solids	88	Pct_Solids	88
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	370	UL	R
1,2-DICHLOROBENZENE	370	UL	R
1,3-DICHLOROBENZENE	370	UL	R
1,4-DICHLOROBENZENE	370	UL	R
2,2'-OXYBIS(1-CHLOROPROPANE)	370	UL	R
2,4,5-TRICHLOROPHENOL	750	UL	R
2,4,6-TRICHLOROPHENOL	370	UL	R
2,4-DICHLOROPHENOL	370	UL	R
2,4-DIMETHYLPHENOL	370	UL	R
2,4-DINITROPHENOL	750	UL	R
2,4-DINITROTOLUENE	370	UL	R
2,6-DINITROTOLUENE	370	UL	R
2-CHLORONAPHTHALENE	370	UL	R
2-CHLOROPHENOL	370	UL	R
2-METHYLNAPHTHALENE	370	UL	R
2-METHYLPHENOL	370	UL	R
2-NITROANILINE	750	UL	R
2-NITROPHENOL	370	UL	R
3,3'-DICHLOROBENZIDINE	370	UL	R
3-NITROANILINE	750	UL	R
4,6-DINITRO-2-METHYLPHENOL	750	UL	R
4-BROMOPHENYL PHENYL ETHER	370	UL	R
4-CHLORO-3-METHYLPHENOL	370	UL	R
4-CHLOROANILINE	370	UL	R
4-CHLOROPHENYL PHENYL ETHER	370	UL	R
4-METHYLPHENOL	370	UL	R
4-NITROANILINE	750	UL	R
4-NITROPHENOL	750	UL	R
ACENAPHTHENE	370	UL	R
ACENAPHTHYLENE	370	UL	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	370	UL	R
BENZO(A)ANTHRACENE	370	UL	R
BENZO(A)PYRENE	370	UL	R
BENZO(B)FLUORANTHENE	370	UL	R
BENZO(G,H,I)PERYLENE	370	UL	R
BENZO(K)FLUORANTHENE	370	UL	R
BIS(2-CHLOROETHOXY)METHANE	370	UL	R
BIS(2-CHLOROETHYL)ETHER	370	UL	R
BIS(2-ETHYLHEXYL)PHTHALATE	370	UL	R
BUTYL BENZYL PHTHALATE	370	UL	R
CARBAZOLE	370	UL	R
CHRYSENE	370	UL	R
DIBENZO(A,H)ANTHRACENE	370	UL	R
DIBENZOFURAN	370	UL	R
DIETHYL PHTHALATE	370	UL	R
DIMETHYL PHTHALATE	370	UL	R
DI-N-BUTYL PHTHALATE	370	UL	R
DI-N-OCTYL PHTHALATE	370	UL	R
FLUORANTHENE	370	UL	R
FLUORENE	370	UL	R
HEXACHLOROBENZENE	370	UL	R
HEXACHLOROBUTADIENE	370	UL	R
HEXACHLOROCYCLOPENTADIENE	370	UL	R
HEXACHLOROETHANE	370	UL	R
INDENO(1,2,3-CD)PYRENE	370	UL	R
ISOPHORONE	370	UL	R
NAPHTHALENE	370	UL	R
NITROBENZENE	370	UL	R
N-NITROSO-DI-N-PROPYLAMINE	370	UL	R
N-NITROSODIPHENYLAMINE	370	UL	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	750	UL	R
PHENANTHRENE	370	UL	R
PHENOL	370	UL	R
PYRENE	370	UL	R

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-118-0709	nsample	FTA-SU-118-0709	nsample	FTA-SU-118-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-24A	lab_id	B0215-24A	lab_id	B0215-24A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	94	Pct_Solids	94	Pct_Solids	94
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	350	UL	R
1,2-DICHLOROBENZENE	350	UL	R
1,3-DICHLOROBENZENE	350	UL	R
1,4-DICHLOROBENZENE	350	UL	R
2,2'-OXYBIS(1-CHLOROPROPANE)	350	UL	R
2,4,5-TRICHLOROPHENOL	700	UL	R
2,4,6-TRICHLOROPHENOL	350	UL	R
2,4-DICHLOROPHENOL	350	UL	R
2,4-DIMETHYLPHENOL	350	UL	R
2,4-DINITROPHENOL	700	UL	R
2,4-DINITROTOLUENE	350	UL	R
2,6-DINITROTOLUENE	350	UL	R
2-CHLORONAPHTHALENE	350	UL	R
2-CHLOROPHENOL	350	UL	R
2-METHYLNAPHTHALENE	350	UL	R
2-METHYLPHENOL	350	UL	R
2-NITROANILINE	700	UL	R
2-NITROPHENOL	350	UL	R
3,3'-DICHLOROBENZIDINE	350	UL	R
3-NITROANILINE	700	UL	R
4,6-DINITRO-2-METHYLPHENOL	700	UL	R
4-BROMOPHENYL PHENYL ETHER	350	UL	R
4-CHLORO-3-METHYLPHENOL	350	UL	R
4-CHLOROANILINE	350	UL	R
4-CHLOROPHENYL PHENYL ETHER	350	UL	R
4-METHYLPHENOL	350	UL	R
4-NITROANILINE	700	UL	R
4-NITROPHENOL	700	UL	R
ACENAPHTHENE	350	UL	R
ACENAPHTHYLENE	350	UL	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	350	UL	R
BENZO(A)ANTHRACENE	48	J	PR
BENZO(A)PYRENE	350	UL	R
BENZO(B)FLUORANTHENE	46	J	PR
BENZO(G,H,I)PERYLENE	350	UL	R
BENZO(K)FLUORANTHENE	350	UL	R
BIS(2-CHLOROETHOXY)METHANE	350	UL	R
BIS(2-CHLOROETHYL)ETHER	350	UL	R
BIS(2-ETHYLHEXYL)PHTHALATE	350	UL	R
BUTYL BENZYL PHTHALATE	350	UL	R
CARBAZOLE	350	UL	R
CHRYSENE	52	J	PR
DIBENZO(A,H)ANTHRACENE	350	UL	R
DIBENZOFURAN	350	UL	R
DIETHYL PHTHALATE	350	UL	R
DIMETHYL PHTHALATE	350	UL	R
DI-N-BUTYL PHTHALATE	350	UL	R
DI-N-OCTYL PHTHALATE	350	UL	R
FLUORANTHENE	72	J	PR
FLUORENE	350	UL	R
HEXACHLOROBENZENE	350	UL	R
HEXACHLOROBUTADIENE	350	UL	R
HEXACHLOROCYCLOPENTADIENE	350	UL	R
HEXACHLOROETHANE	350	UL	R
INDENO(1,2,3-CD)PYRENE	350	UL	R
ISOPHORONE	350	UL	R
NAPHTHALENE	350	UL	R
NITROBENZENE	350	UL	R
N-NITROSO-DI-N-PROPYLAMINE	350	UL	R
N-NITROSODIPHENYLAMINE	350	UL	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	700	UL	R
PHENANTHRENE	350	UL	R
PHENOL	350	UL	R
PYRENE	59	J	PR

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SDG: B0215 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-DUP3	nsample	FTA-SU-DUP3	nsample	FTA-SU-DUP3
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-12A	lab_id	B0215-12A	lab_id	B0215-12A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:	FTA-SU-114-0204	DUP_OF:	FTA-SU-114-0204	DUP_OF:	FTA-SU-114-0204

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	U	
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

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SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SS-112	nsample	FTA-SS-113	nsample	FTA-SS-114
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-03A	lab_id	B0215-06A	lab_id	B0215-09A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SS-115	nsample	FTA-SS-116	nsample	FTA-SS-117
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-13A	lab_id	B0215-16A	lab_id	B0215-19A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	90	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	630	J	U

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SS-118	nsample	FTA-SU-112-0204	nsample	FTA-SU-112-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-22A	lab_id	B0215-04A	lab_id	B0215-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0709	nsample	FTA-SU-114-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-07A	lab_id	B0215-08A	lab_id	B0215-10A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SU-114-0709	nsample	FTA-SU-115-0204	nsample	FTA-SU-115-0810
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-11A	lab_id	B0215-14A	lab_id	B0215-15A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0709	nsample	FTA-SU-117-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-17A	lab_id	B0215-18A	lab_id	B0215-20A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	89	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SU-117-0709	nsample	FTA-SU-118-0204	nsample	FTA-SU-118-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-21A	lab_id	B0215-23A	lab_id	B0215-24A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	88	Pct_Solids	94
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	FTA-SU-DUP3
samp_date	2/5/2003
lab_id	B0215-12A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	FTA-SU-114-0204

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	2		
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	4		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	2		
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	6		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	6		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	TB-020503
samp_date	2/5/2003
lab_id	B0215-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-020503
samp_date	2/5/2003
lab_id	B0215-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	10	U	
2,4-DICHLOROPHENOL	10	U	
2,4-DIMETHYLPHENOL	10	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	10	U	
2,6-DINITROTOLUENE	10	U	
2-CHLORONAPHTHALENE	10	U	
2-CHLOROPHENOL	10	U	
2-METHYLNAPHTHALENE	10	U	
2-METHYLPHENOL	10	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	10	U	
3,3'-DICHLOROBENZIDINE	10	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	10	U	
4-CHLORO-3-METHYLPHENOL	10	U	
4-CHLOROANILINE	10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U	
4-METHYLPHENOL	10	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	10	U	
ACENAPHTHYLENE	10	U	

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	10	U	
BENZO(A)ANTHRACENE	10	U	
BENZO(A)PYRENE	10	U	
BENZO(B)FLUORANTHENE	10	U	
BENZO(G,H,I)PERYLENE	10	U	
BENZO(K)FLUORANTHENE	10	U	
BIS(2-CHLOROETHOXY)METHANE	10	U	
BIS(2-CHLOROETHYL)ETHER	10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	
BUTYL BENZYL PHTHALATE	10	U	
CARBAZOLE	20	U	
CHRYSENE	10	U	
DIBENZO(A,H)ANTHRACENE	10	U	
DIBENZOFURAN	10	U	
DIETHYL PHTHALATE	10	U	
DIMETHYL PHTHALATE	10	U	
DI-N-BUTYL PHTHALATE	10	U	
DI-N-OCTYL PHTHALATE	10	U	
FLUORANTHENE	10	U	
FLUORENE	10	U	
HEXACHLOROBENZENE	10	U	
HEXACHLOROBUTADIENE	10	U	
HEXACHLOROCYCLOPENTADIENE	10	U	
HEXACHLOROETHANE	10	U	
INDENO(1,2,3-CD)PYRENE	10	U	
ISOPHORONE	10	U	
NAPHTHALENE	10	U	
NITROBENZENE	10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U	
N-NITROSODIPHENYLAMINE	10	U	

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	10	U	
PHENOL	10	U	
PYRENE	10	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	10	U	
2,4-DICHLOROPHENOL	10	U	
2,4-DIMETHYLPHENOL	10	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	10	U	
2,6-DINITROTOLUENE	10	U	
2-CHLORONAPHTHALENE	10	U	
2-CHLOROPHENOL	10	U	
2-METHYLNAPHTHALENE	10	U	
2-METHYLPHENOL	10	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	10	U	
3,3'-DICHLOROBENZIDINE	10	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	10	U	
4-CHLORO-3-METHYLPHENOL	10	U	
4-CHLOROANILINE	10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U	
4-METHYLPHENOL	10	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	10	U	
ACENAPHTHYLENE	10	U	

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	10	U	
BENZO(A)ANTHRACENE	10	U	
BENZO(A)PYRENE	10	U	
BENZO(B)FLUORANTHENE	10	U	
BENZO(G,H,I)PERYLENE	10	U	
BENZO(K)FLUORANTHENE	10	U	
BIS(2-CHLOROETHOXY)METHANE	10	U	
BIS(2-CHLOROETHYL)ETHER	10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	
BUTYL BENZYL PHTHALATE	10	U	
CARBAZOLE	20	U	
CHRYSENE	10	U	
DIBENZO(A,H)ANTHRACENE	10	U	
DIBENZOFURAN	10	U	
DIETHYL PHTHALATE	10	U	
DIMETHYL PHTHALATE	10	U	
DI-N-BUTYL PHTHALATE	10	U	
DI-N-OCTYL PHTHALATE	10	U	
FLUORANTHENE	10	U	
FLUORENE	10	U	
HEXACHLOROBENZENE	10	U	
HEXACHLOROBUTADIENE	10	U	
HEXACHLOROCYCLOPENTADIENE	10	U	
HEXACHLOROETHANE	10	U	
INDENO(1,2,3-CD)PYRENE	10	U	
ISOPHORONE	10	U	
NAPHTHALENE	10	U	
NITROBENZENE	10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U	
N-NITROSODIPHENYLAMINE	10	U	

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	10	U	
PHENOL	10	U	
PYRENE	10	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	10	U	
2,4-DICHLOROPHENOL	10	U	
2,4-DIMETHYLPHENOL	10	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	10	U	
2,6-DINITROTOLUENE	10	U	
2-CHLORONAPHTHALENE	10	U	
2-CHLOROPHENOL	10	U	
2-METHYLNAPHTHALENE	10	U	
2-METHYLPHENOL	10	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	10	U	
3,3'-DICHLOROBENZIDINE	10	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	10	U	
4-CHLORO-3-METHYLPHENOL	10	U	
4-CHLOROANILINE	10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U	
4-METHYLPHENOL	10	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	10	U	
ACENAPHTHYLENE	10	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	10	U	
BENZO(A)ANTHRACENE	10	U	
BENZO(A)PYRENE	10	U	
BENZO(B)FLUORANTHENE	10	U	
BENZO(G,H,I)PERYLENE	10	U	
BENZO(K)FLUORANTHENE	10	U	
BIS(2-CHLOROETHOXY)METHANE	10	U	
BIS(2-CHLOROETHYL)ETHER	10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	
BUTYL BENZYL PHTHALATE	10	U	
CARBAZOLE	20	U	
CHRYSENE	10	U	
DIBENZO(A,H)ANTHRACENE	10	U	
DIBENZOFURAN	10	U	
DIETHYL PHTHALATE	10	U	
DIMETHYL PHTHALATE	10	U	
DI-N-BUTYL PHTHALATE	10	U	
DI-N-OCTYL PHTHALATE	10	U	
FLUORANTHENE	10	U	
FLUORENE	10	U	
HEXACHLOROBENZENE	10	U	
HEXACHLOROBUTADIENE	10	U	
HEXACHLOROCYCLOPENTADIENE	10	U	
HEXACHLOROETHANE	10	U	
INDENO(1,2,3-CD)PYRENE	10	U	
ISOPHORONE	10	U	
NAPHTHALENE	10	U	
NITROBENZENE	10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U	
N-NITROSODIPHENYLAMINE	10	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	10	U	
PHENOL	10	U	
PYRENE	10	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION: P

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4879

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	4	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4879

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	2	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4879

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4877

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4877

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	2	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4877

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4878

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4878

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4878

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4876

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4876

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4876

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3563

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3563

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3563

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3561

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3561

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3561

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3562

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3562

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D3562

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/06/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-26C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9180F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/06/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-020403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-02C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9178F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/06/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-020503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: B0215-25C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9179F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/06/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2432

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 15 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2432

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 15 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2432

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 15 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2435

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	11	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2435

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2435

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.56	6	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2438

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	20	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2438

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2438

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.56	5	J
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2476

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	9	J
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	8	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2476

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2476

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2491

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	1	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2491

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16C

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2491

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19C

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2506

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 14 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	15	U
74-87-3	Chloromethane	15	U
75-01-4	Vinyl Chloride	15	U
74-83-9	Bromomethane	15	U
75-00-3	Chloroethane	15	U
75-69-4	Trichlorofluoromethane	15	U
75-35-4	1,1-Dichloroethene	15	U
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	15	U
75-09-2	Methylene Chloride	15	U
156-60-5	trans-1,2-Dichloroethene	15	U
1634-04-4	Methyl tert-butyl ether	15	U
75-34-3	1,1-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
156-59-2	cis-1,2-Dichloroethene	15	U
67-66-3	Chloroform	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
107-06-2	1,2-Dichloroethane	15	U
71-43-2	Benzene	15	U
79-01-6	Trichloroethene	15	U
78-87-5	1,2-Dichloropropane	15	U
75-27-4	Bromodichloromethane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
79-00-5	1,1,2-Trichloroethane	15	U
127-18-4	Tetrachloroethene	15	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	15	U
106-93-4	1,2-Dibromoethane	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19C

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2506

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 14 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	15	U
95-47-6	o-Xylene	15	U
1330-20-7	Xylene (Total)	15	U
100-42-5	Styrene	15	U
75-25-2	Bromoform	15	U
98-82-8	Isopropylbenzene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-67-8	1,3,5-Trimethylbenzene	15	U
95-63-6	1,2,4-Trimethylbenzene	15	U
541-73-1	1,3-Dichlorobenzene	15	U
106-46-7	1,4-Dichlorobenzene	15	U
95-50-1	1,2-Dichlorobenzene	15	U
96-12-8	1,2-Dibromo-3-chloropropane	15	U
120-82-1	1,2,4-Trichlorobenzene	15	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	15	U
79-20-9	Methyl Acetate	15	U
110-81-7	Cyclohexane	15	U
108-87-2	Methylcyclohexane	15	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19C

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2506

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 14 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2507

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2507

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2507

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2433

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2433

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2433

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V1F2490

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V1F2490

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	13	U
79-20-9	Methyl Acetate	13	U
110-81-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V1F2490

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2436

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2436

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2436

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.56	6	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2437

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2437

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2437

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.56	7	J
2.					
3.					
4.					
5.					
6.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2439

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	7	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2439

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V1F2439

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (mL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.57	4	NJ
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2492

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2492

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2492

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2477

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2477

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	13	U
79-20-9	Methyl Acetate	13	U
110-81-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2477

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2478

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	3	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2478

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15B

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V1F2478

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 9 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.54	6	NJ
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2504

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2504

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2504

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2483

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2483

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2483

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 11 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2485

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	12	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	3	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

92A

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2485

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V1F2485

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2486

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	3	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2486

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V1F2486

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 8 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2508

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	13	U
75-15-0	Carbon Disulfide	13	U
75-09-2	Methylene Chloride	13	U
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2508

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	13	U
79-20-9	Methyl Acetate	13	U
110-81-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2508

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 12 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24B

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2489

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 6 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	14	U
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	3	JB
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24B

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2489

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 6 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	14	U
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24B

Sample wt/vol: 3.9 (g/mL) G Lab File ID: V1F2489

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 6 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2475

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	12	J
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2475

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	14	U
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V1F2475

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: not dec. 10 Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2270

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	790	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	790	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	790	U
83-32-9	Acenaphthene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2270

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	790	U
100-02-7	4-Nitrophenol	790	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	790	U
534-52-1	4,6-Dinitro-2-methylphenol	790	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	790	U
85-01-8	Phenanthrene	62	J
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	190	J
129-00-0	Pyrene	180	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	130	J
218-01-9	Chrysene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	140	J
207-08-9	Benzo(k)fluoranthene	65	J
50-32-8	Benzo(a)pyrene	90	J
193-39-5	Indeno(1,2,3-cd)pyrene	47	J
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	57	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2270

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.37	270	J
2.	2461-18-9	OXIRANE, [(DODECYLOXY)METHYL	21.73	190	NJ
3.	18435-45-5	1-NONADECENE	24.25	160	NJ
4.	4651-51-8	ERGOST-5-EN-3-OL, (3.BETA.)-	27.02	420	NJ
5.		UNKNOWN	27.21	4000	J
6.		UNKNOWN	27.27	310	J
7.		UNKNOWN	27.39	420	J
8.		UNKNOWN	27.47	320	J
9.		UNKNOWN	27.94	700	J
10.		UNKNOWN	28.74	240	J
11.		UNKNOWN	29.22	180	J
12.		UNKNOWN	29.36	200	J
13.		UNKNOWN	29.59	220	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2271

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2271

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	81	J
129-00-0	Pyrene	65	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	40	J
218-01-9	Chrysene	46	J
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	49	J
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	37	J
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2271

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	293-96-9	CYCLODECANE	13.19	240	NJ
2.		UNKNOWN	15.38	520	J
3.		UNKNOWN	20.92	150	J
4.		UNKNOWN	25.63	540	J
5.	57-88-5	CHOLESTEROL	26.04	150	NJ
6.		UNKNOWN	27.02	250	J
7.		UNKNOWN	27.95	1500	J
8.		UNKNOWN	28.10	170	J
9.		UNKNOWN	28.57	150	J
10.	1058-61-3	STIGMAST-4-EN-3-ONE	29.59	950	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2168

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2168

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2168

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.37	1000	J
2.		UNKNOWN	27.29	1500	J
3.		UNKNOWN	28.68	220	J
4.		UNKNOWN	28.88	170	J
5.		UNKNOWN	29.50	900	J
6.		UNKNOWN	29.75	480	J
7.		UNKNOWN	29.90	550	J
8.		UNKNOWN	30.37	940	J
9.	20475-86-9	URS-12-EN-24-OIC ACID, 3-OXO	30.46	780	NJ
10.					
11.					
12.					
13.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2172

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2172

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2172

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	30.42	240	J
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2272

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2272

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2272

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	2004-39-9	1-HEPTACOSANOL	21.73	200	NJ
2.		UNKNOWN	21.97	220	J
3.	74685-33-9	3-EICOSENE, (E)-	23.02	170	NJ
4.		UNKNOWN	24.12	400	J
5.		UNKNOWN	25.15	740	J
6.	4651-51-8	ERGOST-5-EN-3-OL, (3.BETA.)-	27.02	570	NJ
7.		UNKNOWN	27.19	460	J
8.		UNKNOWN	27.27	440	J
9.		UNKNOWN	27.47	260	J
10.		UNKNOWN	27.94	690	J
11.		UNKNOWN	28.58	310	J
12.		UNKNOWN	28.75	420	J
13.		UNKNOWN	29.15	440	J
14.		UNKNOWN	29.36	310	J
15.		UNKNOWN	29.60	420	J
16.		UNKNOWN	30.29	710	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2273

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	760	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2273

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2273

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	271-89-6	BENZOFURAN	13.00	230	NJ
2.	605-48-1	ANTHRACENE, 9,10-DICHLORO-	19.64	350	NJ
3.	72-54-8	1,1-DICHLORO-2,2-BIS(P-CHLOR	20.92	490	NJ
4.		UNKNOWN	27.02	410	J
5.		UNKNOWN	27.20	2200	J
6.		UNKNOWN	27.27	380	J
7.		UNKNOWN	27.38	410	J
8.		UNKNOWN	27.47	270	J
9.		UNKNOWN	27.94	680	J
10.		UNKNOWN	28.58	280	J
11.		UNKNOWN	28.67	220	J
12.		UNKNOWN	28.76	560	J
13.		UNKNOWN	29.18	280	J
14.		UNKNOWN	29.35	340	J
15.		UNKNOWN	29.60	400	J
16.		UNKNOWN	29.74	260	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2229

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2229

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	260	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2229

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	27.50	180	J
2.		UNKNOWN	28.90	230	J
3.		UNKNOWN	29.52	390	J
4.		UNKNOWN	29.75	290	J
5.		UNKNOWN	29.91	170	J
6.		UNKNOWN	30.38	150	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2164

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2164

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1120204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2164

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2165

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2165

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2165

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.32	230	J
2.		UNKNOWN	22.45	1900	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2166

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2166

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1130204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2166

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.31	230	J
2.		UNKNOWN	22.45	1600	J
3.					
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2167

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2167

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1130709

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2167

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.43	1700	J
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08ARE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2501

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08ARE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2501

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1130709RE

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08ARE

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2501

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2302

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2302

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1140204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2302

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2170

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2170

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1140709

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2170

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.34	210	J
2.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2173

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2173

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1150204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2173

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.23	190	J
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2303

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2303

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1150810

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2303

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.21	150	J
2.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2265

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	710	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	710	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	710	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2265

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	710	U
100-02-7	4-Nitrophenol	710	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	710	U
534-52-1	4,6-Dinitro-2-methylphenol	710	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	710	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1160204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2265

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2268

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2268

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1160709

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2268

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2304

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2304

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1170204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2304

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.24	480	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2226

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	720	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	720	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	720	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2226

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	720	U
100-02-7	4-Nitrophenol	720	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	720	U
534-52-1	4,6-Dinitro-2-methylphenol	720	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	720	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1170709

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2226

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.43	150	J
2.		UNKNOWN	23.59	240	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2227

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	750	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	750	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	750	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2227

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	750	U
100-02-7	4-Nitrophenol	750	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	750	U
534-52-1	4,6-Dinitro-2-methylphenol	750	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	750	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2227

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.33	350	J
2.		UNKNOWN	22.47	1000	J
3.		UNKNOWN	23.60	300	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23ARE

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2500

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	750	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	750	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	750	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23ARE

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2500

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	750	U
100-02-7	4-Nitrophenol	750	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	750	U
534-52-1	4,6-Dinitro-2-methylphenol	750	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	750	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1180204RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23ARE

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2500

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2228

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	700	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	700	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2228

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	700	U
100-02-7	4-Nitrophenol	700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	700	U
534-52-1	4,6-Dinitro-2-methylphenol	700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	72	J
129-00-0	Pyrene	59	J
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	48	J
218-01-9	Chrysene	52	J
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	46	J
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV118070

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2228

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.33	350	J
2.		UNKNOWN	22.45	790	J
3.		UNKNOWN	23.60	220	J
4.					
5.					
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24ARE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2499

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	700	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	700	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	700	U
83-32-9	Acenaphthene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV118070RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24ARE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2499

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	700	U
100-02-7	4-Nitrophenol	700	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	700	U
534-52-1	4,6-Dinitro-2-methylphenol	700	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	700	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV118070RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24ARE

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2499

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2232

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2232

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2232

Level: (low/med) LOW Date Received: 02/06/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.60	190	J
2.					
3.					
4.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-03A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9346F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9349F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-09A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9352F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-13A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9364F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-16A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9367F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-19A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9383F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	630	P

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTASS118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-22A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9394F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9347F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1120709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-05A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9348F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1130204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-07A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9350F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1130709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9351F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1140204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-10A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9353F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1140709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-11A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9362F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1150204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-14A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9365F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1150810

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-15A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9366F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-17A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9368F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1160709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-18A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9382F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-20A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9384F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1170709

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-21A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9385F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1180204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-23A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9395F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV118070

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-24A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9396F

% Moisture: 6 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SVDUP3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: B0215-12A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9363F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/06/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

APPENDIX C

SUPPORT DOCUMENTATION

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTA-SV-116-0204L	B0215-17AL	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-118-070	B0215-24A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
%	LCSS	0210LCSS	LCS	B0215	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSS1	0210LCSS	LCS	B0215	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSW	0210LCSW	LCS	B0215	M	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0215	M	/ /	02/10/03	02/10/03	0	0	0
MG/KG	PBS1	0210PBS	M_BLANK	B0215	M	/ /	02/10/03	02/10/03	0	0	0
UG/L	PBW	0210PBW	M_BLANK	B0215	M	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020403	B0215-02B	NORMAL	B0215	M	02/05/03	02/10/03	02/11/03	5	1	6
UG/L	RB-020503	B0215-25B	NORMAL	B0215	M	02/05/03	02/10/03	02/11/03	5	1	6
ug/L %	FB-020503	B0215-26C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
ug/kg %	FTA-SS-112	B0215-03A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SS-113	B0215-06A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-114	B0215-09A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SS-115	B0215-13A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SS-116	B0215-16A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-117	B0215-19A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-118	B0215-22A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23

-SU-

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-113-0709RE	B0215-08ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0204MSD	B0215-17AMSD	MSD	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-0204RE	B0215-23ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-118-070	B0215-24A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-070RE	B0215-24ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	RB-020403	B0215-02C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
%	RB-020503	B0215-25C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
%	SBLK1C	MB-5501	M_BLANK	B0215	OS	/ /	02/06/03	02/11/03	0	5	0
%	SBLK1CLCS	LCS-5501	LCS	B0215	OS	/ /	02/06/03	02/11/03	0	5	0
%	SBLK2B	MB-5703	M_BLANK	B0215	OS	/ /	02/19/03	02/25/03	0	6	0
%	SBLK2BLCS	LCS-5703	LCS	B0215	OS	/ /	02/19/03	02/25/03	0	6	0
%	SBLK2F	MB-5702	M_BLANK	B0215	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2FLCS	LCS-5702	LCS	B0215	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2P	MB-6006	M_BLANK	B0215	OS	/ /	03/10/03	03/11/03	0	1	0
%	SBLK2PLCS	LCS-6006	LCS	B0215	OS	/ /	03/10/03	03/11/03	0	1	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FB-020503	B0215-26A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
UG/KG	FTA-SS-112	B0215-03C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-113	B0215-06C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-114	B0215-09C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-115	B0215-13C	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SS-116	B0215-16C	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SS-117	B0215-19C	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SS-118	B0215-22C	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-112-0204	B0215-04B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-112-0709	B0215-05B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-113-0204	B0215-07B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-113-0709	B0215-08B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-114-0204	B0215-10B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-114-0709	B0215-11B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-115-0204	B0215-14B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-115-0810	B0215-15B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-116-0204	B0215-17B	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-116-0204MS	B0215-17BMS	MS	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-116-0204MSD	B0215-17BMSD	MSD	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-116-0709	B0215-18B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-117-0204	B0215-20B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-117-0709	B0215-21B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-118-0204	B0215-23B	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-118-070	B0215-24B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-DUP3	B0215-12B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	RB-020403	B0215-02A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
%	RB-020503	B0215-25A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	TB-020503	B0215-01A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
%	VBLK1P	V1B0210A	M_BLANK	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1PLCS	V1L0210A	LCS	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1PLCSD	V1L0210B	LCSD	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1Q	V1B0211A	M_BLANK	B0215	OV	/ /	02/11/03	02/11/03	0	0	0
%	VBLK1QLCS	V1L0211A	LCS	B0215	OV	/ /	02/11/03	02/11/03	0	0	0
%	VBLK1R	V1B0212A	M_BLANK	B0215	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK1RLCS	V1L0212A	LCS	B0215	OV	/ /	02/12/03	02/12/03	0	0	0
UG/L	VBLK6E	V6B0214A	M_BLANK	B0215	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK6ELCS	V6L0214A	LCS	B0215	OV	/ /	02/14/03	02/14/03	0	0	0
%	BBLK1C	MB-5498	M_BLANK	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1CLCS	LCS-5498	LCS	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1CLCSD	LCSD-5498	LCSD	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1H	MB-5670	M_BLANK	B0215	PCB	/ /	02/18/03	02/20/03	0	2	0
%	BBLK1HLCS	LCS-5670	LCS	B0215	PCB	/ /	02/18/03	02/20/03	0	2	0
%	BBLK1I	MB-5689	M_BLANK	B0215	PCB	/ /	02/18/03	02/21/03	0	3	0
%	BBLK1ILCS	LCS-5689	LCS	B0215	PCB	/ /	02/18/03	02/21/03	0	3	0
UG/L	FB-020503	B0215-26C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
ug/kg %	FTA-SS-112	B0215-03A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SS-113	B0215-06A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SS-114	B0215-09A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-115	B0215-13A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-116	B0215-16A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-117	B0215-19A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-118	B0215-22A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15

-SV-

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204MSD	B0215-17AMSD	MSD	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-118-070	B0215-24A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	RB-020403	B0215-02C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
UG/L	RB-020503	B0215-25C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
S.U.	FTA-SS-112	B0215-03A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-113	B0215-06A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-114	B0215-09A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-115	B0215-13A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-116	B0215-16A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-117	B0215-19A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-118	B0215-22A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6

MITKEM CORPORATION
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: 30215
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	40z Amber glass MTBE	40z Amber glass PCB	40z Metals glass	40z Amber glass 10% Moisture	4oz Amber glass Encore sample	40z Amber glass MTBE	40z Amber glass 10% Moisture	1 Liter Amber glass SVOC	500 ml poly HNO3 TAL Metals	COMMENTS
TB-020503	2/15/03 / 0700		X	X			01	2	2										
RB-020403	2/15/03 / 0725		X	X			02	7	2								2	2	1
FTA-SS-112	2/5/03 / 0800		X		X		03	7		1	1	1	1	3					
FTA-SU-112-0204	2/5/03 / 0815		X		X		04	5		1				3					
FTA-SU-112-0709	2/5/03 / 0830		X		X		05	5		1				3	1				
FTA-SS-113	2/5/03 / 0846		X		X		06	7		1	1	1	1	3					
FTA-SU-113-0204	2/5/03 / 0858		X		X		07	5		1				3					
FTA-SU-113-0709	2/5/03 / 0904		X		X		08	5		1				3	1				
FTA-SS-114	2/5/03 / 0922		X		X		09	7		1	1	1	1	3					
FTA-SU-114-0204	2/5/03 / 0935		X		X		10	5		1				3					
FTA-SU-114-0709	2/5/03 / 0955		X		X		11	5		1				3	1				
FTA-SU-Dup 3	2/5/03 / 0940		X		X		12	5		1				3	1				

5/6/03

TSR#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Wagner	2/5/03 / 1700	D Patterson	2-6-03 / 0900	Shipped via Fed Ex	5°
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		/		/	8286 8470 7100	

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CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9868	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0215
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES	COMMENTS
FTA-SS-115	2/5/03 1030		X		X		13	7	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Metals + PH; 1 4oz Amber Glass TAL Pesticides + PCB; 1 8oz Amber Glass Grain Size; 1 4oz Amber Glass TAL Pesticides + Moisture	
FTA-SU-115-0204	2/5/03 1044		X		X		14	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass	
FTA-SU-115-0810	2/5/03 1115		X		X		15	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass	DS 6/6/03
FTA-SS-116	2/5/03 1128		X		X		14	7	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Metals + PH; 1 4oz Amber Glass TAL Pesticides + PCB; 1 8oz Amber Glass Grain Size; 1 4oz Amber Glass TAL Pesticides + Moisture	
FTA-SU-116-0204	2/5/03 1138		X		X		17	15	9 VOA + MTBE; 3 4oz Amber Glass SVOA + PAH; 3 4oz Amber Glass TAL Pesticides + PCB	DO MS/MSD
FTA-SU-116-0709	2/5/03 1157		X		X		18	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Pesticides + PCB	
FTA-SS-117	2/5/03 1210		X		X		19	7	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Metals + PH; 1 4oz Amber Glass TAL Pesticides + PCB; 1 8oz Amber Glass Grain Size; 1 4oz Amber Glass TAL Pesticides + Moisture	
FTA-SU-117-0204	2/5/03 1222		X		X		20	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Pesticides + PCB	
FTA-SU-117-0709	2/5/03 1235		X		X		21	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Pesticides + PCB	
FTA-SS-118	2/5/03 1248		X		X		22	7	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Metals + PH; 1 4oz Amber Glass TAL Pesticides + PCB; 1 8oz Amber Glass Grain Size; 1 4oz Amber Glass TAL Pesticides + Moisture	
FTA-SU-118-0204	2/5/03 1300		X		X		23	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Pesticides + PCB	
FTA-SU-118-070	2/5/03 1315		X		X		24	5	3 VOA + MTBE; 1 4oz Amber Glass SVOA + PAH; 1 4oz Amber Glass TAL Pesticides + PCB	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/5/03 1700	[signature]	2-6-03 0900	Shipped Via Fed Ex Airbill No 8286 8470 7100	
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CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #: B0215
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 648

CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA via HCl; VOC + MTBE; TCL+TAL Aroll Glass; 1 Lit. Amb. Glass; PCB; 500 ml Poly HNO3; TAL Metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA via HCl	VOC + MTBE	TCL+TAL Aroll Glass	1 Lit. Amb. Glass	PCB	500 ml Poly HNO3	TAL Metals	COMMENTS
RB-020503	2/5/03 1400		X	X			25	7	2	2	2	1				
FB-020503	2/5/03 1515		X	X			26	7	2	2	2	1				
	/															5/6/03
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
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		/		/		

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MITKEM CORPORATION

"Environmental Testing For The New Millennium"

March 19, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0215

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for four aqueous and twenty-two soil samples that were collected on February 5, 2003, and received at Mitkem on February 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of vinyl chloride, bromomethane, chloroethane and trichlorofluoromethane in V6ELCS and high recovery of chloroethane in V1QLCS and V1PLCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of high recovery of chloroethane in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of several surrogates in samples SV1130709, SV1180204 and SV118070. The samples were re-extracted and analyzed with surrogate recoveries within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine in S1CLCS, high recovery of 4-nitroaniline and carbazole in S2FLCS and low recovery of di-n-octylphthalate in S2PLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dinitrophenol.

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Sample analysis: samples SV1130709, SV1180204 and SV118070 were re-extracted outside of hold time. The initial extraction was within hold time but had non-compliant surrogate recoveries. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a low reporting limit. These samples were extracted with samples requiring a lower reporting limit. No other unusual observation was made for the analysis.

5. Metals Analysis (SDG A):

Due to the large number of samples, metals results are arranged into three Sample Delivery Groups, SDG B0215A, B0215B and B0215C. Matrix spike/duplicate analysis was performed where required. Results are qualified where necessary for those samples associated with each spike/duplicate. Raw analysis data for all SDGs follow Form 14 for SDG B0215C.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. Metals Analysis (SDG B):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1160204. Replicate RPDs were within the QC limits with the exception of manganese. Manganese is flagged with an "*" on Form 1's.

Sample analysis: manganese was outside of QC limits in the serial dilution. Manganese is flagged with an "E" flag on Form 1's. No other unusual observation was made for the analysis.

7. Metals Analysis (SDG C):

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

8. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

9. Grain size Analysis:

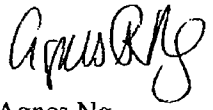
Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

10. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.



Agnes Ng
CLP Project Manager
03/19/03

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: V6B0214A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4862

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: V6B0214A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4862

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK6E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: V6B0214A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C4862

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0210A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2422

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0210A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2422

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0210A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2422

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/10/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1Q

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0211A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2472

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

5/6/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1Q

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0211A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2472

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1Q

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0211A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2472

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/11/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	3	J
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

5/6/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V6C4810 BFB Injection Date: 02/12/03

Instrument ID: (V6) Aqueous BFB Injection Time: 1113

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	57.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	92.0
175	5.0 - 9.0% of mass 174	6.3 (6.9)1
176	95.0 - 101.0% of mass 174	89.0 (96.7)1
177	5.0 - 9.0% of mass 176	6.6 (7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD2006B	V6S0212D	V6C4814	02/12/03	1321
02	VSTD1006B	V6S0212E	V6C4815	02/12/03	1351
03	VSTD0506B	V6S0212A	V6C4816	02/12/03	1421
04	VSTD0206B	V6S0212F	V6C4817	02/12/03	1450
05	VSTD0056B	V6S0212B	V6C4818	02/12/03	1520
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V6C4860 BFB Injection Date: 02/14/03

Instrument ID: V6 BFB Injection Time: 0846

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	57.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	5.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	88.7
175	5.0 - 9.0% of mass 174	5.3 (6.0)1
176	95.0 - 101.0% of mass 174	86.9 (97.9)1
177	5.0 - 9.0% of mass 176	6.4 (7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506E	V6S0214A	V6C4861	02/14/03	0907
* 02	VBLK6E	V6B0214A *	V6C4862	02/14/03	0940
03	V6ELCS	V6L0214A	V6C4863	02/14/03	1014
04	TB-020503	B0215-01A	V6C4876	02/14/03	1702
05	RB-020403	B0215-02A	V6C4877	02/14/03	1731
06	RB-020503	B0215-25A	V6C4878	02/14/03	1759
07	FB-020503	B0215-26A	V6C4879	02/14/03	1828
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4

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: V6 Calibration Date: 02/14/03 Time: 0907

Lab File ID: V6C4861 Init. Calib. Date(s): 02/12/03 02/12/03

Heated Purge: (Y/N) N Init. Calib. Times: 1321 1520

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.300	0.269	0.01	10.3	20.0	
Chloromethane	0.593	0.433	0.1	27.0	20.0	<-
Vinyl Chloride	0.584	0.568	0.01	2.7	20.0	
Bromomethane	0.436	0.355	0.01	18.6	20.0	
Chloroethane	0.351	0.373	0.01	6.3	20.0	
Trichlorofluoromethane	0.754	0.657	0.01	12.9	20.0	
1,1-Dichloroethene	0.556	0.487	0.01	12.4	20.0	
Acetone	0.117	0.158	0.01	35.0	20.0	<-
Carbon Disulfide	0.828	0.724	0.01	12.6	20.0	
Methylene Chloride	0.273	0.281	0.01	2.9	20.0	
trans-1,2-Dichloroethene	0.282	0.261	0.01	7.4	20.0	
Methyl tert-butyl ether	0.778	0.838	0.01	7.7	20.0	
1,1-Dichloroethane	0.485	0.478	0.1	1.4	20.0	
2-Butanone	0.097	0.112	0.01	15.5	20.0	
cis-1,2-Dichloroethene	0.292	0.286	0.01	2.0	20.0	
Chloroform	0.507	0.506	0.01	0.2	20.0	
1,1,1-Trichloroethane	0.423	0.364	0.01	13.9	20.0	
Carbon Tetrachloride	0.445	0.355	0.01	20.2	20.0	<-
1,2-Dichloroethane	0.426	0.444	0.01	4.2	20.0	
Benzene	1.042	1.038	0.01	0.4	20.0	
Trichloroethene	0.303	0.281	0.01	7.3	20.0	
1,2-Dichloropropane	0.274	0.285	0.01	4.0	20.0	
Bromodichloromethane	0.393	0.406	0.01	3.3	20.0	
cis-1,3-Dichloropropene	0.457	0.469	0.01	2.6	20.0	
4-Methyl-2-pentanone	0.194	0.218	0.01	12.4	20.0	
Toluene	1.128	1.111	0.01	1.5	20.0	
trans-1,3-Dichloropropene	0.421	0.440	0.01	4.5	20.0	
1,1,2-Trichloroethane	0.215	0.233	0.01	8.4	20.0	
Tetrachloroethene	0.314	0.260	0.01	17.2	20.0	
2-Hexanone	0.157	0.166	0.01	5.7	20.0	
Dibromochloromethane	0.358	0.370	0.01	3.4	20.0	
1,2-Dibromoethane	0.275	0.292	0.01	6.2	20.0	
Chlorobenzene	0.955	0.961	0.3	0.6	20.0	
Ethylbenzene	0.523	0.479	0.01	8.4	20.0	
m,p-Xylene	0.659	0.606	0.01	8.0	20.0	
o-Xylene	0.667	0.622	0.01	6.7	20.0	
Xylene (Total)	0.662	0.611	0.01	7.7	20.0	

5/6/03

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V1F2360 BFB Injection Date: 02/06/03

Instrument ID: (V1) 30.1 BFB Injection Time: 1302

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.5
75	30.0 - 60.0% of mass 95	39.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.0
175	5.0 - 9.0% of mass 174	5.7 (7.0)1
176	95.0 - 101.0% of mass 174	77.0 (95.1)1
177	5.0 - 9.0% of mass 176	4.7 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501M	V1S0206A	V1F2361	02/06/03	1331
02	VSTD0051M	V1S0206B	V1F2362	02/06/03	1402
03	VSTD2001M	V1S0206C	V1F2363	02/06/03	1433
04	VSTD1001M	V1S0206D	V1F2364	02/06/03	1504
05	VSTD0201M	V1S0206E	V1F2365	02/06/03	1536
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V1F2420 BFB Injection Date: 02/10/03

Instrument ID: V1 BFB Injection Time: 0921

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.1
75	30.0 - 60.0% of mass 95	39.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	74.4
175	5.0 - 9.0% of mass 174	5.4 (7.3)1
176	95.0 - 101.0% of mass 174	73.3 (98.5)1
177	5.0 - 9.0% of mass 176	4.7 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501P	V1S0210A	V1F2421	02/10/03	0954
* 02	VBLK1P	V1B0210A *	V1F2422	02/10/03	1101
03	V1PLCS	V1L0210A	V1F2423	02/10/03	1137
04	V1PLCSD	V1L0210B	V1F2424	02/10/03	1207
05	FTASS112	B0215-03C	V1F2432	02/10/03	1617
06	SV1120204	B0215-04B	V1F2433	02/10/03	1649
07	FTASS113	B0215-06C	V1F2435	02/10/03	1751
08	SV1130204	B0215-07B	V1F2436	02/10/03	1822
09	SV1130709	B0215-08B	V1F2437	02/10/03	1853
10	FTASS114	B0215-09C	V1F2438	02/10/03	1923
11	SV1140204	B0215-10B	V1F2439	02/10/03	1953
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7

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: V1 Calibration Date: 02/10/03 Time: 0954

Lab File ID: V1F2421 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.172	0.192	0.01	11.6	20.0	
Chloromethane	0.405	0.430	0.1	6.2	20.0	
Vinyl Chloride	0.310	0.338	0.01	9.0	20.0	
Bromomethane	0.069	0.052	0.01	24.6	20.0	<-
Chloroethane	0.100	0.118	0.01	18.0	20.0	
Trichlorofluoromethane	0.190	0.228	0.01	20.0	20.0	<-
1,1-Dichloroethene	0.234	0.262	0.01	12.0	20.0	
Acetone	0.093	0.105	0.01	12.9	20.0	
Carbon Disulfide	0.643	0.765	0.01	19.0	20.0	
Methylene Chloride	0.355	0.498	0.01	40.3	20.0	<-
trans-1,2-Dichloroethene	0.292	0.306	0.01	4.8	20.0	
Methyl tert-butyl ether	0.495	0.380	0.01	23.2	20.0	<-
1,1-Dichloroethane	0.496	0.515	0.1	3.8	20.0	
2-Butanone	0.194	0.178	0.01	8.2	20.0	
cis-1,2-Dichloroethene	0.319	0.324	0.01	1.6	20.0	
Chloroform	0.450	0.466	0.01	3.6	20.0	
1,1,1-Trichloroethane	0.257	0.266	0.01	3.5	20.0	
Carbon Tetrachloride	0.242	0.249	0.01	2.9	20.0	
1,2-Dichloroethane	0.278	0.279	0.01	0.4	20.0	
Benzene	1.184	1.242	0.01	4.9	20.0	
Trichloroethene	0.291	0.299	0.01	2.7	20.0	
1,2-Dichloropropane	0.310	0.323	0.01	4.2	20.0	
Bromodichloromethane	0.356	0.370	0.01	3.9	20.0	
cis-1,3-Dichloropropene	0.496	0.509	0.01	2.6	20.0	
4-Methyl-2-pentanone	0.371	0.339	0.01	8.6	20.0	
Toluene	1.164	1.215	0.01	4.4	20.0	
trans-1,3-Dichloropropene	0.418	0.421	0.01	0.7	20.0	
1,1,2-Trichloroethane	0.270	0.263	0.01	2.6	20.0	
Tetrachloroethene	0.311	0.315	0.01	1.3	20.0	
2-Hexanone	0.366	0.331	0.01	9.6	20.0	
Dibromochloromethane	0.422	0.421	0.01	0.2	20.0	
1,2-Dibromoethane	0.397	0.378	0.01	4.8	20.0	
Chlorobenzene	1.053	1.065	0.3	1.1	20.0	
Ethylbenzene	0.531	0.546	0.01	2.8	20.0	
m,p-Xylene	0.676	0.682	0.01	0.9	20.0	
o-Xylene	0.674	0.675	0.01	0.1	20.0	
Xylene (Total)	0.675	0.680	0.01	0.7	20.0	

5/6/03

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: V1 Calibration Date: 02/10/03 Time: 0954

Lab File ID: V1F2421 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.146	1.168	0.01	1.9	20.0	
Bromoform	0.306	0.287	0.1	6.2	20.0	
Isopropylbenzene	1.567	1.620	0.01	3.4	20.0	
1,1,2,2-Tetrachloroethane	1.077	1.059	0.3	1.7	20.0	
1,3,5-Trimethylbenzene	2.384	2.506	0.01	5.1	20.0	
1,2,4-Trimethylbenzene	2.496	2.600	0.01	4.2	20.0	
1,3-Dichlorobenzene	1.657	1.673	0.01	1.0	20.0	
1,4-Dichlorobenzene	1.735	1.747	0.01	0.7	20.0	
1,2-Dichlorobenzene	1.636	1.590	0.01	2.8	20.0	
1,2-Dibromo-3-chloropropane	0.151	0.138	0.01	8.6	20.0	
1,2,4-Trichlorobenzene	1.104	0.991	0.01	10.2	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.171	0.221	0.01	29.2	20.0	<-
Methyl Acetate	0.256	0.244	0.01	4.7	20.0	
Cyclohexane	0.445	0.478	0.01	7.4	20.0	
Methylcyclohexane	0.470	0.516	0.01	9.8	20.0	
Dibromofluoromethane	0.270	0.258	0.01	4.4	20.0	
1,2-Dichloroethane-d4	0.068	0.079	0.01	16.2	20.0	
Toluene-d8	1.289	1.516	0.01	17.6	20.0	
Bromofluorobenzene	0.521	0.554	0.01	6.3	20.0	

5/6/03

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V1F2470 BFB Injection Date: 02/11/03

Instrument ID: V1 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.6
75	30.0 - 60.0% of mass 95	39.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	74.4
175	5.0 - 9.0% of mass 174	5.3 (7.1)1
176	95.0 - 101.0% of mass 174	71.8 (96.5)1
177	5.0 - 9.0% of mass 176	4.7 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501Q	V1S0211A	V1F2471	02/11/03	1003
02	VBLK1Q	V1B0211A	V1F2472	02/11/03	1046
03	V1QLCS	V1L0211A	V1F2473	02/11/03	1120
04	SVDUP3	B0215-12B	V1F2475	02/11/03	1226
05	FTASS115	B0215-13C	V1F2476	02/11/03	1257
06	SV1150204	B0215-14B	V1F2477	02/11/03	1328
07	SV1150810	B0215-15B	V1F2478	02/11/03	1359
08	SV1160204MSD	B0215-17BMSD	V1F2482	02/11/03	1603
09	SV1160709	B0215-18B	V1F2483	02/11/03	1634
10	SV1170204	B0215-20B	V1F2485	02/11/03	1736
11	SV1170709	B0215-21B	V1F2486	02/11/03	1807
12	SV118070	B0215-24B	V1F2489	02/11/03	1939
13	SV1120709	B0215-05B	V1F2490	02/11/03	2009
14	FTASS116	B0215-16C	V1F2491	02/11/03	2040
15	SV1140709	B0215-11B	V1F2492	02/11/03	2110
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: V1 Calibration Date: 02/11/03 Time: 1003

Lab File ID: V1F2471 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.172	0.202	0.01	17.4	20.0	
Chloromethane	0.405	0.413	0.1	2.0	20.0	
Vinyl Chloride	0.310	0.313	0.01	1.0	20.0	
Bromomethane	0.069	0.052	0.01	24.6	20.0	<-
Chloroethane	0.100	0.140	0.01	40.0	20.0	<-
Trichlorofluoromethane	0.190	0.219	0.01	15.3	20.0	
1,1-Dichloroethene	0.234	0.252	0.01	7.7	20.0	
Acetone	0.093	0.098	0.01	5.4	20.0	
Carbon Disulfide	0.643	0.749	0.01	16.5	20.0	
Methylene Chloride	0.355	0.356	0.01	0.3	20.0	
trans-1,2-Dichloroethene	0.292	0.306	0.01	4.8	20.0	
Methyl tert-butyl ether	0.495	0.391	0.01	21.0	20.0	<-
1,1-Dichloroethane	0.496	0.541	0.1	9.1	20.0	
2-Butanone	0.194	0.198	0.01	2.1	20.0	
cis-1,2-Dichloroethene	0.319	0.326	0.01	2.2	20.0	
Chloroform	0.450	0.480	0.01	6.7	20.0	
1,1,1-Trichloroethane	0.257	0.278	0.01	8.2	20.0	
Carbon Tetrachloride	0.242	0.264	0.01	9.1	20.0	
1,2-Dichloroethane	0.278	0.304	0.01	9.4	20.0	
Benzene	1.184	1.281	0.01	8.2	20.0	
Trichloroethene	0.291	0.303	0.01	4.1	20.0	
1,2-Dichloropropane	0.310	0.333	0.01	7.4	20.0	
Bromodichloromethane	0.356	0.392	0.01	10.1	20.0	
cis-1,3-Dichloropropene	0.496	0.534	0.01	7.7	20.0	
4-Methyl-2-pentanone	0.371	0.384	0.01	3.5	20.0	
Toluene	1.164	1.219	0.01	4.7	20.0	
trans-1,3-Dichloropropene	0.418	0.456	0.01	9.1	20.0	
1,1,2-Trichloroethane	0.270	0.292	0.01	8.1	20.0	
Tetrachloroethene	0.311	0.320	0.01	2.9	20.0	
2-Hexanone	0.366	0.385	0.01	5.2	20.0	
Dibromochloromethane	0.422	0.471	0.01	11.6	20.0	
1,2-Dibromoethane	0.397	0.423	0.01	6.5	20.0	
Chlorobenzene	1.053	1.104	0.3	4.8	20.0	
Ethylbenzene	0.531	0.560	0.01	5.5	20.0	
m,p-Xylene	0.676	0.707	0.01	4.6	20.0	
o-Xylene	0.674	0.719	0.01	6.7	20.0	
Xylene (Total)	0.675	0.711	0.01	5.3	20.0	

5/6/03

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: V1F2500A BFB Injection Date: 02/12/03

Instrument ID: V1 BFB Injection Time: 1018

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.3
75	30.0 - 60.0% of mass 95	40.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	82.3
175	5.0 - 9.0% of mass 174	5.9 (7.1)1
176	95.0 - 101.0% of mass 174	80.4 (97.7)1
177	5.0 - 9.0% of mass 176	5.0 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501R	V1S0212A	V1F2501	02/12/03	1117
★ 02	VBLK1R	V1B0212A ★	V1F2502	02/12/03	1156
03	V1RLCS	V1L0212A	V1F2503	02/12/03	1227
04	SV1160204	B0215-17B	V1F2504	02/12/03	1302
05	SV1160204MS	B0215-17BMS	V1F2505	02/12/03	1334
06	FTASS117	B0215-19C	V1F2506	02/12/03	1405
07	FTASS118	B0215-22C	V1F2507	02/12/03	1437
08	SV1180204	B0215-23B	V1F2508	02/12/03	1508
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4

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: V1 Calibration Date: 02/12/03 Time: 1117

Lab File ID: V1F2501 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.172	0.199	0.01	15.7	20.0	
Chloromethane	0.405	0.417	0.1	3.0	20.0	
Vinyl Chloride	0.310	0.323	0.01	-4.2	20.0	
Bromomethane	0.069	0.094	0.01	36.2	20.0	<--
Chloroethane	0.100	0.112	0.01	12.0	20.0	
Trichlorofluoromethane	0.190	0.212	0.01	11.6	20.0	
1,1-Dichloroethene	0.234	0.252	0.01	7.7	20.0	
Acetone	0.093	0.096	0.01	3.2	20.0	
Carbon Disulfide	0.643	0.726	0.01	12.9	20.0	
Methylene Chloride	0.355	0.359	0.01	1.1	20.0	
trans-1,2-Dichloroethene	0.292	0.311	0.01	6.5	20.0	
Methyl tert-butyl ether	0.495	0.543	0.01	9.7	20.0	
1,1-Dichloroethane	0.496	0.541	0.1	9.1	20.0	
2-Butanone	0.194	0.209	0.01	7.7	20.0	
cis-1,2-Dichloroethene	0.319	0.324	0.01	1.6	20.0	
Chloroform	0.450	0.484	0.01	7.6	20.0	
1,1,1-Trichloroethane	0.257	0.290	0.01	12.8	20.0	
Carbon Tetrachloride	0.242	0.272	0.01	12.4	20.0	
1,2-Dichloroethane	0.278	0.292	0.01	5.0	20.0	
Benzene	1.184	1.268	0.01	7.1	20.0	
Trichloroethene	0.291	0.306	0.01	5.2	20.0	
1,2-Dichloropropane	0.310	0.327	0.01	5.5	20.0	
Bromodichloromethane	0.356	0.376	0.01	5.6	20.0	
cis-1,3-Dichloropropene	0.496	0.516	0.01	4.0	20.0	
4-Methyl-2-pentanone	0.371	0.404	0.01	8.9	20.0	
Toluene	1.164	1.217	0.01	4.6	20.0	
trans-1,3-Dichloropropene	0.418	0.437	0.01	4.5	20.0	
1,1,2-Trichloroethane	0.270	0.268	0.01	0.7	20.0	
Tetrachloroethene	0.311	0.329	0.01	5.8	20.0	
2-Hexanone	0.366	0.391	0.01	6.8	20.0	
Dibromochloromethane	0.422	0.434	0.01	2.8	20.0	
1,2-Dibromoethane	0.397	0.401	0.01	1.0	20.0	
Chlorobenzene	1.053	1.077	0.3	2.3	20.0	
Ethylbenzene	0.531	0.555	0.01	4.5	20.0	
m,p-Xylene	0.676	0.700	0.01	3.6	20.0	
o-Xylene	0.674	0.697	0.01	3.4	20.0	
Xylene (Total)	0.675	0.699	0.01	3.6	20.0	

DB 5/6/03

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	53	0.0	54	102	58-131
Chloromethane	53	0.0	52	98	63-120
Vinyl Chloride	53	0.0	51	96	61-134
Bromomethane	53	0.0	48	90	10-215
Chloroethane	53	0.0	62	117	55-146
Trichlorofluoromethane	53	0.0	54	102	63-126
1,1-Dichloroethene	53	0.0	52	98	67-127
Acetone	53	0.0	48	90	0-154
Carbon Disulfide	53	0.0	53	100	63-126
Methylene Chloride	53	2	53	96	62-128
trans-1,2-Dichloroethen	53	0.0	52	98	76-120
Methyl tert-butyl ether	53	0.0	61	115	52-130
1,1-Dichloroethane	53	0.0	55	104	74-118
2-Butanone	53	0.0	52	98	14-154
cis-1,2-Dichloroethene	53	0.0	52	98	83-115
Chloroform	53	0.0	55	104	77-120
1,1,1-Trichloroethane	53	0.0	56	106	72-126
Carbon Tetrachloride	53	0.0	54	102	69-135
1,2-Dichloroethane	53	0.0	56	106	65-126
Benzene	53	0.0	55	104	78-121
Trichloroethene	53	0.0	52	98	75-125
1,2-Dichloropropane	53	0.0	55	104	78-117
Bromodichloromethane	53	0.0	56	106	75-118
cis-1,3-Dichloropropene	53	0.0	54	102	78-120
4-Methyl-2-pentanone	53	0.0	55	104	45-141
Toluene	53	0.0	52	98	80-126
trans-1,3-Dichloroprope	53	0.0	54	102	73-123
1,1,2-Trichloroethane	53	0.0	53	100	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	53	0.0	47	89	65-134
2-Hexanone	53	0.0	52	98	37-136
Dibromochloromethane	53	0.0	55	104	76-115
1,2-Dibromoethane	53	0.0	54	102	72-117
Chlorobenzene	53	0.0	51	96	78-117
Ethylbenzene	53	0.0	51	96	79-129
Xylene (Total)	160	0.0	150	94	83-125
Styrene	53	0.0	50	94	83-122
Bromoform	53	0.0	54	102	67-126
Isopropylbenzene	53	0.0	51	96	80-135
1,1,2,2-Tetrachloroetha	53	0.0	59	111	70-117
1,3,5-Trimethylbenzene	53	0.0	54	102	72-133
1,2,4-Trimethylbenzene	53	0.0	54	102	73-126
1,3-Dichlorobenzene	53	0.0	51	96	75-115
1,4-Dichlorobenzene	53	0.0	51	96	72-110
1,2-Dichlorobenzene	53	0.0	53	100	78-113
1,2-Dibromo-3-chloropro	53	0.0	58	109	52-128
1,2,4-Trichlorobenzene	53	0.0	43	81	49-126
1,1,2-Trichlo-1,2,2-tri	53	0.0	57	108	70-130
Methyl Acetate	53	0.0	60	113	70-130
Cyclohexane	53	0.0	52	98	70-130
Methylcyclohexane	53	0.0	50	94	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

DS 5/6/03

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	60	65	108	6	40	58-131
Chloromethane	60	62	103	5	40	63-120
Vinyl Chloride	60	61	102	6	40	61-134
Bromomethane	60	49	82	9	40	10-215
Chloroethane	60	95	158*	30	40	55-146
Trichlorofluoromethane	60	63	105	3	40	63-126
1,1-Dichloroethene	60	62	103	5	40	67-127
Acetone	60	57	95	5	40	0-154
Carbon Disulfide	60	66	110	10	40	63-126
Methylene Chloride	60	61	98	2	40	62-128
trans-1,2-Dichloroethen	60	61	102	4	40	76-120
Methyl tert-butyl ether	60	63	105	9	40	52-130
1,1-Dichloroethane	60	65	108	4	40	74-118
2-Butanone	60	62	103	5	40	14-154
cis-1,2-Dichloroethene	60	60	100	2	40	83-115
Chloroform	60	64	107	3	40	77-120
1,1,1-Trichloroethane	60	65	108	2	40	72-126
Carbon Tetrachloride	60	65	108	6	40	69-135
1,2-Dichloroethane	60	67	112	6	40	65-126
Benzene	60	64	107	3	40	78-121
Trichloroethene	60	61	102	4	40	75-125
1,2-Dichloropropane	60	65	108	4	40	78-117
Bromodichloromethane	60	65	108	2	40	75-118
cis-1,3-Dichloropropene	60	62	103	1	40	78-120
4-Methyl-2-pentanone	60	66	110	6	40	45-141
Toluene	60	61	102	4	40	80-126
trans-1,3-Dichloroprope	60	64	107	5	40	73-123
1,1,2-Trichloroethane	60	63	105	5	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	60	57	95	6	40	65-134
2-Hexanone	60	62	103	5	40	37-136
Dibromochloromethane	60	64	107	3	40	76-115
1,2-Dibromoethane	60	63	105	3	40	72-117
Chlorobenzene	60	60	100	4	40	78-117
Ethylbenzene	60	59	98	2	40	79-129
Xylene (Total)	180	180	100	6	40	83-125
Styrene	60	62	103	9	40	83-122
Bromoform	60	63	105	3	40	67-126
Isopropylbenzene	60	59	98	2	40	80-135
1,1,2,2-Tetrachloroetha	60	66	110	1	40	70-117
1,3,5-Trimethylbenzene	60	60	100	2	40	72-133
1,2,4-Trimethylbenzene	60	60	100	2	40	73-126
1,3-Dichlorobenzene	60	58	97	1	40	75-115
1,4-Dichlorobenzene	60	58	97	1	40	72-110
1,2-Dichlorobenzene	60	59	98	2	40	78-113
1,2-Dibromo-3-chloropro	60	65	108	1	40	52-128
1,2,4-Trichlorobenzene	60	47	78	4	40	49-126
1,1,2-Trichlo-1,2,2-tri	60	47	78	32	40	70-130
Methyl Acetate	60	66	110	3	40	70-130
Cyclohexane	60	60	100	2	40	70-130
Methylcyclohexane	60	56	93	1	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 1 out of 100 outside limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: V6ELCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		52	104	48-135
Chloromethane	50		58	116	60-118
Vinyl Chloride	50		57	114*	65-113
Bromomethane	50		67	134*	73-122
Chloroethane	50		64	128*	72-118
Trichlorofluoromethane	50		69	138*	68-129
1,1-Dichloroethene	50		50	100	67-121
Acetone	50		54	108	38-161
Carbon Disulfide	50		46	92	53-137
Methylene Chloride	50		51	102	59-132
trans-1,2-Dichloroethen	50		49	98	71-124
Methyl tert-butyl ether	50		52	104	75-123
1,1-Dichloroethane	50		52	104	83-116
2-Butanone	50		49	98	64-139
cis-1,2-Dichloroethene	50		50	100	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		49	98	81-122
Carbon Tetrachloride	50		47	94	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		49	98	77-121
1,2-Dichloropropane	50		51	102	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		51	102	78-119
4-Methyl-2-pentanone	50		49	98	57-138
Toluene	50		52	104	81-121
trans-1,3-Dichloroprope	50		50	100	85-118
1,1,2-Trichloroethane	50		50	100	44-159

DS 5/6/03

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: V1QLCS Level: (low/med) LOW

5/6/03

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		55	110	58-131
Chloromethane	50		53	106	63-120
Vinyl Chloride	50		51	102	61-134
Bromomethane	50		33	66	10-215
Chloroethane	50		81	162*	55-146
Trichlorofluoromethane	50		59	118	63-126
1,1-Dichloroethene	50		52	104	67-127
Acetone	50		47	94	0-154
Carbon Disulfide	50		58	116	63-126
Methylene Chloride	50		52	104	62-128
trans-1,2-Dichloroethen	50		53	106	76-120
Methyl tert-butyl ether	50		40	80	52-130
1,1-Dichloroethane	50		54	108	74-118
2-Butanone	50		49	98	14-154
cis-1,2-Dichloroethene	50		52	104	83-115
Chloroform	50		54	108	77-120
1,1,1-Trichloroethane	50		55	110	72-126
Carbon Tetrachloride	50		55	110	69-135
1,2-Dichloroethane	50		53	106	65-126
Benzene	50		55	110	78-121
Trichloroethene	50		52	104	75-125
1,2-Dichloropropane	50		54	108	78-117
Bromodichloromethane	50		54	108	75-118
cis-1,3-Dichloropropene	50		54	108	78-120
4-Methyl-2-pentanone	50		51	102	45-141
Toluene	50		53	106	80-126
trans-1,3-Dichloroprope	50		52	104	73-123
1,1,2-Trichloroethane	50		50	100	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: V1RLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		57	114	58-131
Chloromethane	50		54	108	63-120
Vinyl Chloride	50		51	102	61-134
Bromomethane	50		38	76	10-215
Chloroethane	50		74	148*	55-146
Trichlorofluoromethane	50		60	120	63-126
1,1-Dichloroethene	50		49	98	67-127
Acetone	50		46	92	0-154
Carbon Disulfide	50		56	112	63-126
Methylene Chloride	50		46	92	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		40	80	52-130
1,1-Dichloroethane	50		49	98	74-118
2-Butanone	50		45	90	14-154
cis-1,2-Dichloroethene	50		47	94	83-115
Chloroform	50		48	96	77-120
1,1,1-Trichloroethane	50		52	104	72-126
Carbon Tetrachloride	50		51	102	69-135
1,2-Dichloroethane	50		47	94	65-126
Benzene	50		49	98	78-121
Trichloroethene	50		49	98	75-125
1,2-Dichloropropane	50		49	98	78-117
Bromodichloromethane	50		48	96	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		46	92	45-141
Toluene	50		48	96	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		44	88	66-125

DS 5/6/93

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID (Standard): V1F2421 Date Analyzed: 02/10/03

Instrument ID: V1 Time Analyzed: 0954

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1128282	5.94	826469	9.61	448379	12.57
	UPPER LIMIT	2256564	6.44	1652938	10.11	896758	13.07
	LOWER LIMIT	564141	5.44	413235	9.11	224190	12.07
	EPA SAMPLE NO.						
01	VBLK1P	1416251	5.94	998866	9.62	501940	12.57
02	V1PLCS	1193434	5.94	851491	9.62	476183	12.58
03	V1PLCSD	1096376	5.95	809929	9.62	461778	12.58
04	FTASS112	1205863	5.97	750000	9.64	234389	12.60
05	SV1120204	1259469	5.97	921896	9.64	~~449494~~	12.60
06	FTASS113	1219055	5.97	734260	9.64	207594*	12.60
07	SV1130204	1229930	5.97	910262	9.65	~~440446~~	12.60
08	SV1130709	702578	5.97	507772	9.65	~~231479~~	12.61
09	FTASS114	965037	5.97	612916	9.65	193163*	12.61
10	SV1140204	1227517	5.98	870464	9.65	415342	12.61
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22							

DS 5/6/03

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID (Standard): V1F2471 Date Analyzed: 02/11/03

Instrument ID: V1 Time Analyzed: 1003

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1087614	5.94	798339	9.61	450273	12.58
	UPPER LIMIT	2175228	6.44	1596678	10.11	900546	13.08
	LOWER LIMIT	543807	5.44	399170	9.11	225137	12.08
	EPA SAMPLE NO.						
01	VBLK1Q	1336082	5.94	974073	9.61	478166	12.58
02	V1QLCS	1072847	5.94	799703	9.61	442635	12.58
03	SVDUP3	627867	5.95	448704	9.62	195705*	12.58
04	FTASS115	1310998	5.95	902648	9.62	364622	12.58
05	SV1150204	1226374	5.95	887874	9.62	414857	12.58
06	SV1150810	1288602	5.95	935943	9.62	446139	12.58
07	SV1160204MSD	911215	5.95	678638	9.62	373717	12.58
08	SV1160709	1195606	5.95	872413	9.62	423148	12.58
09	SV1170204	718113	5.95	532742	9.62	238790	12.58
10	SV1170709	1067131	5.95	804380	9.62	387674	12.58
11	SV118070	1089401	5.95	803869	9.62	383511	12.58
12	SV1120709	1140790	5.95	836324	9.62	402311	12.58
13	FTASS116	1015193	5.95	632988	9.62	202842*	12.58
14	SV1140709	942898	5.95	688760	9.62	319966	12.58
15							
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21							
22							

DSS 5/6/03

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5703

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2072

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	670	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	670	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	670	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5703

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2072

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	670	U
100-02-7	4-Nitrophenol	670	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	670	U
534-52-1	4,6-Dinitro-2-methylphenol	670	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	670	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5703

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2072

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	670	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	670	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	670	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	670	U
100-02-7	4-Nitrophenol	670	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	670	U
534-52-1	4,6-Dinitro-2-methylphenol	670	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	670	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-6006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2487

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	670	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	670	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	670	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-6006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2487

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	670	U
100-02-7	4-Nitrophenol	670	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	670	U
534-52-1	4,6-Dinitro-2-methylphenol	670	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	670	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-6006

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2487

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2100 DFTPP Injection Date: 02/26/03

Instrument ID: S2 Soil DFTPP Injection Time: 2041

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.3
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	43.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	29.6
365	Greater than 1.0% of mass 198	4.16
441	Present, but less than mass 443	15.6
442	40.0 - 99.9% of mass 198	86.9
443	17.0 - 23.0% of mass 442	16.4 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502H	SS0226B	S2D2101	02/26/03	2058
02	SSTD1602H	SS0226C	S2D2102	02/26/03	2137
03	SSTD0102H	SS0226D	S2D2103	02/26/03	2217
04	SSTD1202H	SS0226E	S2D2104	02/26/03	2256
05	SSTD0202H	SS0226F	S2D2105	02/26/03	2336
06	SSTD0802H	SS0226G	S2D2106	02/27/03	0015
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date(s): 02/26/03 02/27/03

Calibration Time(s): 2058 0015

LAB FILE ID: RRF160=S2D2102

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.581					1.505	5.7*
bis(2-Chloroethyl)Ether	* 1.010					0.993	2.5*
2-Chlorophenol	* 1.297					1.269	3.7*
1,3-Dichlorobenzene	* 1.479					1.429	4.0*
1,4-Dichlorobenzene	* 1.629					1.537	5.0*
1,2-Dichlorobenzene	* 1.582					1.434	7.6*
2-Methylphenol	* 1.000					0.983	6.0*
2,2'-oxybis(1-Chloropropane)	* 1.219					1.232	1.7*
4-Methylphenol	* 1.100					1.061	6.3*
N-Nitroso-di-n-propylamine	* 0.729					0.756	4.5*
Hexachloroethane	* 0.548					0.554	1.7*
Nitrobenzene	* 0.451					0.425	5.3*
Isophorone	* 0.621					0.636	2.6*
2-Nitrophenol	* 0.240					0.228	6.4*
2,4-Dimethylphenol	* 0.393					0.365	11.8*
2,4-Dichlorophenol	* 0.388					0.343	11.3*
1,2,4-Trichlorobenzene	* 0.427					0.387	9.1*
Naphthalene	* 1.254					1.130	9.5*
4-Chloroaniline	* 0.365					0.363	6.7*
bis(2-Chloroethoxy)methane	* 0.388					0.364	5.9*
Hexachlorobutadiene	* 0.304					0.276	8.2*
4-Chloro-3-Methylphenol	* 0.367					0.342	8.6*
2-Methylnaphthalene	* 0.894					0.799	10.9*
Hexachlorocyclopentadiene	* 0.384					0.303	30.7*
2,4,6-Trichlorophenol	* 0.483					0.438	10.5*
2,4,5-Trichlorophenol	* 0.526					0.478	10.6*
2-Chloronaphthalene	* 1.339					1.230	8.5*
2-Nitroaniline	* 0.402					0.402	2.2*
Dimethylphthalate	* 1.537					1.506	4.9*
Acenaphthylene	* 2.039					1.930	6.4*
2,6-Dinitrotoluene	* 0.365					0.350	5.8*
3-Nitroaniline	* 0.314					0.294	5.7*
Acenaphthene	* 1.349					1.244	9.2*
2,4-Dinitrophenol	* 0.184					0.150	30.4*
4-Nitrophenol	* 0.221					0.198	15.9*
Dibenzofuran	* 1.977					1.811	10.0*
2,4-Dinitrotoluene	* 0.471					0.460	6.8*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date(s): 02/26/03 02/27/03

Calibration Time(s): 2058 0015

LAB FILE ID: RRF160=S2D2102

COMPOUND	RRF160						$\overline{RRF}$	% RSD
Diethylphthalate *	1.603						1.567	4.9*
4-Chlorophenyl-phenylether *	0.918						0.824	11.1*
Fluorene *	1.657						1.481	12.1*
4-Nitroaniline *	0.224						0.222	6.7*
4,6-Dinitro-2-methylphenol *	0.188						0.167	15.2*
N-Nitrosodiphenylamine (1) *	0.558						0.520	5.6*
4-Bromophenyl-phenylether *	0.356						0.319	9.5*
Hexachlorobenzene *	0.382						0.351	7.5*
Pentachlorophenol *	0.168						0.129	28.2*
Phenanthrene *	1.274						1.129	10.2*
Anthracene *	1.228						1.095	9.1*
Carbazole *	0.707						0.603	12.9*
Di-n-butylphthalate *	1.526						1.425	5.7*
Fluoranthene *	1.358						1.243	7.8*
Pyrene *	1.228						1.169	3.6*
Butylbenzylphthalate *	0.533						0.521	2.9*
3,3'-Dichlorobenzidine *	0.466						0.408	11.8*
Benzo(a)anthracene *	1.216						1.152	4.5*
Chrysene *	1.019						0.976	3.9*
bis(2-Ethylhexyl)phthalate *	0.799						0.732	6.5*
Di-n-octylphthalate *	2.427						2.243	9.7*
Benzo(b)fluoranthene *	1.953						1.833	8.5*
Benzo(k)fluoranthene *	1.806						1.640	9.6*
Benzo(a)pyrene *	1.598						1.493	7.8*
Indeno(1,2,3-cd)pyrene *	1.371						1.352	7.9*
Dibenzo(a,h)anthracene *	1.436						1.288	11.7*
Benzo(g,h,i)perylene *	1.184						1.136	8.0*
Nitrobenzene-d5	0.444						0.433	3.7*
2-Fluorobiphenyl *	1.712						1.558	10.1*
Terphenyl-d14 *	0.968						0.934	3.3*
Phenol-d5 *	1.294						1.260	3.9*
2-Fluorophenol *	0.998						0.974	4.6*
2,4,6-Tribromophenol *	0.177						0.158	10.5*
2-Chlorophenol-d4 *	1.287						1.255	3.0*
1,2-Dichlorobenzene-d4 *	1.017						0.955	6.3*

Value used for Sample calc.

5/6/03

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2156 DFTPP Injection Date: 02/28/03

Instrument ID: S2 DFTPP Injection Time: 1606

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	54.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	66.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	48.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	25.5
365	Greater than 1.0% of mass 198	2.75
441	Present, but less than mass 443	9.4
442	40.0 - 99.9% of mass 198	51.5
443	17.0 - 23.0% of mass 442	10.1 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502K	SS0228B	S2D2157	02/28/03	1629
02	SBLK2F	MB-5702	S2D2158	02/28/03	1714
03	S2FLCS	LCS-5702	S2D2159	02/28/03	1754
04	SV1120204	B0215-04A	S2D2164	02/28/03	2112
05	SV1120709	B0215-05A	S2D2165	02/28/03	2151
06	SV1130204	B0215-07A	S2D2166	02/28/03	2230
07	SV1130709	B0215-08A	S2D2167	02/28/03	2309
08	FTASS114	B0215-09A	S2D2168	02/28/03	2348
09	SV1140709	B0215-11A	S2D2170	03/01/03	0107
10	FTASS115	B0215-13A	S2D2172	03/01/03	0226
11	SV1150204	B0215-14A	S2D2173	03/01/03	0306
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 02/28/03 Time: 1629

Lab File ID: S2D2157 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.558	0.050	3.5	20.0
bis(2-Chloroethyl)Ether	0.993	1.004	0.050	1.1	100
2-Chlorophenol	1.269	1.277	0.050	0.6	100
1,3-Dichlorobenzene	1.429	1.421	0.050	-0.6	100
1,4-Dichlorobenzene	1.537	1.491	0.050	-3.0	20.0
1,2-Dichlorobenzene	1.434	1.371	0.050	-4.4	100
2-Methylphenol	0.983	1.073	0.050	9.2	100
2,2'-oxybis(1-Chloropropane)	1.232	1.259	0.050	2.2	100
4-Methylphenol	1.061	1.126	0.050	6.1	100
N-Nitroso-di-n-propylamine	0.695	0.731	0.050	5.2	100
Hexachloroethane	0.554	0.565	0.050	2.0	100
Nitrobenzene	0.425	0.429	0.050	0.9	100
Isophorone	0.636	0.685	0.050	7.7	100
2-Nitrophenol	0.228	0.233	0.050	2.2	20.0
2,4-Dimethylphenol	0.365	0.388	0.050	6.3	100
2,4-Dichlorophenol	0.343	0.351	0.050	2.3	20.0
1,2,4-Trichlorobenzene	0.387	0.374	0.050	-3.4	100
Naphthalene	1.130	1.099	0.050	-2.7	100
4-Chloroaniline	0.363	0.416	0.050	14.6	100
bis(2-Chloroethoxy)methane	0.364	0.366	0.050	0.5	100
Hexachlorobutadiene	0.276	0.270	0.050	-2.2	20.0
4-Chloro-3-Methylphenol	0.342	0.370	0.050	8.2	20.0
2-Methylnaphthalene	0.799	0.803	0.050	0.5	100
Hexachlorocyclopentadiene	0.303	0.164	0.050	-45.9	100
2,4,6-Trichlorophenol	0.438	0.440	0.050	0.4	100
2,4,5-Trichlorophenol	0.478	0.489	0.050	2.3	100
2-Chloronaphthalene	1.230	1.174	0.050	-4.6	100
2-Nitroaniline	0.402	0.434	0.050	8.0	100
Dimethylphthalate	1.506	1.556	0.050	3.3	100
Acenaphthylene	1.930	1.921	0.050	-0.5	100
2,6-Dinitrotoluene	0.350	0.376	0.050	7.4	100
3-Nitroaniline	0.294	0.356	0.050	21.1	100
Acenaphthene	1.244	1.222	0.050	-1.8	20.0
2,4-Dinitrophenol	0.150	0.198	0.050	32.0	100
4-Nitrophenol	0.198	0.275	0.050	38.9	100
Dibenzofuran	1.811	1.848	0.050	2.0	100
2,4-Dinitrotoluene	0.460	0.531	0.050	15.4	100

All other compounds must meet a minimum RRF of 0.010.

5/6/03

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 02/28/03 Time: 1629

Lab File ID: S2D2157 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.683	0.050	7.4	100
4-Chlorophenyl-phenylether	0.824	0.818	0.050	-0.7	100
Fluorene	1.481	1.470	0.050	-0.7	100
4-Nitroaniline	0.222	0.341	0.050	53.6	100
4,6-Dinitro-2-methylphenol	0.167	0.179	0.050	7.2	100
N-Nitrosodiphenylamine(1)	0.520	0.508	0.050	-2.3	20.0
4-Bromophenyl-phenylether	0.319	0.303	0.050	-5.0	100
Hexachlorobenzene	0.351	0.343	0.050	-2.3	100
Pentachlorophenol	0.129	0.143	0.050	10.8	20.0
Phenanthrene	1.129	1.075	0.050	-4.8	100
Anthracene	1.095	1.072	0.050	-2.1	100
Carbazole	0.603	0.852	0.050	41.3	100
Di-n-butylphthalate	1.425	1.434	0.050	0.6	100
Fluoranthene	1.243	1.354	0.050	8.9	20.0
Pyrene	1.169	1.049	0.050	-10.3	100
Butylbenzylphthalate	0.521	0.470	0.050	-9.8	100
3,3'-Dichlorobenzidine	0.408	0.474	0.050	16.2	100
Benzo(a)anthracene	1.152	1.130	0.050	-1.9	100
Chrysene	0.976	0.992	0.050	1.6	100
bis(2-Ethylhexyl)phthalate	0.732	0.668	0.050	-8.7	100
Di-n-octylphthalate	2.243	1.906	0.050	-15.0	20.0
Benzo(b)fluoranthene	1.833	1.817	0.050	-0.9	100
Benzo(k)fluoranthene	1.640	1.625	0.050	-0.9	100
Benzo(a)pyrene	1.493	1.579	0.050	5.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.066	0.050	36.3	100
Dibenzo(a,h)anthracene	1.288	1.794	0.050	39.3	100
Benzo(g,h,i)perylene	1.136	1.640	0.050	44.4	100
Nitrobenzene-d5	0.433	0.448	0.050	3.5	100
2-Fluorobiphenyl	1.558	1.467	0.050	-5.8	100
Terphenyl-d14	0.934	0.856	0.050	-8.4	100
Phenol-d5	1.260	1.300	0.050	3.2	100
2-Fluorophenol	0.974	0.994	0.050	2.0	100
2,4,6-Tribromophenol	0.158	0.163	0.050	3.2	100
2-Chlorophenol-d4	1.255	1.273	0.050	1.4	100
1,2-Dichlorobenzene-d4	0.955	0.911	0.050	-4.6	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

5/6/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2222 DFTPP Injection Date: 03/02/03

Instrument ID: S2 DFTPP Injection Time: 1305

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.1 (0.3)1
127	40.0 - 60.0% of mass 198	43.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	29.0
365	Greater than 1.0% of mass 198	3.73
441	Present, but less than mass 443	14.6
442	40.0 - 99.9% of mass 198	79.8
443	17.0 - 23.0% of mass 442	15.2 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502P	SS0302A	S2D2223	03/02/03	1323
02	SV1170709	B0215-21A	S2D2226	03/02/03	1524
03	SV1180204	B0215-23A	S2D2227	03/02/03	1604
04	SV118070	B0215-24A	S2D2228	03/02/03	1644
05	FTASS118	B0215-22A	S2D2229	03/02/03	1725
06	SVDUP3	B0215-12A	S2D2232	03/02/03	1926
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/02/03 Time: 1323

Lab File ID: S2D2223 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.404	0.050	-6.7	20.0
bis(2-Chloroethyl)Ether	0.993	0.915	0.050	-7.8	100
2-Chlorophenol	1.269	1.224	0.050	-3.5	100
1,3-Dichlorobenzene	1.429	1.401	0.050	-2.0	100
1,4-Dichlorobenzene	1.537	1.512	0.050	-1.6	20.0
1,2-Dichlorobenzene	1.434	1.398	0.050	-2.5	100
2-Methylphenol	0.983	0.980	0.050	-0.3	100
2,2'-oxybis(1-Chloropropane)	1.232	1.150	0.050	-6.6	100
4-Methylphenol	1.061	1.022	0.050	-3.7	100
N-Nitroso-di-n-propylamine	0.695	0.736	0.050	5.9	100
Hexachloroethane	0.554	0.574	0.050	3.6	100
Nitrobenzene	0.425	0.410	0.050	-3.5	100
Isophorone	0.636	0.650	0.050	2.2	100
2-Nitrophenol	0.228	0.224	0.050	-1.8	20.0
2,4-Dimethylphenol	0.365	0.374	0.050	2.5	100
2,4-Dichlorophenol	0.343	0.342	0.050	-0.3	20.0
1,2,4-Trichlorobenzene	0.387	0.391	0.050	1.0	100
Naphthalene	1.130	1.101	0.050	-2.6	100
4-Chloroaniline	0.363	0.412	0.050	13.5	100
bis(2-Chloroethoxy)methane	0.364	0.334	0.050	-8.2	100
Hexachlorobutadiene	0.276	0.293	0.050	6.2	20.0
4-Chloro-3-Methylphenol	0.342	0.356	0.050	4.1	20.0
2-Methylnaphthalene	0.799	0.809	0.050	1.2	100
Hexachlorocyclopentadiene	0.303	0.166	0.050	-45.2	100
2,4,6-Trichlorophenol	0.438	0.412	0.050	-5.9	100
2,4,5-Trichlorophenol	0.478	0.478	0.050	0.0	100
2-Chloronaphthalene	1.230	1.165	0.050	-5.3	100
2-Nitroaniline	0.402	0.414	0.050	3.0	100
Dimethylphthalate	1.506	1.549	0.050	2.8	100
Acenaphthylene	1.930	1.923	0.050	-0.4	100
2,6-Dinitrotoluene	0.350	0.366	0.050	4.6	100
3-Nitroaniline	0.294	0.333	0.050	13.3	100
Acenaphthene	1.244	1.226	0.050	-1.4	20.0
2,4-Dinitrophenol	0.150	0.136	0.050	-9.3	100
4-Nitrophenol	0.198	0.226	0.050	14.1	100
Dibenzofuran	1.811	1.851	0.050	2.2	100
2,4-Dinitrotoluene	0.460	0.492	0.050	7.0	100

All other compounds must meet a minimum RRF of 0.010.

DSS 5/6/03

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/02/03 Time: 1323

Lab File ID: S2D2223 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.663	0.050	6.1	100
4-Chlorophenyl-phenylether	0.824	0.858	0.050	4.1	100
Fluorene	1.481	1.514	0.050	2.2	100
4-Nitroaniline	0.222	0.306	0.050	37.8	100
4,6-Dinitro-2-methylphenol	0.167	0.144	0.050	-13.8	100
N-Nitrosodiphenylamine(1)	0.520	0.520	0.050	0.0	20.0
4-Bromophenyl-phenylether	0.319	0.307	0.050	-3.8	100
Hexachlorobenzene	0.351	0.345	0.050	-1.7	100
Pentachlorophenol	0.129	0.126	0.050	-2.3	20.0
Phenanthrene	1.129	1.088	0.050	-3.6	100
Anthracene	1.095	1.058	0.050	-3.4	100
Carbazole	0.603	0.902	0.050	49.6	100
Di-n-butylphthalate	1.425	1.415	0.050	-0.7	100
Fluoranthene	1.243	1.309	0.050	5.3	20.0
Pyrene	1.169	1.040	0.050	-11.0	100
Butylbenzylphthalate	0.521	0.474	0.050	-9.0	100
3,3'-Dichlorobenzidine	0.408	0.464	0.050	13.7	100
Benzo(a)anthracene	1.152	1.133	0.050	-1.6	100
Chrysene	0.976	0.970	0.050	-0.6	100
bis(2-Ethylhexyl)phthalate	0.732	0.659	0.050	-10.0	100
Di-n-octylphthalate	2.243	2.141	0.050	-4.5	20.0
Benzo(b)fluoranthene	1.833	1.902	0.050	3.8	100
Benzo(k)fluoranthene	1.640	1.682	0.050	2.6	100
Benzo(a)pyrene	1.493	1.597	0.050	7.0	20.0
Indeno(1,2,3-cd)pyrene	1.516	1.383	0.050	-8.8	100
Dibenzo(a,h)anthracene	1.288	1.463	0.050	13.6	100
Benzo(g,h,i)perylene	1.136	1.065	0.050	-6.2	100
Nitrobenzene-d5	0.433	0.436	0.050	0.7	100
2-Fluorobiphenyl	1.558	1.517	0.050	-2.6	100
Terphenyl-d14	0.934	0.866	0.050	-7.3	100
Phenol-d5	1.260	1.177	0.050	-6.6	100
2-Fluorophenol	0.974	0.888	0.050	-8.8	100
2,4,6-Tribromophenol	0.158	0.152	0.050	-3.8	100
2-Chlorophenol-d4	1.255	1.214	0.050	-3.3	100
1,2-Dichlorobenzene-d4	0.955	0.922	0.050	-3.4	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

5/6/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2256 DFTPP Injection Date: 03/03/03

Instrument ID: S2 DFTPP Injection Time: 1451

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.4
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	29.3
365	Greater than 1.0% of mass 198	4.03
441	Present, but less than mass 443	15.0
442	40.0 - 99.9% of mass 198	80.6
443	17.0 - 23.0% of mass 442	15.6 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502R	SS0303A	S2D2257	03/03/03	1509
02	SV1160204	B0215-17A	S2D2265	03/03/03	2029
03	SV1160204MS	B0215-17AMS	S2D2266	03/03/03	2108
04	SV1160204MSD	B0215-17AMSD	S2D2267	03/03/03	2147
05	SV1160709	B0215-18A	S2D2268	03/03/03	2227
06	FTASS112	B0215-03A	S2D2270	03/03/03	2346
07	FTASS113	B0215-06A	S2D2271	03/04/03	0025
08	FTASS116	B0215-16A	S2D2272	03/04/03	0104
09	FTASS117	B0215-19A	S2D2273	03/04/03	0143
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/03/03 Time: 1509

Lab File ID: S2D2257 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.501	0.050	-0.3	20.0
bis(2-Chloroethyl)Ether	0.993	0.959	0.050	-3.4	100
2-Chlorophenol	1.269	1.256	0.050	-1.0	100
1,3-Dichlorobenzene	1.429	1.377	0.050	-3.6	100
1,4-Dichlorobenzene	1.537	1.544	0.050	0.4	20.0
1,2-Dichlorobenzene	1.434	1.412	0.050	-1.5	100
2-Methylphenol	0.983	1.014	0.050	3.2	100
2,2'-oxybis(1-Chloropropane)	1.232	1.214	0.050	-1.5	100
4-Methylphenol	1.061	1.068	0.050	0.6	100
N-Nitroso-di-n-propylamine	0.695	0.771	0.050	10.9	100
Hexachloroethane	0.554	0.574	0.050	3.6	100
Nitrobenzene	0.425	0.422	0.050	-0.7	100
Isophorone	0.636	0.648	0.050	1.9	100
2-Nitrophenol	0.228	0.224	0.050	-1.8	20.0
2,4-Dimethylphenol	0.365	0.370	0.050	1.4	100
2,4-Dichlorophenol	0.343	0.343	0.050	0.0	20.0
1,2,4-Trichlorobenzene	0.387	0.380	0.050	-1.8	100
Naphthalene	1.130	1.095	0.050	-3.1	100
4-Chloroaniline	0.363	0.354	0.050	-2.5	100
bis(2-Chloroethoxy)methane	0.364	0.344	0.050	-5.5	100
Hexachlorobutadiene	0.276	0.280	0.050	1.4	20.0
4-Chloro-3-Methylphenol	0.342	0.364	0.050	6.4	20.0
2-Methylnaphthalene	0.799	0.797	0.050	-0.2	100
Hexachlorocyclopentadiene	0.303	0.152	0.050	-49.8	100
2,4,6-Trichlorophenol	0.438	0.437	0.050	-0.2	100
2,4,5-Trichlorophenol	0.478	0.443	0.050	-7.3	100
2-Chloronaphthalene	1.230	1.158	0.050	-5.8	100
2-Nitroaniline	0.402	0.396	0.050	-1.5	100
Dimethylphthalate	1.506	1.531	0.050	1.7	100
Acenaphthylene	1.930	1.869	0.050	-3.2	100
2,6-Dinitrotoluene	0.350	0.354	0.050	1.1	100
3-Nitroaniline	0.294	0.277	0.050	-5.8	100
Acenaphthene	1.244	1.210	0.050	-2.7	20.0
2,4-Dinitrophenol	0.150	0.159	0.050	6.0	100
4-Nitrophenol	0.198	0.225	0.050	13.6	100
Dibenzofuran	1.811	1.786	0.050	-1.4	100
2,4-Dinitrotoluene	0.460	0.466	0.050	1.3	100

All other compounds must meet a minimum RRF of 0.010.

DG 5/6/03

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/03/03 Time: 1509

Lab File ID: S2D2257 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.623	0.050	3.6	100
4-Chlorophenyl-phenylether	0.824	0.818	0.050	-0.7	100
Fluorene	1.481	1.456	0.050	-1.7	100
4-Nitroaniline	0.222	0.218	0.050	-1.8	100
4,6-Dinitro-2-methylphenol	0.167	0.167	0.050	0.0	100
N-Nitrosodiphenylamine(1)	0.520	0.505	0.050	-2.9	20.0
4-Bromophenyl-phenylether	0.319	0.318	0.050	-0.3	100
Hexachlorobenzene	0.351	0.356	0.050	1.4	100
Pentachlorophenol	0.129	0.136	0.050	5.4	20.0
Phenanthrene	1.129	1.092	0.050	-3.3	100
Anthracene	1.095	1.050	0.050	-4.1	100
Carbazole	0.603	0.564	0.050	-6.5	100
Di-n-butylphthalate	1.425	1.448	0.050	1.6	100
Fluoranthene	1.243	1.229	0.050	-1.1	20.0
Pyrene	1.169	1.083	0.050	-7.4	100
Butylbenzylphthalate	0.521	0.496	0.050	-4.8	100
3,3'-Dichlorobenzidine	0.408	0.391	0.050	-4.2	100
Benzo(a)anthracene	1.152	1.123	0.050	-2.5	100
Chrysene	0.976	0.944	0.050	-3.3	100
bis(2-Ethylhexyl)phthalate	0.732	0.690	0.050	-5.7	100
Di-n-octylphthalate	2.243	2.203	0.050	-1.8	20.0
Benzo(b)fluoranthene	1.833	2.024	0.050	10.4	100
Benzo(k)fluoranthene	1.640	1.645	0.050	0.3	100
Benzo(a)pyrene	1.493	1.637	0.050	9.6	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.050	0.050	35.2	100
Dibenzo(a,h)anthracene	1.288	1.780	0.050	38.2	100
Benzo(g,h,i)perylene	1.136	1.563	0.050	37.6	100
Nitrobenzene-d5	0.433	0.448	0.050	3.5	100
2-Fluorobiphenyl	1.558	1.495	0.050	-4.0	100
Terphenyl-d14	0.934	0.899	0.050	-3.7	100
Phenol-d5	1.260	1.226	0.050	-2.7	100
2-Fluorophenol	0.974	0.939	0.050	-3.6	100
2,4,6-Tribromophenol	0.158	0.163	0.050	3.2	100
2-Chlorophenol-d4	1.255	1.250	0.050	-0.4	100
1,2-Dichlorobenzene-d4	0.955	0.976	0.050	2.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

DSS 5/6/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S1D3539 DFTPP Injection Date: 02/11/03

Instrument ID: S1 Aqueous. DFTPP Injection Time: 1433

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	44.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.9
365	Greater than 1.0% of mass 198	3.23
441	Present, but less than mass 443	13.2
442	40.0 - 99.9% of mass 198	87.2
443	17.0 - 23.0% of mass 442	17.1 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0501P	SS0211A	S1D3540	02/11/03	1454
02	SSTD1601P	SS0211B	S1D3541	02/11/03	1535
03	SSTD0101P	SS0211C	S1D3542	02/11/03	1616
04	SSTD0201P	SS0211D	S1D3543	02/11/03	1658
05	SSTD0801P	SS0211E	S1D3544	02/11/03	1739
06	SSTD1201P	SS0211F	S1D3545	02/11/03	1822
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S1D3547 DFTPP Injection Date: 02/11/03

Instrument ID: S1 DFTPP Injection Time: 1940

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	52.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.8
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	45.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	23.9
365	Greater than 1.0% of mass 198	3.40
441	Present, but less than mass 443	12.8
442	40.0 - 99.9% of mass 198	85.5
443	17.0 - 23.0% of mass 442	16.4 (19.1)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0501Q	SS0211B	S1D3548	02/11/03	2003
02	SBLK1C	MB-5501 ★	S1D3549	02/11/03	2045
03	S1CLCS	LCS-5501	S1D3550	02/11/03	2126
04	RB-020403	B0215-02C	S1D3561	02/12/03	0515
05	RB-020503	B0215-25C	S1D3562	02/12/03	0559
06	FB-020503	B0215-26C	S1D3563	02/12/03	0644
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2070 DFTPP Injection Date: 02/25/03

Instrument ID: S2 DFTPP Injection Time: 1651

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	45.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	22.3
365	Greater than 1.0% of mass 198	2.43
441	Present, but less than mass 443	10.8
442	40.0 - 99.9% of mass 198	59.6
443	17.0 - 23.0% of mass 442	11.3 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502F	SS0225B	S2D2071	02/25/03	1712
02	SBLK2B	MB-5703	S2D2072	02/25/03	1753
03	S2BLCS	LCS-5703	S2D2073	02/25/03	1833
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab File ID: S2D2291 DFTPP Injection Date: 03/04/03

Instrument ID: S2 DFTPP Injection Time: 1333

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	53.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	61.3
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	40.0 - 60.0% of mass 198	49.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	27.1
365	Greater than 1.0% of mass 198	2.96
441	Present, but less than mass 443	9.5
442	40.0 - 99.9% of mass 198	52.6
443	17.0 - 23.0% of mass 442	10.3 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502T	SS0304B	S2D2292	03/04/03	1410
02	SV1140204	B0215-10A	S2D2302	03/04/03	2055
03	SV1150810	B0215-15A	S2D2303	03/04/03	2134
04	SV1170204	B0215-20A	S2D2304	03/04/03	2213
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/04/03 Time: 1410

Lab File ID: S2D2292 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.446	0.050	-3.9	20.0
bis(2-Chloroethyl)Ether	0.993	0.920	0.050	-7.4	100
2-Chlorophenol	1.269	1.278	0.050	0.7	100
1,3-Dichlorobenzene	1.429	1.439	0.050	0.7	100
1,4-Dichlorobenzene	1.537	1.548	0.050	0.7	20.0
1,2-Dichlorobenzene	1.434	1.421	0.050	-0.9	100
2-Methylphenol	0.983	0.994	0.050	1.1	100
2,2'-oxybis(1-Chloropropane)	1.232	1.140	0.050	-7.5	100
4-Methylphenol	1.061	1.087	0.050	2.4	100
N-Nitroso-di-n-propylamine	0.695	0.777	0.050	11.8	100
Hexachloroethane	0.554	0.580	0.050	4.7	100
Nitrobenzene	0.425	0.431	0.050	1.4	100
Isophorone	0.636	0.640	0.050	0.6	100
2-Nitrophenol	0.228	0.233	0.050	2.2	20.0
2,4-Dimethylphenol	0.365	0.379	0.050	3.8	100
2,4-Dichlorophenol	0.343	0.348	0.050	1.4	20.0
1,2,4-Trichlorobenzene	0.387	0.400	0.050	3.4	100
Naphthalene	1.130	1.093	0.050	-3.3	100
4-Chloroaniline	0.363	0.326	0.050	-10.2	100
bis(2-Chloroethoxy)methane	0.364	0.341	0.050	-6.3	100
Hexachlorobutadiene	0.276	0.302	0.050	9.4	20.0
4-Chloro-3-Methylphenol	0.342	0.347	0.050	1.5	20.0
2-Methylnaphthalene	0.799	0.782	0.050	-2.1	100
Hexachlorocyclopentadiene	0.303	0.141	0.050	-53.5	100
2,4,6-Trichlorophenol	0.438	0.462	0.050	5.5	100
2,4,5-Trichlorophenol	0.478	0.475	0.050	-0.6	100
2-Chloronaphthalene	1.230	1.187	0.050	-3.5	100
2-Nitroaniline	0.402	0.389	0.050	-3.2	100
Dimethylphthalate	1.506	1.497	0.050	-0.6	100
Acenaphthylene	1.930	1.835	0.050	-4.9	100
2,6-Dinitrotoluene	0.350	0.348	0.050	-0.6	100
3-Nitroaniline	0.294	0.249	0.050	-15.3	100
Acenaphthene	1.244	1.216	0.050	-2.2	20.0
2,4-Dinitrophenol	0.150	0.167	0.050	11.3	100
4-Nitrophenol	0.198	0.230	0.050	16.2	100
Dibenzofuran	1.811	1.782	0.050	-1.6	100
2,4-Dinitrotoluene	0.460	0.460	0.050	0.0	100

All other compounds must meet a minimum RRF of 0.010.

DSG 5/6/03

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: S2 Calibration Date: 03/04/03 Time: 1410

Lab File ID: S2D2292 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.583	0.050	1.0	100
4-Chlorophenyl-phenylether	0.824	0.815	0.050	-1.1	100
Fluorene	1.481	1.415	0.050	-4.4	100
4-Nitroaniline	0.222	0.195	0.050	-12.2	100
4,6-Dinitro-2-methylphenol	0.167	0.168	0.050	0.6	100
N-Nitrosodiphenylamine(1)	0.520	0.464	0.050	-10.8	20.0
4-Bromophenyl-phenylether	0.319	0.320	0.050	0.3	100
Hexachlorobenzene	0.351	0.358	0.050	2.0	100
Pentachlorophenol	0.129	0.143	0.050	10.8	20.0
Phenanthrene	1.129	1.061	0.050	-6.0	100
Anthracene	1.095	1.023	0.050	-6.6	100
Carbazole	0.603	0.500	0.050	-17.1	100
Di-n-butylphthalate	1.425	1.339	0.050	-6.0	100
Fluoranthene	1.243	1.171	0.050	-5.8	20.0
Pyrene	1.169	1.167	0.050	-0.2	100
Butylbenzylphthalate	0.521	0.507	0.050	-2.7	100
3,3'-Dichlorobenzidine	0.408	0.381	0.050	-6.6	100
Benzo(a)anthracene	1.152	1.115	0.050	-3.2	100
Chrysene	0.976	0.968	0.050	-0.8	100
bis(2-Ethylhexyl)phthalate	0.732	0.707	0.050	-3.4	100
Di-n-octylphthalate	2.243	2.147	0.050	-4.3	20.0
Benzo(b)fluoranthene	1.833	1.888	0.050	3.0	100
Benzo(k)fluoranthene	1.640	1.786	0.050	8.9	100
Benzo(a)pyrene	1.493	1.625	0.050	8.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.062	0.050	36.0	100
Dibenzo(a,h)anthracene	1.288	1.756	0.050	36.3	100
Benzo(g,h,i)perylene	1.136	1.628	0.050	43.3	100
Nitrobenzene-d5	0.433	0.444	0.050	2.5	100
2-Fluorobiphenyl	1.558	1.547	0.050	-0.7	100
Terphenyl-d14	0.934	0.956	0.050	2.4	100
Phenol-d5	1.260	1.198	0.050	-4.9	100
2-Fluorophenol	0.974	0.920	0.050	-5.5	100
2,4,6-Tribromophenol	0.158	0.167	0.050	5.7	100
2-Chlorophenol-d4	1.255	1.257	0.050	0.2	100
1,2-Dichlorobenzene-d4	0.955	0.963	0.050	0.8	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

5/6/03

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK2B	86	94	104	82	77	91	91	88	0
02	S2BLCS	77	86	96	73	71	97	81	81	0
03	SBLK2F	84	73	85	88	88	90	89	72	0
04	S2FLCS	82	76	81	85	85	97	85	73	0
05	SV1120204	66	64	79	67	66	79	68	56	0
06	SV1120709	65	62	76	66	64	79	66	54	0
07	SV1130204	67	61	68	66	66	72	68	57	0
08	SV1130709	50	46*	49*	48	49	50	50	41*	3
09	FTASS114	75	67	83	75	74	96	74	61	0
10	SV1140709	59	55	65	60	60	71	62	50	0
11	FTASS115	68	61	72	66	67	81	68	58	0
12	SV1150204	64	61	75	64	64	72	67	53	0
13	SV1170709	59	59	79	54	56	66	60	52	0
14	SV1180204	47	44*	58*	41*	44	47*	46	41*	5
15	SV118070	41*	42*	57*	38*	44*	48*	45*	38*	8
16	FTASS118	79	68	81	65	73	91	74	64	0
17	SVDUP3	54	53	65	48	53	50	55	50	0
18	SV1160204	61	62	77	56	60	69	62	52	0
19	SV1160204MS	58	60	78	55	53	79	56	51	0
20	SV1160204MSD	53	54	66	51	51	68	53	49	0
21	SV1160709	68	67	84	62	67	70	69	57	0
22	FTASS112	66	63	77	56	62	88	63	54	0
23	FTASS113	62	60	73	52	57	86	57	48	0
24	FTASS116	71	70	92	64	67	96	72	60	0
25	FTASS117	58	57	72	50	54	82	56	47	0
26	SV1140204	60	56	78	58	61	72	62	54	0
27	SV1150810	53	54	67	49	51	50	53	46	0
28	SV1170204	63	65	87	59	62	68	62	55	0
29	SBLK2P	67	69	97	73	77	97	75	62	0
30	S2PLCS	68	70	90	70	76	100	72	62	0

			QC LIMITS	
BN	S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
BN	S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
BN	S3 (TPH)	= Terphenyl-d14	(61-113)	
A	S4 (PHL)	= Phenol-d5	(45- 99)	
A	S5 (2FP)	= 2-Fluorophenol	(44- 95)	
A	S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
A	S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
BN	S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

0277

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SV118070RE	50	56	74	55	58	73	58	51	0
02	SV1180204RE	51	59	76	53	58	70	60	51	0
03	SV1130709RE	56	65	81	62	64	74	63	55	0
04										
05										
06										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(61-113)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	1800	0.0	940	52	45-109
bis(2-Chloroethyl)Ether	1800	0.0	890	49	43-104
2-Chlorophenol	1800	0.0	990	55	43-107
1,3-Dichlorobenzene	1800	0.0	960	53	40-101
1,4-Dichlorobenzene	1800	0.0	960	53	41-102
1,2-Dichlorobenzene	1800	0.0	950	53	41-105
2-Methylphenol	1800	0.0	1000	56	45-108
2,2'-oxybis(1-Chloropro	1800	0.0	950	53	41-105
4-Methylphenol	1800	0.0	1000	56	48-109
N-Nitroso-di-n-prop.(1)	1800	0.0	1400	78	44-111
Hexachloroethane	1800	0.0	1000	56	40-102
Nitrobenzene	1800	0.0	1000	56	44-108
Isophorone	1800	0.0	1200	67	42-113
2-Nitrophenol	1800	0.0	900	50	42-111
2,4-Dimethylphenol	1800	0.0	1100	61	37-107
2,4-Dichlorophenol	1800	0.0	1000	56	49-110
1,2,4-Trichlorobenzene	1800	0.0	1000	56	42-107
Naphthalene	1800	0.0	990	55	44-112
4-Chloroaniline	1800	0.0	570	32	4-102
bis(2-Chloroethoxy)meth	1800	0.0	1000	56	46-108
Hexachlorobutadiene	1800	0.0	1100	61	41-108
4-Chloro-3-Methylphenol	1800	0.0	1400	78	56-117
2-Methylnaphthalene	1800	0.0	1000	56	46-110
Hexachlorocyclopentadie	1800	0.0	800	44	10-118
2,4,6-Trichlorophenol	1800	0.0	1200	67	53-115
2,4,5-Trichlorophenol	1800	0.0	1100	61	59-113
2-Chloronaphthalene	1800	0.0	1200	67	52-112
2-Nitroaniline	1800	0.0	1500	83	63-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dimethylphthalate	1800	0.0	1400	78	62-117
Acenaphthylene	1800	0.0	1300	72	58-112
2,6-Dinitrotoluene	1800	0.0	1400	78	60-118
3-Nitroaniline	1800	0.0	900	50	30-117
Acenaphthene	1800	0.0	1200	67	53-116
2,4-Dinitrophenol	1800	0.0	220	12*	15-136
4-Nitrophenol	1800	0.0	1700	94	50-129
Dibenzofuran	1800	0.0	1200	67	61-112
2,4-Dinitrotoluene	1800	0.0	1500	83	59-123
Diethylphthalate	1800	0.0	1500	83	61-120
4-Chlorophenyl-phenylet	1800	0.0	1400	78	59-116
Fluorene	1800	0.0	1300	72	63-115
4-Nitroaniline	1800	0.0	1700	94	35-124
4,6-Dinitro-2-methylphe	1800	0.0	590	33	33-130
N-Nitrosodiphenylamine	1800	0.0	1700	94	50-150
4-Bromophenyl-phenyleth	1800	0.0	1300	72	66-110
Hexachlorobenzene	1800	0.0	1400	78	67-112
Pentachlorophenol	1800	0.0	850	47	19-130
Phenanthrene	1800	0.0	1400	78	70-115
Anthracene	1800	0.0	1400	78	63-117
Carbazole	1800	0.0	2000	111	62-122
Di-n-butylphthalate	1800	0.0	1500	83	70-120
Fluoranthene	1800	0.0	1400	78	64-121
Pyrene	1800	0.0	1400	78	66-120
Butylbenzylphthalate	1800	0.0	1500	83	63-123
3,3'-Dichlorobenzidine	1800	0.0	950	53	8-124
Benzo(a)anthracene	1800	0.0	1400	78	50-129
Chrysene	1800	0.0	1400	78	41-150

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0296

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
bis(2-Ethylhexyl)phthal	1800	0.0	1400	78	64-115
Di-n-octylphthalate	1800	0.0	1100	61*	69-137
Benzo(b)fluoranthene	1800	0.0	1300	72	61-129
Benzo(k)fluoranthene	1800	0.0	1400	78	62-130
Benzo(a)pyrene	1800	0.0	1400	78	66-119
Indeno(1,2,3-cd)pyrene	1800	0.0	1600	89	56-128
Dibenzo(a,h)anthracene	1800	0.0	1700	94	58-128
Benzo(g,h,i)perylene	1800	0.0	1700	94	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0297

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	1800	840	47	10	40	45-109
bis(2-Chloroethyl)Ether	1800	800	44	11	40	43-104
2-Chlorophenol	1800	890	49	12	40	43-107
1,3-Dichlorobenzene	1800	880	49	8	40	40-101
1,4-Dichlorobenzene	1800	860	48	10	40	41-102
1,2-Dichlorobenzene	1800	860	48	10	40	41-105
2-Methylphenol	1800	940	52	7	40	45-108
2,2'-oxybis(1-Chloropro	1800	850	47	12	40	41-105
4-Methylphenol	1800	900	50	11	40	48-109
N-Nitroso-di-n-prop.(1)	1800	1200	67	15	40	44-111
Hexachloroethane	1800	970	54	4	40	40-102
Nitrobenzene	1800	960	53	6	40	44-108
Isophorone	1800	1000	56	18	40	42-113
2-Nitrophenol	1800	920	51	2	40	42-111
2,4-Dimethylphenol	1800	910	50	20	40	37-107
2,4-Dichlorophenol	1800	950	53	6	40	49-110
1,2,4-Trichlorobenzene	1800	930	52	7	40	42-107
Naphthalene	1800	880	49	12	40	44-112
4-Chloroaniline	1800	570	32	0	40	4-102
bis(2-Chloroethoxy)meth	1800	870	48	15	40	46-108
Hexachlorobutadiene	1800	970	54	12	40	41-108
4-Chloro-3-Methylphenol	1800	1100	61	24	40	56-117
2-Methylnaphthalene	1800	900	50	11	40	46-110
Hexachlorocyclopentadie	1800	760	42	5	40	10-118
2,4,6-Trichlorophenol	1800	1000	56	18	40	53-115
2,4,5-Trichlorophenol	1800	1000	56*	8	40	59-113
2-Chloronaphthalene	1800	1000	56	18	40	52-112
2-Nitroaniline	1800	1200	67	21	40	63-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0298

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dimethylphthalate	1800	1200	67	15	40	62-117
Acenaphthylene	1800	1100	61	16	40	58-112
2,6-Dinitrotoluene	1800	1200	67	15	40	60-118
3-Nitroaniline	1800	850	47	6	40	30-117
Acenaphthene	1800	1000	56	18	40	53-116
2,4-Dinitrophenol	1800	710	39	106*	40	15-136
4-Nitrophenol	1800	1300	72	26	40	50-129
Dibenzofuran	1800	1100	61	9	40	61-112
2,4-Dinitrotoluene	1800	1200	67	21	40	59-123
Diethylphthalate	1800	1200	67	21	40	61-120
4-Chlorophenyl-phenylet	1800	1100	61	24	40	59-116
Fluorene	1800	1100	61*	16	40	63-115
4-Nitroaniline	1800	1400	78	19	40	35-124
4,6-Dinitro-2-methylphe	1800	880	49	39	40	33-130
N-Nitrosodiphenylamine	1800	1300	72	26	40	50-150
4-Bromophenyl-phenyleth	1800	1000	56*	25	40	66-110
Hexachlorobenzene	1800	1100	61*	24	40	67-112
Pentachlorophenol	1800	730	40	16	40	19-130
Phenanthrene	1800	1100	61*	24	40	70-115
Anthracene	1800	1100	61*	24	40	63-117
Carbazole	1800	1600	89	22	40	62-122
Di-n-butylphthalate	1800	1100	61*	30	40	70-120
Fluoranthene	1800	1200	67	15	40	64-121
Pyrene	1800	1200	67	15	40	66-120
Butylbenzylphthalate	1800	1200	67	21	40	63-123
3,3'-Dichlorobenzidine	1800	790	44	18	40	8-124
Benzo(a)anthracene	1800	1200	67	15	40	50-129
Chrysene	1800	1100	61	24	40	41-150

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - EPA Sample No.: SV1160204 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
bis(2-Ethylhexyl)phthal	1800	1100	61*	24	40	64-115
Di-n-octylphthalate	1800	910	50*	20	40	69-137
Benzo(b)fluoranthene	1800	1000	56*	25	40	61-129
Benzo(k)fluoranthene	1800	1200	67	15	40	62-130
Benzo(a)pyrene	1800	1100	61*	24	40	66-119
Indeno(1,2,3-cd)pyrene	1800	1200	67	28	40	56-128
Dibenzo(a,h)anthracene	1800	1400	78	19	40	58-128
Benzo(g,h,i)perylene	1800	1400	78	19	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 64 outside limits
Spike Recovery: 13 out of 128 outside limits

COMMENTS: _____

0300

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		3	12	0-127
bis(2-Chloroethyl)Ether	25		16	64	46-109
2-Chlorophenol	25		13	52	22-117
1,3-Dichlorobenzene	25		19	76	28-103
1,4-Dichlorobenzene	25		18	72	28-104
1,2-Dichlorobenzene	25		19	76	29-107
2-Methylphenol	25		8	32*	40-104
2,2'-oxybis(1-Chloropro	25		18	72	10-134
4-Methylphenol	25		7	28*	35-106
N-Nitroso-di-n-prop.(1)	25		20	80	44-122
Hexachloroethane	25		19	76	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		20	80	48-118
2-Nitrophenol	25		18	72	29-122
2,4-Dimethylphenol	25		6	24	14-109
2,4-Dichlorophenol	25		16	64	31-122
1,2,4-Trichlorobenzene	25		19	76	33-108
Naphthalene	25		19	76	38-117
4-Chloroaniline	25		6	24	0-152
bis(2-Chloroethoxy)meth	25		19	76	49-112
Hexachlorobutadiene	25		20	80	28-109
4-Chloro-3-Methylphenol	25		13	52	48-117
2-Methylnaphthalene	25		18	72	43-113
Hexachlorocyclopentadie	25		14	56	34-103
2,4,6-Trichlorophenol	25		19	76	34-127
2,4,5-Trichlorophenol	25		18	72	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	25		20	80	53-124
Acenaphthylene	25		20	80	50-119
2,6-Dinitrotoluene	25		19	76	52-122
3-Nitroaniline	25		11	44*	47-115
Acenaphthene	25		21	84	50-121
2,4-Dinitrophenol	25		12	48	0-144
4-Nitrophenol	25		2	8	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		19	76	52-126
Diethylphthalate	25		20	80	53-126
4-Chlorophenyl-phenylet	25		20	80	50-124
Fluorene	25		20	80	52-125
4-Nitroaniline	25		12	48	47-117
4,6-Dinitro-2-methylphe	25		17	68	3-151
4-Bromophenyl-phenyleth	25		21	84	51-124
Hexachlorobenzene	25		22	88	52-124
Pentachlorophenol	25		17	68	5-125
Phenanthrene	25		21	84	52-128
Anthracene	25		20	80	52-127
Carbazole	25		21	84	54-126
Di-n-butylphthalate	25		20	80	56-132
Fluoranthene	25		20	80	53-130
Pyrene	25		22	88	53-131
Butylbenzylphthalate	25		19	76	54-128
3,3'-Dichlorobenzidine	25		9	36*	41-117
Benzo(a)anthracene	25		21	84	56-124
Chrysene	25		22	88	53-123
bis(2-Ethylhexyl)phthal	25		18	72	56-127

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: S2FLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	1700		1600	94	62-117
Acenaphthylene	1700		1500	88	58-112
2,6-Dinitrotoluene	1700		1600	94	60-118
3-Nitroaniline	1700		1500	88	30-117
Acenaphthene	1700		1400	82	53-116
2,4-Dinitrophenol	1700		1900	112	15-136
4-Nitrophenol	1700		2000	118	50-129
Dibenzofuran	1700		1500	88	61-112
2,4-Dinitrotoluene	1700		1800	106	59-123
Diethylphthalate	1700		1700	100	61-120
4-Chlorophenyl-phenylet	1700		1500	88	59-116
Fluorene	1700		1500	88	63-115
4-Nitroaniline	1700		2200	129*	35-124
4,6-Dinitro-2-methylphe	1700		1500	88	33-130
N-Nitrosodiphenylamine	1700		1900	112	50-150
4-Bromophenyl-phenyleth	1700		1400	82	66-110
Hexachlorobenzene	1700		1500	88	67-112
Pentachlorophenol	1700		1600	94	19-130
Phenanthrene	1700		1500	88	70-115
Anthracene	1700		1500	88	63-117
Carbazole	1700		2300	135*	62-122
Di-n-butylphthalate	1700		1500	88	70-120
Fluoranthene	1700		1600	94	64-121
Pyrene	1700		1400	82	66-120
Butylbenzylphthalate	1700		1500	88	63-123
3,3'-Dichlorobenzidine	1700		1400	82	8-124
Benzo(a)anthracene	1700		1500	88	50-129
Chrysene	1700		1500	88	41-150

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

306B

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix Spike - Sample No.: S2PLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
bis(2-Ethylhexyl)phthal	830		610	73	64-115
Di-n-octylphthalate	830		550	66*	69-137
Benzo(b)fluoranthene	830		610	73	61-129
Benzo(k)fluoranthene	830		750	90	62-130
Benzo(a)pyrene	830		640	77	66-119
Indeno(1,2,3-cd)pyrene	830		600	72	56-128
Dibenzo(a,h)anthracene	830		590	71	58-128
Benzo(g,h,i)perylene	830		610	73	32-149

(1) N-Nitroso-di-n-propylamine

5/6/03

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 64 outside limits

COMMENTS: _____

Aqueous.

CHEM CORPORATION ORGANIC PREP[illegible] SAMPLE PREPARATION : SEMIVOLATILES

Date: 2-6-03	Analysis: 8270	Method & SOP #: Aq: 3510C (SepF) / Soil: 3550B (Sonic); 3520C (Liq/Liq) / 3540C (Soxhlet); Other:	Matrix: (Aqueous) Soil Wipe Oil; Other:	Project(s): B0215, B0213, B0192, B0199, B0212		
Blank ID: MB 5501	LCS ID: LCS 5501	Analyst: SP	Spiked By: SP	Witness: N/A	Solvent Lot#: X13E04	H_2SO_4 Lot#: 319020 / NaOH Lot#: —	Time Started: 17:00 / Time Ended: 19:06

Project ID	Sample ID	Sample Wt (g) / (Vol (ml))	Surrogate Spike Added	Matrix Spike Added	H_2SO_4 pH<2	NaOH pH > 10	Emulsion	KD Prior to Fractionation Date / Analyst	Fractionation Date / Analyst	Final Concentration Date / Analyst		Final Conc. Volume	Date Extract Trans.
MB 5501	—	1000ml	OSW030116A 500 µl	—	✓	—	—			2-7-03	(PN)	1mL	2-7-03
LCS 5501	—			OSW030138A 500 µl									
B0192	001			—						2-7-03	(PN)	1mL	2-7-03
B0199	028			↓						2-10-03	SP	1ml	2-10-03
B0212	001			—									
	01MS			OSW030138B 500 µl					SP 2/10/03				
	01MSD			OSW030138B 500 µl									
	002			—									
↓	003				↓	↓							
B0212	004				✓								
B0213	001	✓			—								
B0215	002	✓			✓								
↓	025	✓ ↓	↓	↓	✓	↓							
B0215	026	1000ml	OSW030116A 500 µl	—	✓	—							
B0204	07	750ml	OSW030116A 500 µl	—	✓	—				↓	↓	1ml	↓
B0204	08	300ml	OSW030116A 250 µl	—	✓	—				2-10-03	SP	1/2ml	2-10-03
					1/7 (PN) 2-7-03								

Comments:

Sonicator Tuned: Yes / No

Water Bath Temperature: 40°C

Logbook ID 50.0147-5/02

Reviewed By: KC 3/19/03

Logbook Page 0080

Soil

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : SEMIVOLATILES

Date: 2.19.03	Analysis: 8270	Method & SOP #	Aq: 3510C (SepF) 3520C (Liq/Liq) Other:	Soil: 3550B (Sonic) 3540C (Soxhlet)	Matrix: Aqueous (Soil) Wipe Oil Other:	Project(s) B0215
Blank ID MB-5703	LCS ID LCS-5703	Analyst TI	Spiked By TI	Witness (PN)	Solvent Lot# X13E04	H_2SO_4 Lot#	NaOH Lot#	Time Started: 12:00 Time Ended: 14:00

Project ID	Sample ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	H_2SO_4 pH<2	NaOH pH > 10	Emulsions	KD Prior to Fractionation Date / Analyst	Fractionation Date / Analyst	Final Concentration Date / Analyst		Final Conc. Volume	Date Extract Trans.
MB-5703	—	30.0	05W030214A 500ml	—						2-24-03	BP	1ml	2-24-03
LCS-5703	—	30.0		05W030214C 500ml									
B0215	03	30.0 ✓		—									
	04	30.5 ✓											
	05	30.0 ✓											
	06	30.2 ✓											
	07	30.5 ✓											
	08	30.8 ✓											
	09	30.3 ✓											
	10	30.7 ✓											
	11	30.6 ✓											
	12	30.3 ✓											
	13	30.5 ✓											
	14	30.6 ✓											
	15	30.8 ✓											
	16	30.0 ✓											
15	17	30.7 ✓		—									
	17MS	30.0 ✓		05W030214C 500ml									
B0215	17MSD	30.2 ✓	05W030214A 500ml	05W030214C 500ml						2-24-03	BP	1ml	2-24-03

Comments:

Sonicator Tuned: (Yes) No

Water Bath Temperature: 95°C

Logbookk ID 50.0147-1/03

Reviewed By: (PN) 2.24.03

Logbook Page 0028

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : SEMIVOLATILES

Date:	Analysis:	Method & SOP #	Matrix:	Project(s)
2.19.03	8270	Aq: 3510C (SepF) 3520C (Liq/Liq) Other: Soil: 3550B (Sonic) 3540C (Soxhlet)	Aqueous Soil Wipe Oil Other:	B0215

Blank ID	LCS ID	Analyst	Spiked By	Witness	Solvent Lot#	H_2SO_4 Lot#	NaOH Lot#	Time Started / Time Ended
MB-5703	LCS-5703	TT	TT	PM	X13E04	—	—	12:00 / 14:00

Project ID	Sample ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	H_2SO_4 pH<2	NaOH pH > 10	Emulsion	KD Prior to Fractionation Date / Analyst	Fractionation Date / Analyst	Final Concentration Date / Analyst		Final Conc. Volume	Date Extract Trans.
B0215	18	30.8 ✓	03W1302147A 500ml	—	—	—				2-24-03	RP	1ml	2-24-03
↓	19	30.7 ✓	↓	↓	—	—				↓	↓	↓	↓
B0215 3	20	30.6 ✓	03W1302147A 500ml	—	—	—				2-24-03	RP	1ml	2-24-03

NH (PM) 2.19.03

Comments:

Sonicator Tuned (Yes) / No

Water Bath Temperature: 95°C

Logbookk ID 50.0147-1/03

Reviewed By: KC 3/19/03

Logbook Page 0029

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : SEMIVOLATILES

Date: 2.19.03 ✓ | Analysis: 8270 | Method & SOP #: Aq: ~~3510C (SepF)~~ 3520C (Liq/Liq) Other: ___ ; Soil: 3550B (Sonic) 3540C (Soxhlet) | Matrix: Aqueous (Soil) Wipe Oil Other: ___ | Project(s): B0221 B0215 B0224 B0245

Blank ID: MB-5702 | LCS ID: LCS-5702 | Analyst: UP | Spiked By: UP | Witness: TT | Solvent Lot#: X13E04 | H_2SO_4 Lot#: ___ | NaOH Lot#: ___ | Time Started: 10:06 | Time Ended: 12:00

Project ID	Sample ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	H_2SO_4 pH<2	NaOH pH > 10	Emulsion	KD Prior to Fractionation Date / Analyst	Fractionation Date / Analyst	Final Concentration Date / Analyst		Final Conc. Volume	Date Extract Trans.
MB-5702	1	30.0	05W030214A 500ml	—						2.19.03	BP	1mL	2.19.03
LCS-5702	2	30.0		05W030214C 500ml									
B0215	21	30.3 ✓		—						2.28.03	TB	1ml	2.28.03
↓	22	30.3 ✓		↓						2.28.03	TB	1ml	2.28.03
↓	23	30.6 ✓								2.28.03	TB	1ml	2.28.03
B0215 4	24	30.4 ✓								2.28.03	TB	1ml	2.28.03
B0221	02	30.7								2.28.03	TB	1ml	2.28.03
↓	03	30.4								2.28.03	TB	1ml	2.28.03
↓	04	30.6								2.28.03	TB	1ml	2.28.03
↓	05	30.9								2.28.03	TB	1ml	2.28.03
↓	06	30.2								2.28.03	TB	1ml	2.28.03
↓	07	30.1								2.28.03	TB	1ml	2.28.03
↓	08	30.8								2.28.03	TB	1ml	2.28.03
B0221	09	30.5		↓						2.28.03	TB	1ml	2.28.03
B0224	10	30.9		—						2.19.03	BP	1ml	2.19.03
↓	10MS	30.7		05W030214C 500ml						↓	↓	↓	↓
↓	10MSD	30.3		05W030214C 500ml								1ml	
B0224	15	30.5		—								10ml	
B0245	03	30.9	05W030214A 500ml	—						2.19.03	BP	1ml	2.19.03

Comments:

680 mL

Sonicator Tuned: (Yes) / No

Water Bath Temperature: 95 °C

Logbookk ID 50.0147-1/03

Reviewed By: [signature] 2.24.03

Logbook Page 0026

3/10/03

ORGANIC PREP - SAMPLE PREPARATION : SEMIVOLATILES

3/10/03	BNA	Method & SOP #	Aq: 3510C (SepF) Soil: 3550B (Sonic)	3520C (Liq/Liq) 3540C (Soxhlet)	Other:	Matrix: Aqueous (Soil) Wipe Oil Other:		Project(s) B0213, 215, 221, 235, 246
Blank ID MB-60106	LCS ID LCS-6006	Analyst TT	Spiked By TT	Witness	Solvent Lot#	H_2SO_4 Lot# —	NaOH Lot# —	Time Started: 9:00 Time Ended: 14:00

Project ID	Sample ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	H_2SO_4 pH<2	NaOH pH > 10	Emulsion	KD Prior to Fractionation Date / Analyst	Fractionation Date / Analyst	Final Concentration Date / Analyst		Final Conc. Volume	Date Extract Trans.
MB-6006	—	30.0	500µL 03003022AA	—						3/10/03	TT	1ml	3-10-03
LCS-6006	—	30.0										1ml	
B0213 - ~~TT~~	11RE	30.0										10ml	
B0213	13RE	30.1 ✓										1ml	
B0215	08RE	30.1 ✓											
B0215	23RE	30.5 ✓											
B0215	24RE	30.4 ✓											
B0221	02RE	30.0											
B0221	06RE	30.0											
B0221	07RE	30.0		↓									
B0235	01RE	15.1		—									
B0235	01MS	15.0		500µL 03003022AA									
B0235	01MSD	15.0		500µL 03003022AA									
B0~~23~~246	02RE	10.0		—									
B0246	02MS	10.0		500µL 03003022AA									
	02MSD	10.0		500µL 03003022AA									
↓	26RE	30.5	↓	—						↓	↓	↓	↓
B0246	30RE	30.1	500µL 03003022AA	—						3/10/03	TT	1ml	3-10-03

11 3/10/03

TT 3/10/03

Comments:

1030

Sonicator Tuned: Yes / No

Water Bath Temperature: _____

Logbookk ID 50.0147-1/03

Reviewed By: KL 3/19/03

Logbook Page 0086

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT	JOB NUMBER		
Navy	N4740		
SUBJECT	Sample Calculation.		
BASED ON	FTA-SS-112 (SVOC)	DRAWING NUMBER	
BY: DSS	CHECKED BY	APPROVED BY	DATE 5/6/03

Analytical Fraction: SVOC
Sample Matrix: Soil
Compound: Benzo(b)fluoranthene
Laboratory Reported Result: 140 ug/kg

Quantitation formula: $ug/kg = \frac{(Ax)(Is)(Vt)(DF)(GPC)}{(Ais)(\overline{RRF}x)(Vi)(Ws)(D)}$

Ax = target compound peak area
55084 Area

Is = internal Standard amount
40 ng

Vt = final volume
1000 ul

Df = Dilution factor
1 unitless

GPC = Cleanup Correction factor
1 unitless

Ais = Internal standard area
335149 Area

$\overline{RRF}x$ = Relative Response factor target compound
1.833 unitless

Vi = Volume injected
1 ul

Ws = Weight of Sample extracted
30g

D = % Solid
0.85

$ug/kg = \frac{(55084\ Area)(40\ ng)(1000\ ul)(1)(1)}{(335149\ Area)(1.833)(1.0\ ul)(30g)(0.85)}$

$= 140.65\ ng/g \approx 140\ ug/kg$

Data File: S2D2270.D
Report Date: 18-Mar-2003 12:16

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030303.B\S2D2270.D
Lab Smp Id: B0215-03A Client Smp ID: FTASS112
Inj Date : 03-MAR-2003 23:46
Operator : YD Inst ID: s2.i
Smp Info : B0215-03A,FTASS112,5703,,,B0215
Misc Info : ,,,2,,,,30.0,15,,19-FEB-03,6-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030303.B\s2_8270C.m
Meth Date : 10-Mar-2003 14:52 mtl Quant Type: ISTD
Cal Date : 27-FEB-2003 00:15 Cal File: S2D2106.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8270C.sub
Target Version: 4.03
Processing Host: TARGET7

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.000	Weight of sample extracted (g)
M	15.000	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
$	3 2-Fluorophenol	112	5.347	5.338	(0.708)	188464	46.7499	1800
$	5 Phenol-d5	99	6.934	6.947	(0.918)	219971	42.2047	1600
$	9 2-Chlorophenol-d4	132	7.150	7.163	(0.947)	244623	47.1190	1800
*	12 1,4-Dichlorobenzene-d4	152	7.550	7.562	(1.000)	165478	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	7.830	7.843	(1.037)	107381	27.1786	1100
$	22 Nitrobenzene-d5	82	8.586	8.609	(0.862)	183636	33.0717	1300
*	31 Naphthalene-d8	136	9.957	9.970	(1.000)	512506	40.0000	
$	41 2-Fluorobiphenyl	172	12.127	12.150	(0.901)	379141	31.5669	1200
*	48 Acenaphthene-d10	164	13.465	13.478	(1.000)	308397	40.0000	
$	60 2,4,6-Tribromophenol	330	15.074	15.086	(0.915)	136603	65.6420	2600
*	64 Phenanthrene-d10	188	16.477	16.490	(1.000)	528095	40.0000	
	65 Phenanthrene	178	16.509	16.533	(1.002)	23436	1.57194	62(a)
	69 Fluoranthene	202	18.928	18.951	(1.149)	81318	4.95317	190(a)

Data File: S2D2270.D
Report Date: 18-Mar-2003 12:16

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	71 Pyrene	202	19.381	19.405	(0.887)	69436	4.47595	180(a)
$	72 Terphenyl-d14	244	19.759	19.761	(0.905)	474982	38.3115	1500
	75 Benzo(a)anthracene	228	21.821	21.844	(0.999)	51574	3.37314	130(a)
*	76 Chrysene-d12	240	21.842	21.866	(1.000)	531013	40.0000	
	77 Chrysene	228	21.885	21.920	(1.002)	51003	3.93707	150(a)
	80 Benzo(b)fluoranthene	252	23.861	23.895	(0.972)	55084	3.58688	140(a)
	81 Benzo(k)fluoranthene	252	23.904	23.938	(0.974)	22718	1.65289	65(aMH)
	82 Benzo(a)pyrene	252	24.444	24.467	(0.996)	28654	2.29080	90(a)
*	83 Perylene-d12	264	24.552	24.565	(1.000)	335149	40.0000	
	84 Indeno(1,2,3-cd)pyrene	276	26.884	26.929	(1.095)	15313	1.20516	47(a)
	86 Benzo(g,h,i)perylene	276	27.585	27.630	(1.124)	13858	1.45609	57(a)

JC 3-18-03

JC 3-18-03

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

JC
3-18-03

KL

0475

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

Aqueous

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BC	AR1660BC	02/07/03	0612	8.45	25.36
23	BBLK1C	MB-5498	02/07/03	0930	8.47	25.37
24	B1CLCS	LCS-5498	02/07/03	1006	8.46	25.37
25	B1CLCSD	LCSD-5498	02/07/03	1041	8.46	25.37
26	AR1660BD	AR1660BD	02/07/03	1744	8.46	25.36
27	AR1660BA	AR1660BA	02/11/03	1231	8.45	25.37
28	RB-020403	B0215-02C	02/11/03	1748	8.46	25.36
29	RB-020503	B0215-25C	02/11/03	1823	8.45	25.36
30	FB-020503	B0215-26C	02/11/03	1859	8.45	25.36
31	AR1660BE	AR1660BE	02/11/03	2155	8.45	25.36
32	AR1660BQ	AR1660BQ	02/20/03	1808	8.44	25.34

OK OK 3 OK

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

1246

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW: Soil

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	BBLK1H	MB-5670	02/20/03	1918	8.44	25.34
02	B1HLCS	LCS-5670	02/20/03	1954	8.45	25.34
03	FTASS112	B0215-03A	02/20/03	2029	8.45	25.35
04	SV1120204	B0215-04A	02/20/03	2104	8.45	25.35
05	SV1120709	B0215-05A	02/20/03	2140	8.45	25.35
06	FTASS113	B0215-06A	02/20/03	2215	8.45	25.35
07	SV1130204	B0215-07A	02/20/03	2251	8.45	25.35
08	SV1130709	B0215-08A	02/20/03	2326	8.45	25.35
09	FTASS114	B0215-09A	02/21/03	0001	8.45	25.35
10	SV1140204	B0215-10A	02/21/03	0036	8.45	25.35
11	AR1660BS	AR1660BS	02/21/03	0333	8.45	25.35
12	BBLK1I	MB-5689	02/21/03	0443	8.45	25.35
13	B1ILCS	LCS-5689	02/21/03	0519	8.45	25.35
14	SV1140709	B0215-11A	02/21/03	0554	8.45	25.35
15	SVDUP3	B0215-12A	02/21/03	0629	8.45	25.35
16	FTASS115	B0215-13A	02/21/03	0704	8.45	25.35
17	SV1150204	B0215-14A	02/21/03	0740	8.45	25.35
18	SV1150810	B0215-15A	02/21/03	0815	8.45	25.35
19	FTASS116	B0215-16A	02/21/03	0850	8.44	25.34
20	SV1160204	B0215-17A	02/21/03	0926	8.44	25.34
21	SV1160204MS	B0215-17AMS	02/21/03	1001	8.44	25.34
22	AR1660BT	AR1660BT	02/21/03	1259	8.44	25.34
23	SV1160204MSD	B0215-17AMSD	02/21/03	1708	8.44	25.34
24	SV1160709	B0215-18A	02/21/03	1743	8.44	25.34
25	FTASS117	B0215-19A	02/21/03	1819	8.44	25.33
26	SV1170204	B0215-20A	02/21/03	1854	8.44	25.33
27	SV1170709	B0215-21A	02/21/03	1929	8.44	25.34
28	AR1660BU	AR1660BU	02/21/03	2226	8.44	25.34
29	FTASS118	B0215-22A	02/22/03	0048	8.44	25.34
30	SV1180204	B0215-23A	02/22/03	0123	8.44	25.34
31	SV118070	B0215-24A	02/22/03	0159	8.44	25.34
32	AR1660BV	AR1660BV	02/22/03	0753	8.44	25.34

8 ok 7 ok 4 ok 3

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) WATER Lab Sample ID: MB-5498

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9094F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/06/03

Concentrated Extract Volume: 2500(uL) Date Analyzed: 02/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.25	U
11104-28-2	Aroclor-1221	0.25	U
11141-16-5	Aroclor-1232	0.25	U
53469-21-9	Aroclor-1242	0.25	U
12672-29-6	Aroclor-1248	0.25	U
11097-69-1	Aroclor-1254	0.25	U
11096-82-5	Aroclor-1260	0.25	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1H

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5670

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9344F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Matrix: (soil/water) SOIL Lab Sample ID: MB-5689

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9360F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 10
PCB IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

FTASS117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Lab Sample ID: B0215-19A Date(s) Analyzed: 02/21/03 02/21/03

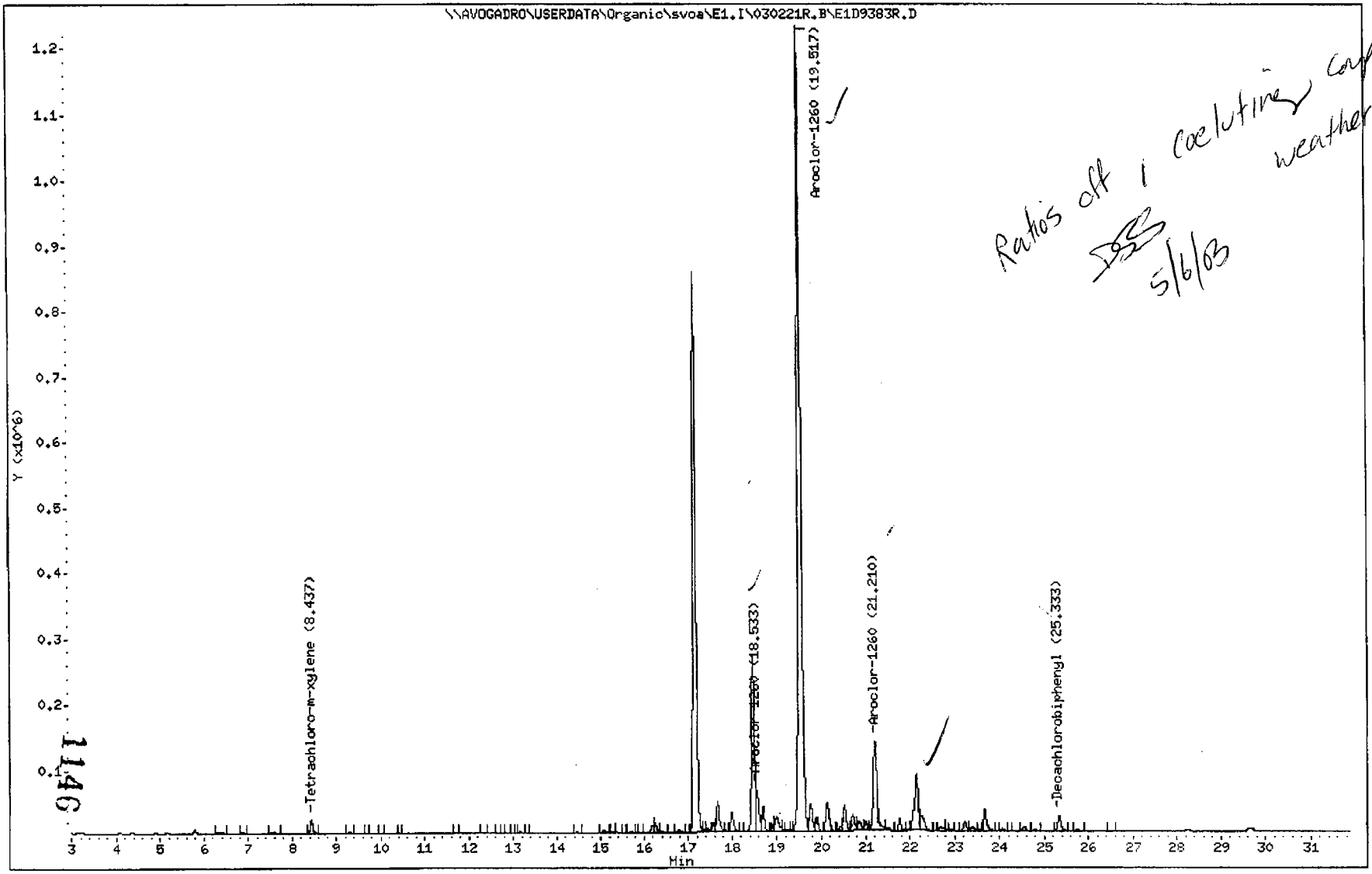
Instrument ID (1): E1 Instrument ID (2): E1

GC Column(1): RTXCLPPEST 2 ID: 0.53(mm) GC Column(2): RTXCLPPEST ID: 0.53(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	16.78	16.75	16.89	530		
Aroclor-1260	2	18.55	18.52	18.66	620		
	3	19.27	19.24	19.38	730		
COLUMN 1	4					630 ✓	
	5						
	1	18.53	18.51	18.65	540		
	2	19.52	19.45	19.59	10000		
	3	21.21	21.15	21.29	790		
COLUMN 2	4					3800	143.1 DS 5/6/03
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

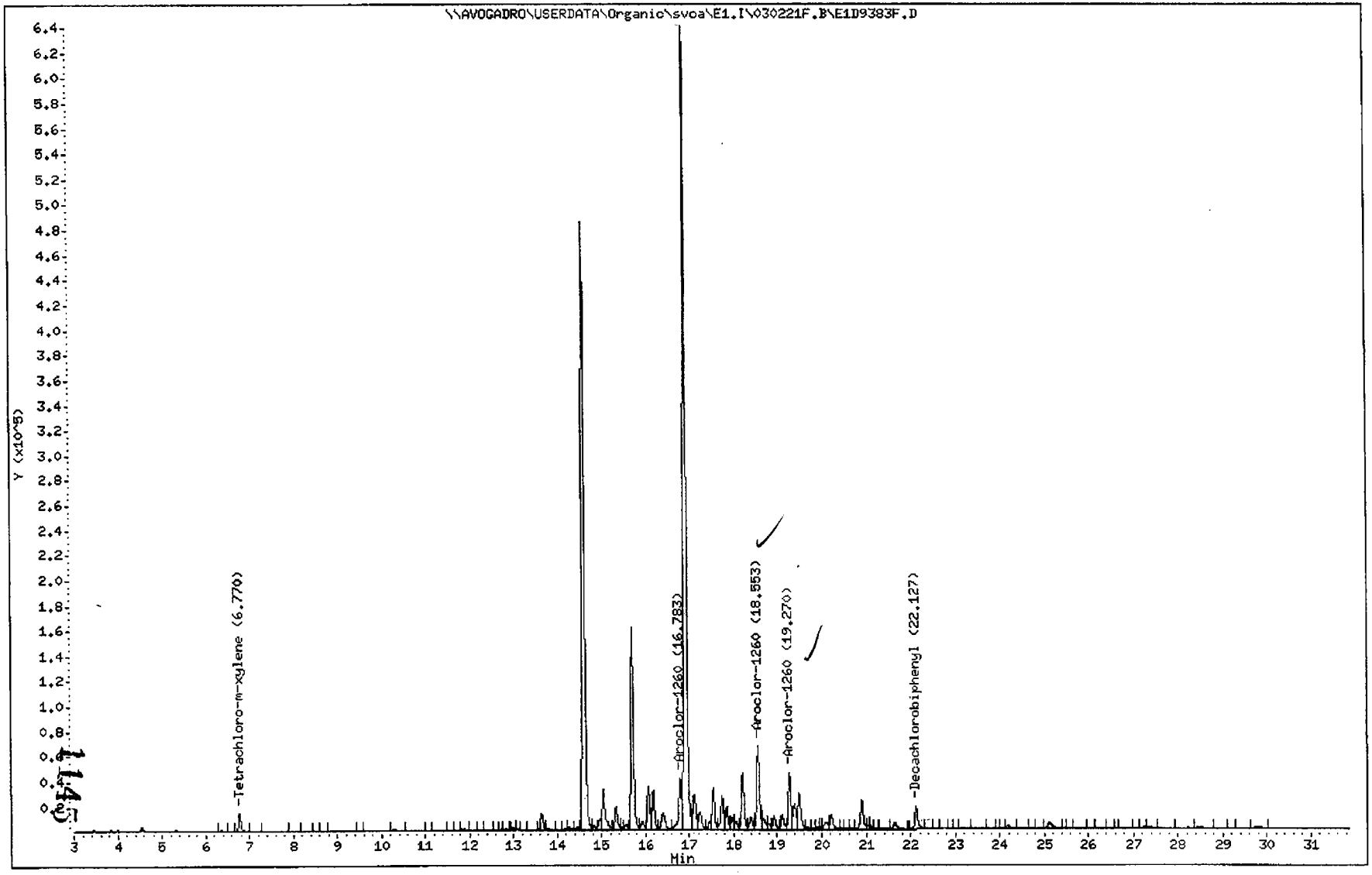
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Date : 21-FEB-2003 18:19
Client ID: FTASS117
Instrument: E1.i
Sample Info: B0215-19A,FTASS117,MB-5670,pcb.sub,,
Volume Injected (uL): 1.0
Operator: PETER
Column phase: RtxCLPPest
Column diameter: 0.53



Ratios off ; calculating compounds weathered PCB
5/6/03

1146

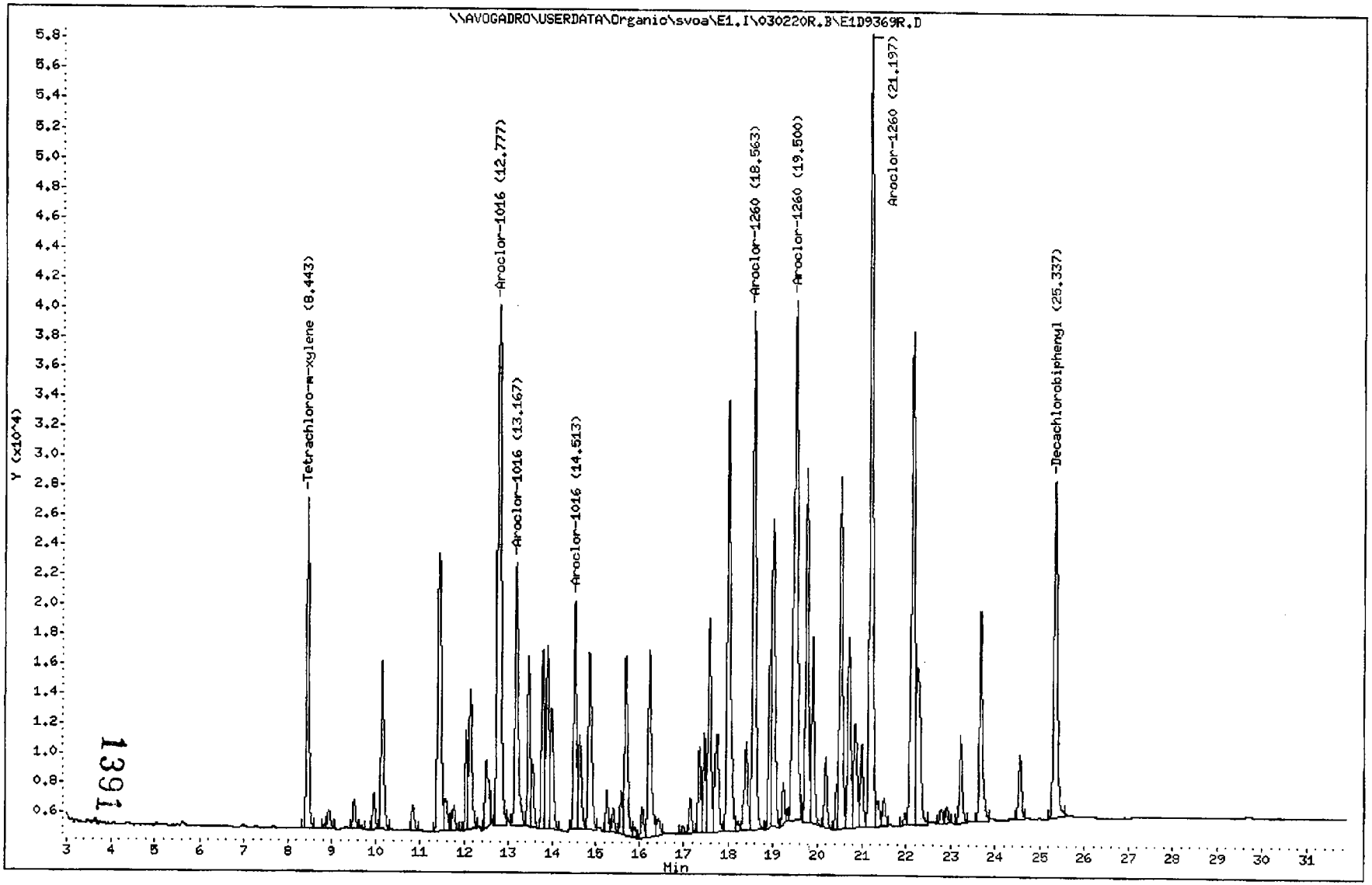
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Date : 21-FEB-2003 18:19
Client ID: FTASS117
Instrument: E1.i
Sample Info: B0215-19A,FTASS117,MB-5670,pcb,sub,,
Volume Injected (uL): 1.0
Operator: PETER
Column phase: RtxCLPPest 2
Column diameter: 0.53



114

Data File: \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030220R.B\E1D9369R.D
Date : 21-FEB-2003 10:01
Client ID: SV1160204MS
Sample Info: B0215-17AMS,SV1160204MS,MB-5670,pcb.sub,,
Volume Injected (uL): 1.0
Column phase: RtxCLPPest

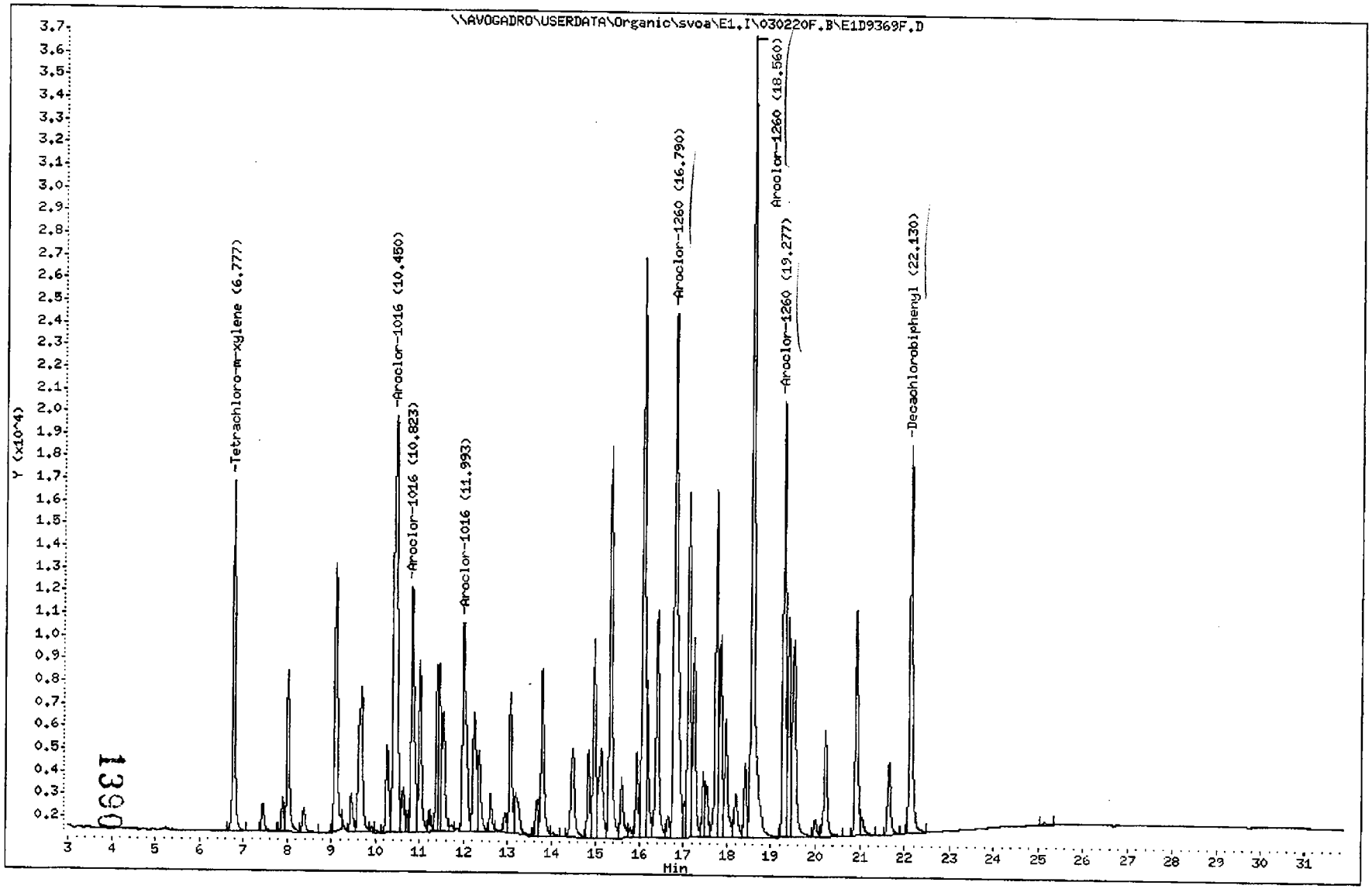
Instrument: E1.i
Operator: PETER
Column diameter: 0.53



Data File: \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030220F.B\E1D9369F.D
Date : 21-FEB-2003 10:01
Client ID: SV1160204MS
Sample Info: B0215-17AMS,SV1160204MS,MB-5670,pcb,sub,,
Volume Injected (uL): 1.0
Column phase: RtxCLPPest 2

Instrument: E1.i

Operator: PETER
Column diameter: 0.53



Aqueous

ORGANICS PREP SAMPLE PREPARATION: PEST/PCB

Date: 2-6-03	Prep Batch: PCB	Method & SOP #: Aq: 3510C (SepF) 3520C (Liq/Liq) Soil: 3550B (Sonic) 3540C (Soxhlet) Other:	Matrix: (Aqueous) Soil Wipe Oil Other:	Project(s): B0215 B0217, B0199, B0212
Blank ID: MB 5498	LCS ID: LCS, LSD 5498	Analyst: SP	Spiked By: SP	Witness:
Solvent Lot #: X13E04				Time Started: 17:00 Time Ended: 19:00

Sample ID	Client ID	Sample Wt (g) / (Vol (ml))	Surrogate Spike Added	Matrix Spike Added	Emulsion	Esterification Date / Analyst	Final Concentration Date / Analyst		Final Concentration Volume	Acid / Copper Cleanup Date / Analyst		Date Extract Trans.
MB 5498		1000 ml	opw03030B 1ml				2-6-03	SP	2.5ml	2-6-03	SP	2-6-03
LCS 5498		↓	↓	opw03013OB 1ml			↓	↓	↓	↓	↓	↓
LCSD 5498				opw03013OB 1ml								
B0217 001												
↓ 002				↓			↓	↓	↓	↓	↓	↓
B0217 003							2-6-03	SP	2.5ml	2-6-03	SP	2-6-03
B0199 028				↓			2-10-03	SP	10ml	2-10-03	SP	2-10-03
B0212 001												
↓ 001ms				opw03013OB 1ml								
001msd				opw03013OB 1ml								
002												
↓ 003				↓			↓	↓	↓	↓	↓	↓
B0212 004												
B0215 002	✓											
↓ 025	✓	↓	↓	↓			↓	↓	↓	↓	↓	↓
B0215 026	✓	1000ml	opw03030B 1ml				2-10-03	SP	10ml	2-10-03	SP	2-10-03

3

Comments:

Water Bath Temp. Sonicator Tuned? Yes/No

1397

Logbook ID: 50.0149-2/02

Reviewed By: SBC 3/4/03

Logbook Page: 0077

Soil

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : PEST/PCB

Date:	Analysis:	Method & SOP #	Aq: 3510C (SepF) 3520C (Liq/Liq) Soil: 3550B (Sonic) 3540C (Soxhlet) Other:	Matrix: Aqueous (Soil) Wipe Oil Other:	Project(s)
2/18/03	8082				B0215, B0220

Blank ID	LCS ID	Analyst	Spiked By	Witness	Solvent Lot #	Time Started / Time Ended
MB-5689	LCS-5689	JT	JT	SP	X13504	15:00 / 17:00

Sample ID	Client ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	Emulsion	Esterification Date / Analyst	Final Concentration Date / Analyst		Final Concentration Volume	Acid / Copper Cleanup Date / Analyst		Date Extract Trans.
MB-5689	—	30.0	OPU03072SA 2mL	—	—		2.20.03	TB	10mL	2.20.03	TB	2.20.03
LCS-5689	—	30.0		OPU0302023A 1mL								
B0215-23	-23	30.0		—								
B0215-24	-24	30.1								2.20.03	TB	2.20.03
B0220-01	-01	30.0										
-02	-02	30.5										
-03	-03	30.4										
-04	-04	30.4										
-05	-05	30.3										
-06	-06	30.3										
-07	-07	30.1										
-08	-08	30.0										
-09	-09	30.1										
-10	-10	30.3		—								
-10MS	-10MS	30.3		OPU03012OB 1mL								
-10MSD	-10MSD	30.1		OPU03012OB 1mL								
-11	-11	29.5		—								
-12	-12	30.2	↓	—	↓		↓	↓	↓			
B0220-13	-13	30.1	OPU03020ZA 2mL	—	↓		2.20.03	TB	10mL			

Comments:

Water Bath Temp. 95°C

Sonicator Tuned? (Yes)/No

1399

Logbook ID: 50.0149-2/02

Reviewed By: SBL 3/4/03

Logbook Page: 0 0 98

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : PEST/PCB

Date:	Analysis:	Method & SOP #	Matrix:	Project(s)
2.18.03	8082	Aq: 3510C (SepF) 3520C (Liq/Liq) Soil: 3550B (Sonic) 3540C (Soxhlet) Other:	Aqueous (Soil) Wipe Oil Other:	B0215

~~Blank ID~~	LCS ID	Analyst	Spiked By	Witness	Solvent Lot #	Time Started / Time Ended
MB-5670	LCS-5670	TT	TT	(TB)	X13E04	Time Started: 09:00 Time Ended: 11:00

~~Project ID~~ ~~Sample ID~~ Client ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	Emulsion	Esterification Date / Analyst	Final Concentration Date / Analyst	Final Concentration Volume	Acid / Copper Cleanup Date / Analyst	Date Extract Trans.
MB-5670	30.0	OPW03 2mL	—			2.20.03 TB	10ml	2.20.03 TB	2.20.03
LCS-5670	30.0								
B0215 03	30.2 ✓	15							
04	30.1 ✓	9							
05	30.2 ✓	9							
06	30.2 ✓	8							
07	30.6 ✓	11							
08	30.3 ✓	8							
09	30.8 ✓	9							
10	30.4 ✓	9							
11	30.1 ✓	8							
12	30.0 ✓	10							
13	30.0 ✓	11							
14	30.3 ✓	9							
15	30.6 ✓	9							
16	30.2 ✓	10							
17	30.2 ✓	8	—						
17MS	30.1	8	OPW03						
B0215 17MSD	30.1	OPW03 8 2mL	OPW03			2.20.03 TB	10ml	2.20.03 TB	2.20.03

15

Comments:

Water Bath Temp. 95°C

Sonicator Tuned? (Yes) No

1400

Logbook ID: 50.0149-2/02

Reviewed By: SL 3/4/03

Soil

MITKEM CORPORATION ORGANIC PREP - SAMPLE PREPARATION : PEST/PCB

Date: 2.18.03	Analysis: 8082	Method & SOP #	Aq: 3510C (SepF) 3520C (Liq/Liq) Soil: 3550B (Sonic) 3540C (Soxhlet) Other:	Matrix: Aqueous (Soil) Wipe Oil Other:	Project(s) B0215
Blank ID MB-5670	LCS ID LCS-5670	Analyst TT	Spiked By TT	Witness (PM)	Solvent Lot # X13E04	Time Started: 09:00 Time Ended: 11:00

Sample ID	Client ID	Sample Wt (g) / Vol (ml)	Surrogate Spike Added	Matrix Spike Added	Emulsion	Esterification Date / Analyst	Final Concentration Date / Analyst		Final Concentration Volume	Acid / Copper Cleanup Date / Analyst		Date Extract Trans.
MB-5670						N/A (PM) 2.18.03						
LCS-5670												
B0215-18	11	30.2 ✓	OPW03 2mL				2.20.03	TB	10mL	2.20.03	TB	2.20.03
-19	14	30.4 ✓										
-20	10	30.5 ✓										
-21	8	30.1 ✓										
B0215 -22	10	30.0 ✓	OPW03 2mL				2.20.03	TB	10mL	2.20.03	TB	2.20.03

5

N/A (PM) 2.18.03

Comments:

Water Bath Temp. 95°C

Sonicator Tuned? (Yes) No

1403

Logbook ID: 50.0149-2/02

Reviewed By: SBL 3/4/03

Logbook Page: 0 0 93

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT		JOB NUMBER	
Navy		N4740	
SUBJECT	Sample Calculation		
BASED ON	FTA-SS-117 (PCB)	DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
DSS			5/6/03

Analytical Fraction: PCB
Sample Matrix: Soil
Target Compound: Aroclor-1260
Laboratory Reported Result: 630 ug/kg

Quantitation Formula: $ug/kg = \frac{(Ax)(Vt)(Df)(GPC)}{(\overline{CF}_x)(Vi)(Ws)(D)}$

Ax = Target Compound Area (Peak)
151037 Area

Vt = Final extract volume
10000 ul

Df = Dilution Factor.
1 unitless

GPC = Column Cleanup Correction Factor.
1 unitless

$\overline{CF}_x$ = Avg. Cal. factor of target Compound
92792 Area/ng

Vi = Volume Injected
1 ul

Ws = Weight of Sample extracted.
30.4 g

D = % Solid
0.86

$ug/kg = \frac{(151037\ Area)(1000\ ul)(1)(1)}{(92792\ Area/ng)(1\ ul)(30.4\ g)(0.86)}$

$= 622.58\ ng/g \approx 630\ ug/kg$

Data File: E1D9383F.D
Report Date: 04-Mar-2003 10:44

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030221F.B\E1D9383F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030221R.B\E1D9383R.D
Inj Date : 21-FEB-2003 18:19
Sample Info: B0215-19A,FTASS117,MB-5670,pcb.sub,,
Misc Info : 0,,,2,,,,30.4,14,,18-FEB-03,06-FEB-03,B0215
Cal Date : 24-FEB-2003 11:41
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030221F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030221R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.400	Weight of sample extracted (g)
M	14.000	% Moisture

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/Kg)	Conc#2 (ug/Kg)	Target Range	Ratio
Tetrachloro-m-xylene	6.770	8.437	14195	20464	11	10		100.00
Decachlorobiphenyl	22.127	25.333	17500	21676	12	12		100.00
Aroclor-1260	16.783	18.533	40962	64059	530	540	80.00- 120.00	100.00
	18.553	19.517	65738	1227143	620	y 10000	130.27- 170.27	160.49
	19.270	21.210	44337	134083	730	790	60.70- 100.70	108.24
			Average of Peak Amounts =		630	3800		

151037 Area

5/6/03

1147

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

$\bar{X}$ = 92792 Area/ng

5/6/03

FORM VI PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **JUNE 6, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND PH**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0215

SAMPLES: 22/SOIL/

FTA-SS-112	FTA-SS-113	FTA-SS-114
FTA-SS-115	FTA-SS-116	FTA-SS-117
FTA-SS-118	FTA-SU-112-0204	FTA-SU-112-0709
FTA-SU-113-0204	FTA-SU-113-0709	FTA-SU-114-0204
FTA-SU-114-0709	FTA-SU-115-0204	FTA-SU-115-0810
FTA-SU-116-0204	FTA-SU-116-0709	FTA-SU-117-0204
FTA-SU-117-0709	FTA-SU-118-0204	FTA-SU-118-0709
FTA-SU-DUP3		

3/AQUEOUS/

FB-020503	RB-020403	RB-020503

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0215, consists of twenty-two (22) soil environmental samples, one (1) field blank, and two (2) rinse blanks. One (1) field duplicate pair (FTA-SU-DUP3 / FTA-SU-114-0204) is included in this SDG.

All samples were analyzed for target analyte list (TAL) metals. Samples FTA-SS-112, FTA-SS-113, FTA-SS-114, FTA-SS-115, FTA-SS-116, FTA-SS-117, and FTA-SS-118 were also analyzed for pH and grain size. The samples were collected by Tetra Tech NUS February 5, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Due to the large number of samples, the metals results were arranged by the laboratory into three (3) separate SDGs (B0215A, B0215B, and B0215C). Analyses of grain size were subcontracted to RI Analytical Laboratories and submitted with this SDG. Results for grain size were not entered into the database. Analyses of total organic carbon (TOC) were subcontracted to Severn Trent Laboratories Burlington and will be submitted in a separate SDG. Metals analyses except mercury were conducted using SW846 method 6010B. Soil mercury analyses were conducted using SW846 method 7471A. Aqueous mercury analyses were conducted using SW846 method 7470A. pH analyses were conducted using SW846 method 9045C. Grain size analyses were conducted using method ASTM D422.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS)

results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, field duplicate results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Antimony	7.5 ug/L	1.875 mg/kg
Barium[(1)]	1.382 mg/kg	6.910 mg/kg
Barium[(2)]	0.385 mg/kg	1.925 mg/kg
Calcium[(1)]	22.385 mg/kg	111.925 mg/kg
Calcium[(2)]	13.776 mg/kg	68.880 mg/kg
Chromium[(1)]	0.14 mg/kg	0.70 mg/kg
Cobalt[(1)]	0.089 mg/kg	0.445 mg/kg
Cobalt[(2)]	0.058 mg/kg	0.29 mg/kg
Copper[(1)]	1.907 mg/kg	9.535 mg/kg
Copper	11.7 ug/L	2.925 mg/kg
Iron[(1)]	3.047 mg/kg	15.235 mg/kg
Iron[(2)]	1.469 mg/kg	7.345 mg/kg
Manganese[(1)]	0.336 mg/kg	1.680 mg/kg
Manganese[(2)]	0.271 mg/kg	1.355 mg/kg
Nickel[(1)]	0.151 mg/kg	0.755 mg/kg
Nickel[(2)]	0.117 mg/kg	0.585 mg/kg
Potassium	512.9 ug/L	128.2 mg/kg
Sodium	305.1 ug/L	76.28 mg/kg
Zinc[(1)]	0.925 mg/kg	4.625 mg/kg
Zinc	7.1 ug/L	1.8 mg/kg

[(1)] Maximum concentration present in soil preparation blank from SDG B0215B.
[(2)] Maximum concentration present in soil preparation blank from SDG B0215C.

SDG B0215B includes samples FTA-SS-112, FTA-SS-113, FTA-SS-114, FTA-SS-115, FTA-SS-116, FTA-SU-112-0204, FTA-SU-112-0709, FTA-SU-113-0204, FTA-SU-113-0709, FTA-SU-114-0204, FTA-SU-114-0709, FTA-SU-115-0204, FTA-SU-115-0810, FTA-SU-116-0204, and FTA-SU-DUP3.

SDG B0215C includes samples FTA-SS-117, FTA-SS-118, FTA-SU-116-0709, FTA-SU-117-0204, FTA-SU-117-0709, FTA-SU-118-0204, and FTA-SU-118-0709.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, barium, calcium, cobalt, copper, iron, nickel, potassium, sodium, and zinc were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetects. The field blank and rinse blanks were not qualified for laboratory blank contamination and were not used to qualify environmental samples.

- The interfering analyte aluminum was present in samples FTA-SS-115, FTA-SU-112-0204, and FTA-SU-113-0709 at concentrations comparable to the concentration of aluminum in the interference check sample (ICS) solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for selenium, silver, and thallium in the affected samples. The positive result reported for thallium was qualified as biased high (K). The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The interfering analyte aluminum was present in samples FTA-SU-114-0204, FTA-SU-116-0709, FTA-SU-118-0204, and FTA-SU-DUP3 at concentrations comparable to the concentration of aluminum in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for selenium and silver in the affected samples. The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The interfering analyte aluminum was present in sample FTA-SU-114-0709 at a concentration comparable to the concentration of aluminum in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for antimony, selenium, silver, and thallium in the affected sample. The positive result reported for thallium was qualified as biased high (K). The nondetected results reported for antimony, selenium, and silver were qualified as biased low (UL).

- The matrix spike percent recovery (%R) was below the 75% control limit for antimony, affecting samples in SDG B0215B. Nondetected results reported for antimony were qualified as biased low (UL).

- The ICP serial dilution percent difference (%D) was below the 10% control limit and the initial sample concentration was >50X the IDL for manganese, affecting samples in SDG B0215B. Positive results reported for manganese were qualified as estimated (J).

Notes

The sample IDs with the prefix "FTA-SU" were reported incorrectly by the laboratory as "FTA-SV". The data reviewer amended the database for these samples.

Sample FTA-SU-118-0709 was reported incorrectly by the laboratory as FTA-SV-118-070. The data reviewer amended the database for this sample.

Barium, chromium, manganese, and nickel were present in field blank FB-020503.

Barium, chromium, copper, manganese, nickel, potassium, and sodium were present in rinse blank RB-020403.

Barium, chromium, manganese, and nickel were present in rinse blank RB-020503.

The laboratory did not report the results for the analytes in the ICSA solution. The data reviewer used the raw data to check the levels of analytes in the solution so interference effects could be determined.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: Several analytes were qualified due to ICS interference. Antimony was qualified due to matrix spike noncompliance. Manganese was qualified due to ICP serial dilution noncompliance.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
J	-	Positive result is considered estimated as a result of technical noncompliance.
K	-	Positive result is considered biased high as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SS-112	nsample	FTA-SS-113	nsample	FTA-SS-114
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-03A	lab_id	B0215-06A	lab_id	B0215-09A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	85	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3090		
ANTIMONY	0.57	B	A
ARSENIC	1.2		
BARIUM	15.8		
BERYLLIUM	0.21		
CADMIUM	0.055		
CALCIUM	180		
CHROMIUM	3.5		
COBALT	1.1		
COPPER	2.8	B	A
IRON	2900		
LEAD	7.1		
MAGNESIUM	275		
MANGANESE	49.8	J	I
MERCURY	0.022		
NICKEL	2.1		
POTASSIUM	152		
SELENIUM	0.44	U	
SILVER	0.098	U	
SODIUM	8.6	B	A
THALLIUM	0.15	U	
VANADIUM	6.3		
ZINC	11.6		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3310		
ANTIMONY	0.65	B	A
ARSENIC	1.4		
BARIUM	5.4	B	A
BERYLLIUM	0.15		
CADMIUM	0.053		
CALCIUM	79.4	B	A
CHROMIUM	9.3		
COBALT	0.52		
COPPER	4.0	B	A
IRON	2370		
LEAD	30.3		
MAGNESIUM	170		
MANGANESE	15.9	J	I
MERCURY	0.016	U	
NICKEL	2.4		
POTASSIUM	113	B	A
SELENIUM	0.47	U	
SILVER	0.10	U	
SODIUM	4.3	U	
THALLIUM	0.16	U	
VANADIUM	10.8		
ZINC	7.1		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4590		
ANTIMONY	0.28	B	A
ARSENIC	1.3		
BARIUM	12.4		
BERYLLIUM	0.19		
CADMIUM	0.033	U	
CALCIUM	203		
CHROMIUM	4.5		
COBALT	0.65		
COPPER	2.6	B	A
IRON	2570		
LEAD	15.4		
MAGNESIUM	264		
MANGANESE	41.2	J	I
MERCURY	0.017	U	
NICKEL	1.9		
POTASSIUM	209		
SELENIUM	0.43	U	
SILVER	0.095	U	
SODIUM	5.1	B	A
THALLIUM	0.14	U	
VANADIUM	6.0		
ZINC	11.4		

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SS-115	nsample	FTA-SS-116	nsample	FTA-SS-117
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-13A	lab_id	B0215-16A	lab_id	B0215-19A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	89	Pct_Solids	90	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5950		
ANTIMONY	0.32	B	A
ARSENIC	1.2		
BARIUM	17.9		
BERYLLIUM	0.24		
CADMIUM	0.038	U	
CALCIUM	191		
CHROMIUM	5.8		
COBALT	0.80		
COPPER	2.8	B	A
IRON	2650		
LEAD	6.8		
MAGNESIUM	328		
MANGANESE	22.7	J	I
MERCURY	0.018	U	
NICKEL	2.0		
POTASSIUM	283		
SELENIUM	0.49	UL	K
SILVER	0.11	UL	K
SODIUM	4.5	U	
THALLIUM	0.18	K	K
VANADIUM	6.2		
ZINC	5.7		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4490		
ANTIMONY	0.63	B	A
ARSENIC	1.5		
BARIUM	15.8		
BERYLLIUM	0.23		
CADMIUM	0.039		
CALCIUM	254		
CHROMIUM	5.5		
COBALT	1.0		
COPPER	4.1	B	A
IRON	3840		
LEAD	11.2		
MAGNESIUM	321		
MANGANESE	43.9	J	I
MERCURY	0.079		
NICKEL	3.1		
POTASSIUM	199		
SELENIUM	0.48	U	
SILVER	0.11	U	
SODIUM	4.4	U	
THALLIUM	0.16	U	
VANADIUM	8.4		
ZINC	13.5		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4140		
ANTIMONY	0.35	B	A
ARSENIC	2.7		
BARIUM	20.9		
BERYLLIUM	0.24		
CADMIUM	0.38		
CALCIUM	729		
CHROMIUM	6.7		
COBALT	1.1		
COPPER	5.0		
IRON	3980		
LEAD	40.8		
MAGNESIUM	409		
MANGANESE	75.4		
MERCURY	0.061		
NICKEL	3.0		
POTASSIUM	220		
SELENIUM	0.50	U	
SILVER	0.11	U	
SODIUM	4.6	U	
THALLIUM	0.17	U	
VANADIUM	10.7		
ZINC	39.8		

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SS-118	nsample	FTA-SU-112-0204	nsample	FTA-SU-112-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-22A	lab_id	B0215-04A	lab_id	B0215-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	90	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4010		
ANTIMONY	0.15	U	
ARSENIC	1.4		
BARIUM	15.6		
BERYLLIUM	0.21		
CADMIUM	0.086		
CALCIUM	503		
CHROMIUM	4.4		
COBALT	0.92		
COPPER	3.5		
IRON	2660		
LEAD	9.9		
MAGNESIUM	336		
MANGANESE	51.2		
MERCURY	0.018	U	
NICKEL	2.4		
POTASSIUM	189		
SELENIUM	0.45	U	
SILVER	0.10	U	
SODIUM	7.5	B	A
THALLIUM	0.15	U	
VANADIUM	6.7		
ZINC	11.9		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8390		
ANTIMONY	0.29	B	A
ARSENIC	1.4		
BARIUM	27.1		
BERYLLIUM	0.27		
CADMIUM	0.038	U	
CALCIUM	228		
CHROMIUM	11.2		
COBALT	0.57		
COPPER	3.8	B	A
IRON	2330		
LEAD	3.3		
MAGNESIUM	222		
MANGANESE	18.1	J	I
MERCURY	0.020		
NICKEL	2.0		
POTASSIUM	172		
SELENIUM	0.49	UL	K
SILVER	0.11	UL	K
SODIUM	12.0	B	A
THALLIUM	0.26	K	K
VANADIUM	6.3		
ZINC	4.2	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1550		
ANTIMONY	0.16	UL	D
ARSENIC	0.53		
BARIUM	2.8	B	A
BERYLLIUM	0.11		
CADMIUM	0.038	U	
CALCIUM	42.3	B	A
CHROMIUM	1.9		
COBALT	0.16	B	A
COPPER	0.85	B	A
IRON	671		
LEAD	0.77		
MAGNESIUM	66.6		
MANGANESE	3.8	J	I
MERCURY	0.017	U	
NICKEL	0.38	B	A
POTASSIUM	78.7	B	A
SELENIUM	0.48	U	
SILVER	0.11	U	
SODIUM	4.5	U	
THALLIUM	0.19		
VANADIUM	2.5		
ZINC	1.1	B	A

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-113-0204	nsample	FTA-SU-113-0709	nsample	FTA-SU-114-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-07A	lab_id	B0215-08A	lab_id	B0215-10A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	89	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4870		
ANTIMONY	0.33	B	A
ARSENIC	0.97		
BARIUM	10.0		
BERYLLIUM	0.23		
CADMIUM	0.044		
CALCIUM	75.7	B	A
CHROMIUM	5.2		
COBALT	0.61		
COPPER	2.1	B	A
IRON	2170		
LEAD	2.7		
MAGNESIUM	224		
MANGANESE	11.1	J	I
MERCURY	0.019	U	
NICKEL	1.8		
POTASSIUM	167		
SELENIUM	0.51	U	
SILVER	0.11	U	
SODIUM	5.6	B	A
THALLIUM	0.27		
VANADIUM	4.4		
ZINC	3.4	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	7320		
ANTIMONY	0.50	B	A
ARSENIC	3.1		
BARIUM	15.2		
BERYLLIUM	0.32		
CADMIUM	0.033	U	
CALCIUM	174		
CHROMIUM	10.4		
COBALT	0.35	B	A
COPPER	3.1	B	A
IRON	4940		
LEAD	2.7		
MAGNESIUM	428		
MANGANESE	13.6	J	I
MERCURY	0.016	U	
NICKEL	1.3		
POTASSIUM	320		
SELENIUM	0.43	UL	K
SILVER	0.095	UL	K
SODIUM	11.0	B	A
THALLIUM	0.32	K	K
VANADIUM	13.3		
ZINC	3.2	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	6740		
ANTIMONY	0.20	B	A
ARSENIC	1.5		
BARIUM	21.3		
BERYLLIUM	0.29		
CADMIUM	0.033	U	
CALCIUM	184		
CHROMIUM	6.1		
COBALT	1.0		
COPPER	2.7	B	A
IRON	3840		
LEAD	3.9		
MAGNESIUM	316		
MANGANESE	49.0	J	I
MERCURY	0.017	U	
NICKEL	2.7		
POTASSIUM	167		
SELENIUM	0.42	UL	K
SILVER	0.094	UL	K
SODIUM	10.0	B	A
THALLIUM	0.14	U	
VANADIUM	7.7		
ZINC	4.8		

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-114-0709	nsample	FTA-SU-115-0204	nsample	FTA-SU-115-0810
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-11A	lab_id	B0215-14A	lab_id	B0215-15A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	92	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5520		
ANTIMONY	0.16	UL	DK
ARSENIC	1.6		
BARIUM	15.8		
BERYLLIUM	0.29		
CADMIUM	0.037	U	
CALCIUM	90.1	B	A
CHROMIUM	4.8		
COBALT	0.81		
COPPER	1.1	B	A
IRON	1930		
LEAD	2.1		
MAGNESIUM	268		
MANGANESE	40.9	J	I
MERCURY	0.018	U	
NICKEL	0.99		
POTASSIUM	219		
SELENIUM	0.47	UL	K
SILVER	0.10	UL	K
SODIUM	5.7	B	A
THALLIUM	0.18	K	K
VANADIUM	6.5		
ZINC	2.2	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4460		
ANTIMONY	0.36	B	A
ARSENIC	1.3		
BARIUM	20.0		
BERYLLIUM	0.21		
CADMIUM	0.035	U	
CALCIUM	522		
CHROMIUM	4.1		
COBALT	0.95		
COPPER	2.1	B	A
IRON	2740		
LEAD	5.5		
MAGNESIUM	241		
MANGANESE	40.7	J	I
MERCURY	0.10		
NICKEL	1.9		
POTASSIUM	162		
SELENIUM	0.45	U	
SILVER	0.10	U	
SODIUM	10.0	B	A
THALLIUM	0.15	U	
VANADIUM	5.9		
ZINC	10.1		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5370		
ANTIMONY	0.17	B	A
ARSENIC	1.0		
BARIUM	15.0		
BERYLLIUM	0.25		
CADMIUM	0.037	U	
CALCIUM	167		
CHROMIUM	4.6		
COBALT	0.49		
COPPER	1.0	B	A
IRON	1810		
LEAD	1.8		
MAGNESIUM	238		
MANGANESE	21.2	J	I
MERCURY	0.017	U	
NICKEL	1.1		
POTASSIUM	233		
SELENIUM	0.47	U	
SILVER	0.10	U	
SODIUM	4.3	U	
THALLIUM	0.24		
VANADIUM	5.3		
ZINC	2.5	B	A

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-116-0204	nsample	FTA-SU-116-0709	nsample	FTA-SU-117-0204
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-17A	lab_id	B0215-18A	lab_id	B0215-20A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	92	Pct_Solids	89	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5320		
ANTIMONY	0.16	UL	D
ARSENIC	0.94		
BARIUM	12.3		
BERYLLIUM	0.24		
CADMIUM	0.038	U	
CALCIUM	197		
CHROMIUM	5.1		
COBALT	0.70		
COPPER	1.7	B	A
IRON	2460		
LEAD	2.6		
MAGNESIUM	279		
MANGANESE	16.8	J	I
MERCURY	0.018	U	
NICKEL	1.7		
POTASSIUM	210		
SELENIUM	0.49	U	
SILVER	0.11	U	
SODIUM	4.5	U	
THALLIUM	0.17		
VANADIUM	5.7		
ZINC	3.2	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	9310		
ANTIMONY	0.91	B	A
ARSENIC	2.5		
BARIUM	32.1		
BERYLLIUM	0.44		
CADMIUM	0.037	U	
CALCIUM	181		
CHROMIUM	8.0		
COBALT	1.9		
COPPER	2.4	B	A
IRON	3750		
LEAD	3.8		
MAGNESIUM	431		
MANGANESE	150		
MERCURY	0.018	U	
NICKEL	1.8		
POTASSIUM	328		
SELENIUM	0.47	UL	K
SILVER	0.11	UL	K
SODIUM	11.2	B	A
THALLIUM	0.16	U	
VANADIUM	12.0		
ZINC	4.0		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2660		
ANTIMONY	0.16	U	
ARSENIC	0.50		
BARIUM	5.1		
BERYLLIUM	0.14		
CADMIUM	0.037	U	
CALCIUM	74.5		
CHROMIUM	2.5		
COBALT	0.37		
COPPER	0.99	B	A
IRON	1120		
LEAD	1.5		
MAGNESIUM	115		
MANGANESE	7.5		
MERCURY	0.020		
NICKEL	0.96		
POTASSIUM	89.4	B	A
SELENIUM	0.48	U	
SILVER	0.11	U	
SODIUM	4.4	U	
THALLIUM	0.16	U	
VANADIUM	2.4		
ZINC	1.6	B	A

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-117-0709	nsample	FTA-SU-118-0204	nsample	FTA-SU-118-0709
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-21A	lab_id	B0215-23A	lab_id	B0215-24A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	92	Pct_Solids	88	Pct_Solids	94
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4670		
ANTIMONY	0.25	B	A
ARSENIC	1.2		
BARIUM	18.9		
BERYLLIUM	0.24		
CADMIUM	0.036	U	
CALCIUM	116		
CHROMIUM	4.3		
COBALT	0.40		
COPPER	1.6	B	A
IRON	1570		
LEAD	1.7		
MAGNESIUM	207		
MANGANESE	29.5		
MERCURY	0.017	U	
NICKEL	0.88		
POTASSIUM	193		
SELENIUM	0.47	U	
SILVER	0.10	U	
SODIUM	4.3	U	
THALLIUM	0.20		
VANADIUM	5.2		
ZINC	2.2		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	9040		
ANTIMONY	0.41	B	A
ARSENIC	1.4		
BARIUM	27.1		
BERYLLIUM	0.29		
CADMIUM	0.036	U	
CALCIUM	311		
CHROMIUM	5.9		
COBALT	1.0		
COPPER	3.4		
IRON	3970		
LEAD	3.4		
MAGNESIUM	348		
MANGANESE	46.1		
MERCURY	0.015	U	
NICKEL	2.5		
POTASSIUM	228		
SELENIUM	0.47	UL	K
SILVER	0.10	UL	K
SODIUM	4.3	U	
THALLIUM	0.16	U	
VANADIUM	8.1		
ZINC	4.7		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3250		
ANTIMONY	0.25	B	A
ARSENIC	0.98		
BARIUM	7.6		
BERYLLIUM	0.17		
CADMIUM	0.035	U	
CALCIUM	46.0	B	A
CHROMIUM	3.2		
COBALT	0.49		
COPPER	0.51	B	A
IRON	1440		
LEAD	1.3		
MAGNESIUM	163		
MANGANESE	54.3		
MERCURY	0.017	U	
NICKEL	0.55	B	A
POTASSIUM	133		
SELENIUM	0.46	U	
SILVER	0.10	U	
SODIUM	4.2	U	
THALLIUM	0.15	U	
VANADIUM	4.2		
ZINC	1.3	B	A

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-DUP3
samp_date	2/5/2003
lab_id	B0215-12A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	FTA-SU-114-0204

Parameter	Result	Val Qual	Qual Code
ALUMINUM	6180		
ANTIMONY	0.46	B	A
ARSENIC	1.2		
BARIUM	19.2		
BERYLLIUM	0.26		
CADMIUM	0.033	U	
CALCIUM	153		
CHROMIUM	5.8		
COBALT	0.82		
COPPER	2.4	B	A
IRON	3270		
LEAD	3.3		
MAGNESIUM	260		
MANGANESE	30.2	J	I
MERCURY	0.015	U	
NICKEL	2.5		
POTASSIUM	142		
SELENIUM	0.42	UL	K
SILVER	0.093	UL	K
SODIUM	9.1	B	A
THALLIUM	0.14	U	
VANADIUM	6.6		
ZINC	4.6		

PROJ_NO: 4740

SDG: B0215 MEDIA: WATER DATA FRACTION:

nsample	FB-020503
samp_date	2/5/2003
lab_id	B0215-26B
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	7.5		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	1.6		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	8.0	U	
MANGANESE	1.6		
MERCURY	0.13	U	
NICKEL	1.4		
POTASSIUM	78.0	U	
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	83.0	U	
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

nsample	RB-020403
samp_date	2/5/2003
lab_id	B0215-02B
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	10.1		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	1.4		
COBALT	0.90	U	
COPPER	4.8		
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	8.0	U	
MANGANESE	7.8		
MERCURY	0.13	U	
NICKEL	1.2		
POTASSIUM	113		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	129		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

nsample	RB-020503
samp_date	2/5/2003
lab_id	B0215-25B
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	8.5		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	1.4		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	8.0	U	
MANGANESE	9.5		
MERCURY	0.13	U	
NICKEL	1.2		
POTASSIUM	78.0	U	
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	83.0	U	
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: MI

nsample	FTA-SS-112	nsample	FTA-SS-113	nsample	FTA-SS-114
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-03A	lab_id	B0215-06A	lab_id	B0215-09A
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids	85	Pct_Solids	92	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.9		

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.1		

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.1		

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: MI

nsample	FTA-SS-115	nsample	FTA-SS-116	nsample	FTA-SS-117
samp_date	2/5/2003	samp_date	2/5/2003	samp_date	2/5/2003
lab_id	B0215-13A	lab_id	B0215-16A	lab_id	B0215-19A
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids	89	Pct_Solids	90	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.7		

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.1		

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.5		

PROJ_NO: 4740

SDG: B0215 MEDIA: SOIL DATA FRACTION: MI

nsample	FTA-SS-118
samp_date	2/5/2003
lab_id	B0215-22A
qc_type	NM
Pct_Solids	90
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.8		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS112

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL____ Lab Sample ID: B0215-03A_____

Level (low/med): MED Date Received: 02/06/03

% Solids: 85.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3090			P
7440-36-0	Antimony	0.57	B	*N	P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	15.8			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.055	B		P
7440-70-2	Calcium	180			P
7440-47-3	Chromium	3.5			P
7440-48-4	Cobalt	1.1	B	*	P
7440-50-8	Copper	2.8			P
7439-89-6	Iron	2900			P
7439-92-1	Lead	7.1			P
7439-95-4	Magnesium	275			P
7439-96-5	Manganese	49.8		E*	P
7439-97-6	Mercury	0.022	B		CV
7440-02-0	Nickel	2.1	B		P
7440-09-7	Potassium	152			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.098	U		P
7440-23-5	Sodium	8.6	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	6.3			P
7440-66-6	Zinc	11.6			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS113

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-06A

Level (low/med): MED Date Received: 02/06/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3310			P
7440-36-0	Antimony	0.65	B	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	5.4	B		P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.053	B		P
7440-70-2	Calcium	79.4			P
7440-47-3	Chromium	9.3			P
7440-48-4	Cobalt	0.52	B		P
7440-50-8	Copper	4.0			P
7439-89-6	Iron	2370			P
7439-92-1	Lead	30.3			P
7439-95-4	Magnesium	170			P
7439-96-5	Manganese	15.9		E*	P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	113			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.3	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	10.8			P
7440-66-6	Zinc	7.1			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS114

Lab Name: MITKEM_CORPORATION_ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-09A_____

Level (low/med): MED_____ Date Received: 02/06/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4590			P
7440-36-0	Antimony	0.28	B	N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	12.4			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	203			P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	0.65	B		P
7440-50-8	Copper	2.6			P
7439-89-6	Iron	2570			P
7439-92-1	Lead	15.4			P
7439-95-4	Magnesium	264			P
7439-96-5	Manganese	41.2		E*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	209			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	5.1	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	6.0			P
7440-66-6	Zinc	11.4			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS115

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-13A

Level (low/med): MED Date Received: 02/06/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5950			P
7440-36-0	Antimony	0.32	B	*N	P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	17.9			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	191			P
7440-47-3	Chromium	5.8			P
7440-48-4	Cobalt	0.80	B	*PM 2/26/03	P
7440-50-8	Copper	2.8			P
7439-89-6	Iron	2650			P
7439-92-1	Lead	6.8			P
7439-95-4	Magnesium	328			P
7439-96-5	Manganese	22.7		E*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	283			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.5	U		P
7440-28-0	Thallium	0.18	B		P
7440-62-2	Vanadium	6.2			P
7440-66-6	Zinc	5.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS116

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0215B_

Matrix (soil/water): SOIL Lab Sample ID: B0215-16A_____

Level (low/med): MED_____ Date Received: 02/06/03_____

% Solids: 90.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4490			P
7440-36-0	Antimony	0.63	B	N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	15.8			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.039	B		P
7440-70-2	Calcium	254			P
7440-47-3	Chromium	5.5			P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	4.1			P
7439-89-6	Iron	3840			P
7439-92-1	Lead	11.2			P
7439-95-4	Magnesium	321			P
7439-96-5	Manganese	43.9		E*	P
7439-97-6	Mercury	0.079			CV
7440-02-0	Nickel	3.1			P
7440-09-7	Potassium	199			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.4	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	8.4			P
7440-66-6	Zinc	13.5			P
	Cyanide				NR

Color Before: ___ Clarity Before: ___ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS117

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Matrix (soil/water): SOIL Lab Sample ID: B0215-19A

Level (low/med): MED Date Received: 02/06/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4140			P
7440-36-0	Antimony	0.35	B		P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	20.9			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.38			P
7440-70-2	Calcium	729			P
7440-47-3	Chromium	6.7			P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	5.0			P
7439-89-6	Iron	3980			P
7439-92-1	Lead	40.8			P
7439-95-4	Magnesium	409			P
7439-96-5	Manganese	75.4			P
7439-97-6	Mercury	0.061			CV
7440-02-0	Nickel	3.0			P
7440-09-7	Potassium	220			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.6	U		P
7440-28-0	Thallium	0.17	U		P
7440-62-2	Vanadium	10.7			P
7440-66-6	Zinc	39.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTASS118

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Matrix (soil/water): SOIL Lab Sample ID: B0215-22A

Level (low/med): MED Date Received: 02/06/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4010			P
7440-36-0	Antimony	0.15	U		P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	15.6			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.086	B		P
7440-70-2	Calcium	503			P
7440-47-3	Chromium	4.4			P
7440-48-4	Cobalt	0.92	B		P
7440-50-8	Copper	3.5			P
7439-89-6	Iron	2660			P
7439-92-1	Lead	9.9			P
7439-95-4	Magnesium	336			P
7439-96-5	Manganese	51.2			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	2.4	B		P
7440-09-7	Potassium	189			P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	7.5	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	6.7			P
7440-66-6	Zinc	11.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-04A

Level (low/med): MED____ Date Received: 02/06/03____

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8390			P
7440-36-0	Antimony	0.29	B	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	27.1			P
7440-41-7	Beryllium	0.27			P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	228			P
7440-47-3	Chromium	11.2			P
7440-48-4	Cobalt	0.57	B		P
7440-50-8	Copper	3.8			P
7439-89-6	Iron	2330			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	222			P
7439-96-5	Manganese	18.1		E*	P
7439-97-6	Mercury	0.020	B		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	172			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	12.0	B		P
7440-28-0	Thallium	0.26	B		P
7440-62-2	Vanadium	6.3			P
7440-66-6	Zinc	4.2			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120709

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215B_

Matrix (soil/water): SOIL____ Lab Sample ID: B0215-05A____

Level (low/med): MED Date Received: 02/06/03____

% Solids: 91.0____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1550			P
7440-36-0	Antimony	0.16	U	*N	P
7440-38-2	Arsenic	0.53	B		P
7440-39-3	Barium	2.8	B		P
7440-41-7	Beryllium	0.11	B		P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	42.3	B		P
7440-47-3	Chromium	1.9			P
7440-48-4	Cobalt	0.16	B		P
7440-50-8	Copper	0.85	B		P
7439-89-6	Iron	671			P
7439-92-1	Lead	0.77			P
7439-95-4	Magnesium	66.6			P
7439-96-5	Manganese	3.8		E*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.38	B		P
7440-09-7	Potassium	78.7			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.5	U		P
7440-28-0	Thallium	0.19	B		P
7440-62-2	Vanadium	2.5	B		P
7440-66-6	Zinc	1.1	B		P
	Cyanide				NR

Color Before: Clarity Before: _____ Texture:

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130204

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B_

Matrix (soil/water): SOIL____ Lab Sample ID: B0215-07A

Level (low/med): MED Date Received: 02/06/03____

% Solids: 89.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4870			P
7440-36-0	Antimony	0.33	B	N	P
7440-38-2	Arsenic	0.97	B		P
7440-39-3	Barium	10	B		P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.044	B		P
7440-70-2	Calcium	75.7			P
7440-47-3	Chromium	5.2			P
7440-48-4	Cobalt	0.61	B		P
7440-50-8	Copper	2.1			P
7439-89-6	Iron	2170			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	224			P
7439-96-5	Manganese	11.1		E*	P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	167			P
7782-49-2	Selenium	0.51	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	5.6	B		P
7440-28-0	Thallium	0.27	B		P
7440-62-2	Vanadium	4.4			P
7440-66-6	Zinc	3.4			P
	Cyanide				NR

Color Before: Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: Artifacts: _____

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130709

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-08A

Level (low/med): MED Date Received: 02/06/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7320			P
7440-36-0	Antimony	0.50	B	*N	P
7440-38-2	Arsenic	3.1			P
7440-39-3	Barium	15.2			P
7440-41-7	Beryllium	0.32			P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	174			P
7440-47-3	Chromium	10.4			P
7440-48-4	Cobalt	0.35	B	*	P
7440-50-8	Copper	3.1		per atm07	P
7439-89-6	Iron	4940			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	428			P
7439-96-5	Manganese	13.6		E*	P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	320			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	11.0	B		P
7440-28-0	Thallium	0.32	B		P
7440-62-2	Vanadium	13.3			P
7440-66-6	Zinc	3.2			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-10A

Level (low/med): MED Date Received: 02/06/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6740			P
7440-36-0	Antimony	0.20	B	N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	21.3			P
7440-41-7	Beryllium	0.29			P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	184			P
7440-47-3	Chromium	6.1			P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	2.7			P
7439-89-6	Iron	3840			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	316			P
7439-96-5	Manganese	49.0		E*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	2.7			P
7440-09-7	Potassium	167			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.094	U		P
7440-23-5	Sodium	10	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	7.7			P
7440-66-6	Zinc	4.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140709

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-11A

Level (low/med): MED Date Received: 02/06/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5520			P
7440-36-0	Antimony	0.16	U	*N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	15.8			P
7440-41-7	Beryllium	0.29			P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	90.1			P
7440-47-3	Chromium	4.8			P
7440-48-4	Cobalt	0.81	B		P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	1930			P
7439-92-1	Lead	2.1			P
7439-95-4	Magnesium	268			P
7439-96-5	Manganese	40.9		E*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.99	B		P
7440-09-7	Potassium	219			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	5.7	B		P
7440-28-0	Thallium	0.18	B		P
7440-62-2	Vanadium	6.5			P
7440-66-6	Zinc	2.2	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: Texture: _____

Color After: Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-14A

Level (low/med): MED Date Received: 02/06/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4460			P
7440-36-0	Antimony	0.36	B	*N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	20.0			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	522			P
7440-47-3	Chromium	4.1			P
7440-48-4	Cobalt	0.95	B	*	P
7440-50-8	Copper	2.1			P
7439-89-6	Iron	2740			P
7439-92-1	Lead	5.5			P
7439-95-4	Magnesium	241			P
7439-96-5	Manganese	40.7		E*	P
7439-97-6	Mercury	0.10			CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	162			P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	10.0	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	5.9			P
7440-66-6	Zinc	10.1			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1150810

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-15A

Level (low/med): MED Date Received: 02/06/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5370			P
7440-36-0	Antimony	0.17	B	N	P
7440-38-2	Arsenic	1.0	B		P
7440-39-3	Barium	15.0			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	167			P
7440-47-3	Chromium	4.6			P
7440-48-4	Cobalt	0.49	B		P
7440-50-8	Copper	1.0	B		P
7439-89-6	Iron	1810			P
7439-92-1	Lead	1.8			P
7439-95-4	Magnesium	238			P
7439-96-5	Manganese	21.2		E*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	233			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.3	U		P
7440-28-0	Thallium	0.24	B		P
7440-62-2	Vanadium	5.3			P
7440-66-6	Zinc	2.5	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B_

Matrix (soil/water): SOIL Lab Sample ID: B0215-17A

Level (low/med): MED Date Received: 02/06/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5320			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	0.94	B		P
7440-39-3	Barium	12.3			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	197			P
7440-47-3	Chromium	5.1			P
7440-48-4	Cobalt	0.70	B		P
7440-50-8	Copper	1.7			P
7439-89-6	Iron	2460			P
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium	279			P
7439-96-5	Manganese	16.8		E*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	210			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.5	U		P
7440-28-0	Thallium	0.17	B		P
7440-62-2	Vanadium	5.7			P
7440-66-6	Zinc	3.2			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160709

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C

Matrix (soil/water): SOIL Lab Sample ID: B0215-18A

Level (low/med): MED Date Received: 02/06/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9310			P
7440-36-0	Antimony	0.91	B		P
7440-38-2	Arsenic	2.5			P
7440-39-3	Barium	32.1			P
7440-41-7	Beryllium	0.44			P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	181			P
7440-47-3	Chromium	8.0			P
7440-48-4	Cobalt	1.9	B		P
7440-50-8	Copper	2.4			P
7439-89-6	Iron	3750			P
7439-92-1	Lead	3.8			P
7439-95-4	Magnesium	431			P
7439-96-5	Manganese	150			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	328			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	11.2	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	12.0			P
7440-66-6	Zinc	4.0			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Matrix (soil/water): SOIL Lab Sample ID: B0215-20A

Level (low/med): MED Date Received: 02/06/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2660			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	0.50	B		P
7440-39-3	Barium	5.1	B		P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	74.5			P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	0.37	B		P
7440-50-8	Copper	0.99	B		P
7439-89-6	Iron	1120			P
7439-92-1	Lead	1.5			P
7439-95-4	Magnesium	115			P
7439-96-5	Manganese	7.5			P
7439-97-6	Mercury	0.020	B		CV
7440-02-0	Nickel	0.96	B		P
7440-09-7	Potassium	89.4			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	4.4	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	1.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

I
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1170709

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C_

Matrix (soil/water): SOIL Lab Sample ID: B0215-21A_____

Level (low/med): MED____ Date Received: 02/06/03____

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4670			P
7440-36-0	Antimony	0.25	B		P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	18.9			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.036	U		P
7440-70-2	Calcium	116			P
7440-47-3	Chromium	4.3			P
7440-48-4	Cobalt	0.40	B		P
7440-50-8	Copper	1.6			P
7439-89-6	Iron	1570			P
7439-92-1	Lead	1.7			P
7439-95-4	Magnesium	207			P
7439-96-5	Manganese	29.5			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.88	B		P
7440-09-7	Potassium	193			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.3	U		P
7440-28-0	Thallium	0.20	B		P
7440-62-2	Vanadium	5.2			P
7440-66-6	Zinc	2.2	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C_

Matrix (soil/water): SOIL Lab Sample ID: B0215-23A

Level (low/med): MED Date Received: 02/06/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9040			P
7440-36-0	Antimony	0.41	B		P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	27.1			P
7440-41-7	Beryllium	0.29			P
7440-43-9	Cadmium	0.036	U		P
7440-70-2	Calcium	311			P
7440-47-3	Chromium	5.9			P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	3.4			P
7439-89-6	Iron	3970			P
7439-92-1	Lead	3.4			P
7439-95-4	Magnesium	348			P
7439-96-5	Manganese	46.1			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	228			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.3	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	8.1			P
7440-66-6	Zinc	4.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV118070

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Matrix (soil/water): SOIL Lab Sample ID: B0215-24A

Level (low/med): MED Date Received: 02/06/03

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3250			P
7440-36-0	Antimony	0.25	B		P
7440-38-2	Arsenic	0.98	B		P
7440-39-3	Barium	7.6	B		P
7440-41-7	Beryllium	0.17	B		P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	46.0			P
7440-47-3	Chromium	3.2			P
7440-48-4	Cobalt	0.49	B		P
7440-50-8	Copper	0.51	B		P
7439-89-6	Iron	1440			P
7439-92-1	Lead	1.3			P
7439-95-4	Magnesium	163			P
7439-96-5	Manganese	54.3			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.55	B		P
7440-09-7	Potassium	133			P
7782-49-2	Selenium	0.46	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.2	U		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	4.2			P
7440-66-6	Zinc	1.3	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP3

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Lab Sample ID: B0215-12A

Level (low/med): MED Date Received: 02/06/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6180			P
7440-36-0	Antimony	0.46	B	N	P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	19.2			P
7440-41-7	Beryllium	0.26			P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	153			P
7440-47-3	Chromium	5.8			P
7440-48-4	Cobalt	0.82	B		P
7440-50-8	Copper	2.4			P
7439-89-6	Iron	3270			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	260			P
7439-96-5	Manganese	30.2		E*	P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	2.5			P
7440-09-7	Potassium	142			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.093	U		P
7440-23-5	Sodium	9.1	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	6.6			P
7440-66-6	Zinc	4.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-020503

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Matrix (soil/water): WATER Lab Sample ID: B0215-26B

Level (low/med): MED Date Received: 02/06/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	7.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	1.6	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.4	B		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020403

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Matrix (soil/water): WATER Lab Sample ID: B0215-02B

Level (low/med): MED Date Received: 02/06/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	10.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.4	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.8	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	7.8	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.2	B		P
7440-09-7	Potassium	113	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	129	B		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020503

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Matrix (soil/water): WATER Lab Sample ID: B0215-25B

Level (low/med): MED Date Received: 02/06/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	8.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.4	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	9.5	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.2	B		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Percent Moisture and Percent Solids Report

Mitkem Sample ID	Client Sample ID	Analyzed	Percent Moisture	Percent Solids	Validated
B0215-03A	FTA-SS-112	02/10/2003	15	85	No
B0215-04A	FTA-SV-112-0204	02/10/2003	9	91	No
B0215-05A	FTA-SV-112-0709	02/10/2003	9	91	No
B0215-06A	FTA-SS-113	02/10/2003	8	92	No
B0215-07A	FTA-SV-113-0204	02/10/2003	11	89	No
B0215-08A	FTA-SV-113-0709	02/10/2003	8	92	No
B0215-09A	FTA-SS-114	02/10/2003	9	91	No
B0215-10A	FTA-SV-114-0204	02/10/2003	9	91	No
B0215-11A	FTA-SV-114-0709	02/10/2003	8	92	No
B0215-12A	FTA-SV-DUP3	02/10/2003	10	90	No
B0215-13A	FTA-SS-115	02/10/2003	11	89	No
B0215-14A	FTA-SV-115-0204	02/10/2003	9	91	No
B0215-15A	FTA-SV-115-0810	02/10/2003	9	91	No
B0215-16A	FTA-SS-116	02/10/2003	10	90	No
B0215-17A	FTA-SV-116-0204	02/10/2003	8	92	No
B0215-18A	FTA-SV-116-0709	02/10/2003	11	89	No
B0215-19A	FTA-SS-117	02/10/2003	14	86	No
B0215-20A	FTA-SV-117-0204	02/10/2003	10	90	No
B0215-21A	FTA-SV-117-0709	02/10/2003	8	92	No
B0215-22A	FTA-SS-118	02/10/2003	10	90	No
B0215-23A	FTA-SV-118-0204	02/10/2003	12	88	No
B0215-24A	FTA-SV-118-070	02/10/2003	6	94	No

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS112
Lab Order:	B0215	**Tag Number:**	FTA-SS-112
Project:	Wallops Island	**Collection Date:**	2/5/03 8:00:00 AM
Lab ID:	B0215-03A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	5.9	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS113
Lab Order:	B0215	**Tag Number:**	FTA-SS-113
Project:	Wallops Island	**Collection Date:**	2/5/03 8:46:00 AM
Lab ID:	B0215-06A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	5.1	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS114
Lab Order:	B0215	**Tag Number:**	FTA-SS-114
Project:	Wallops Island	**Collection Date:**	2/5/03 9:22:00 AM
Lab ID:	B0215-09A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.1	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS115
Lab Order:	B0215	**Tag Number:**	FTA-SS-115
Project:	Wallops Island	**Collection Date:**	2/5/03 10:30:00 AM
Lab ID:	B0215-13A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.7	1.0		pH Units	1	02/11/03 0:00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS116
Lab Order:	B0215	**Tag Number:**	FTA-SS-116
Project:	Wallops Island	**Collection Date:**	2/5/03 11:28:00 AM
Lab ID:	B0215-16A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.1	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS117
Lab Order:	B0215	**Tag Number:**	FTA-SS-117
Project:	Wallops Island	**Collection Date:**	2/5/03 12:10:00 PM
Lab ID:	B0215-19A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.5	1.0		pH Units	1	02/11/03 0:00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	FTASS118
Lab Order:	B0215	**Tag Number:**	FTA-SS-118
Project:	Wallops Island	**Collection Date:**	2/5/03 12:48:00 PM
Lab ID:	B0215-22A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.8	1.0		pH Units	1	02/11/03 0:00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 1 B0215-03B GRAB 02/05/03 @0800

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.35	99.65
No. 10	1.02	98.63
No. 20	5.03	93.60
No. 40	13.57	80.03
No. 60	16.03	64.00
No. 140	49.55	14.45
No. 200	4.85	9.60

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 2 B0215-06B GRAB 02/05/03 @0846

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.24	98.76
No. 10	1.09	97.67
No. 20	7.17	90.50
No. 40	22.05	68.45
No. 60	33.33	35.12
No. 140	31.00	4.12
No. 200	2.02	2.10

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 3 B0215-09B GRAB 02/05/03 @0922

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	0.62	99.38
No. 20	2.53	96.85
No. 40	14.13	82.72
No. 60	25.31	57.41
No. 140	51.80	5.61
No. 200	2.82	2.79

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 4 B0215-13B GRAB 02/05/03 @1030

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.01	99.99
No. 10	0.10	99.89
No. 20	0.87	99.02
No. 40	5.21	93.81
No. 60	17.07	76.74
No. 140	71.09	5.65
No. 200	3.43	2.22

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 5 B0215-16B GRAB 02/05/03 @1128

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.41	99.59
No. 10	1.25	98.34
No. 20	2.79	95.55
No. 40	7.37	88.18
No. 60	16.04	72.14
No. 140	61.24	10.90
No. 200	4.51	6.39

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 6 B0315-19B 02/05/03 @1210

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.44	99.56
No. 10	0.39	99.17
No. 20	1.43	97.74
No. 40	7.19	90.55
No. 60	16.28	74.27
No. 140	61.63	12.64
No. 200	5.06	7.58

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1753
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 7 B0215-22B GRAB 02/05/03 @1210

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	0.55	99.45
No. 20	1.26	98.19
No. 40	6.79	91.40
No. 60	15.05	76.35
No. 140	68.73	7.62
No. 200	4.11	3.51

APPENDIX C

SUPPORT DOCUMENTATION

B0215

HOLDING TIME

04/29/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FB-020503	B0215-26B	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-112	B0215-03A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-113	B0215-06A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-114	B0215-09A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-115	B0215-13A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-116	B0215-16A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-117	B0215-19A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-118	B0215-22A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-116-0204DUP	B0215-17ADUP	DUPLICATE	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SV-118-070	B0215-24A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
%	LCSS	0210LCSS	LCS	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
%	LCSS1	0210LCSS	LCS	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
%	LCSW	0210LCSW	LCS	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS1	0210PBS	M_BLANK	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	PBW	0210PBW	M_BLANK	B0215	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020403	B0215-02B	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
UG/L	RB-020503	B0215-25B	NORMAL	B0215	HG	02/05/03	02/10/03	02/11/03	5	1	6
UG/L	FB-020503	B0215-26B	NORMAL	B0215	M	02/05/03	02/10/03	02/11/03	5	1	6
MG/KG	FTA-SS-112	B0215-03A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-113	B0215-06A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-114	B0215-09A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-115	B0215-13A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-116	B0215-16A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-117	B0215-19A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SS-118	B0215-22A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-116-0204DUP	B0215-17ADUP	DUPLICATE	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTA-SV-116-0204L	B0215-17AL	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-118-070	B0215-24A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
MG/KG	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	M	02/05/03	02/10/03	02/10/03	5	0	5
%	LCSS	0210LCSS	LCS	B0215	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSS1	0210LCSS	LCS	B0215	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSW	0210LCSW	LCS	B0215	M	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0215	M	/ /	02/10/03	02/10/03	0	0	0
MG/KG	PBS1	0210PBS	M_BLANK	B0215	M	/ /	02/10/03	02/10/03	0	0	0
UG/L	PBW	0210PBW	M_BLANK	B0215	M	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020403	B0215-02B	NORMAL	B0215	M	02/05/03	02/10/03	02/11/03	5	1	6
UG/L	RB-020503	B0215-25B	NORMAL	B0215	M	02/05/03	02/10/03	02/11/03	5	1	6
%	FB-020503	B0215-26C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
%	FTA-SS-112	B0215-03A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SS-113	B0215-06A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-114	B0215-09A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SS-115	B0215-13A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SS-116	B0215-16A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-117	B0215-19A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SS-118	B0215-22A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	OS	02/05/03	02/19/03	02/28/03	14	9	23
%	FTA-SV-113-0709RE	B0215-08ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	OS	02/05/03	02/19/03	03/01/03	14	10	24
%	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0204MSD	B0215-17AMSD	MSD	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	OS	02/05/03	02/19/03	03/03/03	14	12	26
%	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	OS	02/05/03	02/19/03	03/04/03	14	13	27
%	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-0204RE	B0215-23ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-118-070	B0215-24A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	FTA-SV-118-070RE	B0215-24ARE	NORMAL	B0215	OS	02/05/03	03/10/03	03/11/03	33	1	34
%	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	OS	02/05/03	02/19/03	03/02/03	14	11	25
%	RB-020403	B0215-02C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
%	RB-020503	B0215-25C	NORMAL	B0215	OS	02/05/03	02/06/03	02/12/03	1	6	7
%	SBLK1C	MB-5501	M_BLANK	B0215	OS	/ /	02/06/03	02/11/03	0	5	0
%	SBLK1CLCS	LCS-5501	LCS	B0215	OS	/ /	02/06/03	02/11/03	0	5	0
%	SBLK2B	MB-5703	M_BLANK	B0215	OS	/ /	02/19/03	02/25/03	0	6	0
%	SBLK2BLCS	LCS-5703	LCS	B0215	OS	/ /	02/19/03	02/25/03	0	6	0
%	SBLK2F	MB-5702	M_BLANK	B0215	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2FLCS	LCS-5702	LCS	B0215	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2P	MB-6006	M_BLANK	B0215	OS	/ /	03/10/03	03/11/03	0	1	0
%	SBLK2PLCS	LCS-6006	LCS	B0215	OS	/ /	03/10/03	03/11/03	0	1	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FB-020503	B0215-26A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
UG/KG	FTA-SS-112	B0215-03C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-113	B0215-06C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-114	B0215-09C	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SS-115	B0215-13C	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SS-116	B0215-16C	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SS-117	B0215-19C	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SS-118	B0215-22C	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-112-0204	B0215-04B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-112-0709	B0215-05B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-113-0204	B0215-07B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-113-0709	B0215-08B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-114-0204	B0215-10B	NORMAL	B0215	OV	02/05/03	02/10/03	02/10/03	5	0	5
%	FTA-SV-114-0709	B0215-11B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-115-0204	B0215-14B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-115-0810	B0215-15B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-116-0204	B0215-17B	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-116-0204MS	B0215-17BMS	MS	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-116-0204MSD	B0215-17BMSD	MSD	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-116-0709	B0215-18B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-117-0204	B0215-20B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-117-0709	B0215-21B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-118-0204	B0215-23B	NORMAL	B0215	OV	02/05/03	02/12/03	02/12/03	7	0	7
%	FTA-SV-118-070	B0215-24B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	FTA-SV-DUP3	B0215-12B	NORMAL	B0215	OV	02/05/03	02/11/03	02/11/03	6	0	6
%	RB-020403	B0215-02A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
%	RB-020503	B0215-25A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	TB-020503	B0215-01A	NORMAL	B0215	OV	02/05/03	02/14/03	02/14/03	9	0	9
%	VBLK1P	V1B0210A	M_BLANK	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1PLCS	V1L0210A	LCS	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1PLCSD	V1L0210B	LCSD	B0215	OV	/ /	02/10/03	02/10/03	0	0	0
%	VBLK1Q	V1B0211A	M_BLANK	B0215	OV	/ /	02/11/03	02/11/03	0	0	0
%	VBLK1QLCS	V1L0211A	LCS	B0215	OV	/ /	02/11/03	02/11/03	0	0	0
%	VBLK1R	V1B0212A	M_BLANK	B0215	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK1RLCS	V1L0212A	LCS	B0215	OV	/ /	02/12/03	02/12/03	0	0	0
UG/L	VBLK6E	V6B0214A	M_BLANK	B0215	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK6ELCS	V6L0214A	LCS	B0215	OV	/ /	02/14/03	02/14/03	0	0	0
%	BBLK1C	MB-5498	M_BLANK	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1CLCS	LCS-5498	LCS	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1CLCSD	LCSD-5498	LCSD	B0215	PCB	/ /	02/06/03	02/07/03	0	1	0
%	BBLK1H	MB-5670	M_BLANK	B0215	PCB	/ /	02/18/03	02/20/03	0	2	0
%	BBLK1HLCS	LCS-5670	LCS	B0215	PCB	/ /	02/18/03	02/20/03	0	2	0
%	BBLK1I	MB-5689	M_BLANK	B0215	PCB	/ /	02/18/03	02/21/03	0	3	0
%	BBLK1ILCS	LCS-5689	LCS	B0215	PCB	/ /	02/18/03	02/21/03	0	3	0
UG/L	FB-020503	B0215-26C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
%	FTA-SS-112	B0215-03A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SS-113	B0215-06A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SS-114	B0215-09A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-115	B0215-13A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-116	B0215-16A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-117	B0215-19A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SS-118	B0215-22A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-112-0204	B0215-04A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-112-0709	B0215-05A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTA-SV-113-0204	B0215-07A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-113-0709	B0215-08A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/20/03	13	2	15
%	FTA-SV-114-0204	B0215-10A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-114-0709	B0215-11A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-115-0204	B0215-14A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-115-0810	B0215-15A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204	B0215-17A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204MS	B0215-17AMS	MS	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0204MSD	B0215-17AMSD	MSD	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-116-0709	B0215-18A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-117-0204	B0215-20A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-117-0709	B0215-21A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	FTA-SV-118-0204	B0215-23A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-118-070	B0215-24A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/22/03	13	4	17
%	FTA-SV-DUP3	B0215-12A	NORMAL	B0215	PCB	02/05/03	02/18/03	02/21/03	13	3	16
%	RB-020403	B0215-02C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
UG/L	RB-020503	B0215-25C	NORMAL	B0215	PCB	02/05/03	02/06/03	02/11/03	1	5	6
S.U.	FTA-SS-112	B0215-03A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-113	B0215-06A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-114	B0215-09A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-115	B0215-13A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-116	B0215-16A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-117	B0215-19A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6
S.U.	FTA-SS-118	B0215-22A	NORMAL	B0215	PH	02/05/03	02/11/03	02/11/03	6	0	6

MITKEM CORPORATION
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0215
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl VOC + MTBE	40z Amber glass SVOC + PCB	40z Amber glass TAL Metals + pH	40z Amber glass TCL + % Moisture	40z Amber glass Grain Size	8 oz Amber glass Encore sampler VOC + MTBE	40z Amber glass TAL Metals + % Moisture	1 Liter Amber glass SVOC	1 Liter Amber glass PCB	500 ml poly HNO3 TAL Metals	COMMENTS
TB-020503	2/5/03 / 0700		X	X			01	2	2										
RB-020403	2/5/03 / 0725		X	X			02	7	2						2	2	1		
FTA-SS-112	2/5/03 / 0800		X		X		03	7		1	1	1	1	3					
FTA-SU-112-0204	2/5/03 / 0815		X		X		04	5		1				3	1				
FTA-SU-112-0709	2/5/03 / 0830		X		X		05	5		1				3	1				
FTA-SS-113	2/5/03 / 0846		X		X		06	7		1	1	1	1	3					
FTA-SU-113-0204	2/5/03 / 0858		X		X		07	5		1				3	1				
FTA-SU-113-0709	2/5/03 / 0909		X		X		08	5		1				3	1				
FTA-SS-114	2/5/03 / 0922		X		X		09	7		1	1	1	1	3					
FTA-SU-114-0204	2/5/03 / 0935		X		X		10	5		1				3	1				
FTA-SU-114-0709	2/5/03 / 0955		X		X		11	5		1				3	1				
FTA-SU-Dup3	2/5/03 / 0940		X		X		12	5		1				3	1				

TSP#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Wagner	2/5/03 / 1700		2-6-03 / 0900	shipped via Fed Ex	5°
	0022	/		/	Airbill NO	
		/		/	8286 8470 7100	

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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9888	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0215
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 5 gram Encore Sampler; VOC + MTBE 40ml Amber Glass; SVOC + PCB 40ml Amber Glass; TAL Metals + pH 40ml Amber Glass; TAL Metals % Moisture 8oz Amber Glass; 40ml Amber Glass; TAL Metals % Moisture	COMMENTS
FTA-SS-115	2/5/03 / 1030		X		X		13	7	3 1 1✓ 1 1	
FTA-SU-115-0204	2/5/03 / 1044		X		X		14	5	3 1 1✓	
FTA-SU-115-0810	2/5/03 / 1115		X		X		15	5	3 1 1✓	
FTA-SS-116	2/5/03 / 1128		X		X		16	7	3 1 1✓ 1 1	
FTA-SU-116-0204	2/5/03 / 1138		X		X		17	15	9 3 3✓	DO MS/MSD
FTA-SU-116-0709	2/5/03 / 1157		X		X		18	5	3 1 1✓	
FTA-SS-117	2/5/03 / 1210		X		X		19	7	3 1 1✓ 1 1	
FTA-SU-117-0204	2/5/03 / 1222		X		X		20	5	3 1 1✓	
FTA-SU-117-0709	2/5/03 / 1235		X		X		21	5	3 1 1✓	
FTA-SS-118	2/5/03 / 1248		X		X		22	7	3 1 1✓ 1 1	
FTA-SU-118-0204	2/5/03 / 1300		X		X		23	5	3 1 1✓	
FTA-SU-118-070	2/5/03 / 1315		X		X		24	5	3 1 1✓	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/5/03 / 1700	[signature]	2-6-03 / 0900	Shipped Via Fed Ex Airbill NO 8286 5470 7100	
	023	/		/		
		/		/		

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Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0215
NAME: Garth Glenn	FAX: 610 4919645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl	VOC + MTBE	Liter Amber Glass SVOC	1 Liter Amber Glass PCB	500 ml Poly HNO3 TAL Metals	COMMENTS
RB-020503	2/5/03 1400		X	X			25	7	2	2	2	1 ✓		
FB-020503	2/5/03 1515		X	X			26	7	2	2	2	1 ✓		
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	2/5/03 1700	D Rothenhoefer	2-6-03 0900	Shipped Via FedEx 8286 64 70 7100	
	0024	/		/		
		/		/		

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Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0215

Mitkem Project ID: B0215

March 19, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for four aqueous and twenty-two soil samples that were collected on February 5, 2003, and received at Mitkem on February 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of vinyl chloride, bromomethane, chloroethane and trichlorofluoromethane in V6ELCS and high recovery of chloroethane in V1QLCS and V1PLCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of high recovery of chloroethane in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of several surrogates in samples SV1130709, SV1180204 and SV118070. The samples were re-extracted and analyzed with surrogate recoveries within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2-methylphenol, 4-methylphenol, 3-nitroaniline and 3,3'-dichlorobenzidine in S1CLCS, high recovery of 4-nitroaniline and carbazole in S2FLCS and low recovery of di-n-octylphthalate in S2PLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dinitrophenol.

Sample analysis: samples SV1130709, SV1180204 and SV118070 were re-extracted outside of hold time. The initial extraction was within hold time but had non-compliant surrogate recoveries. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1160204. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a low reporting limit. These samples were extracted with samples requiring a lower reporting limit. No other unusual observation was made for the analysis.

5. Metals Analysis (SDG A):

Due to the large number of samples, metals results are arranged into three Sample Delivery Groups, SDG B0215A, B0215B and B0215C. Matrix spike/duplicate analysis was performed where required. Results are qualified where necessary for those samples associated with each spike/duplicate. Raw analysis data for all SDGs follow Form 14 for SDG B0215C.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. Metals Analysis (SDG B):

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1160204. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1160204. Replicate RPDs were within the QC limits with the exception of manganese. Manganese is flagged with an "*" on Form 1's.

Sample analysis: manganese was outside of QC limits in the serial dilution. Manganese is flagged with an "E" flag on Form 1's. No other unusual observation was made for the analysis.

7. Metals Analysis (SDG C):

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

8. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

9. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

10. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/19/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0215

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0215-01A	TB-020503	
B0215-02A	RB-020403	
B0215-02B	RB-020403	
B0215-02C	RB-020403	
B0215-03A	FTASS112	FTA-SS-112
B0215-03B	FTASS112	FTA-SS-112
B0215-03C	FTASS112	FTA-SS-112
B0215-04A	SV1120204	FTA-SV-112-0204
B0215-04B	SV1120204	FTA-SV-112-0204
B0215-05A	SV1120709	FTA-SV-112-0709
B0215-05B	SV1120709	FTA-SV-112-0709
B0215-06A	FTASS113	FTA-SS-113
B0215-06B	FTASS113	FTA-SS-113
B0215-06C	FTASS113	FTA-SS-113
B0215-07A	SV1130204	FTA-SV-113-0204
B0215-07B	SV1130204	FTA-SV-113-0204
B0215-08A	SV1130709	FTA-SV-113-0709
B0215-08B	SV1130709	FTA-SV-113-0709
B0215-09A	FTASS114	FTA-SS-114
B0215-09B	FTASS114	FTA-SS-114
B0215-09C	FTASS114	FTA-SS-114
B0215-10A	SV1140204	FTA-SV-114-0204
B0215-10B	SV1140204	FTA-SV-114-0204
B0215-11A	SV1140709	FTA-SV-114-0709
B0215-11B	SV1140709	FTA-SV-114-0709
B0215-12A	SVDUP3	FTA-SV-DUP3
B0215-12B	SVDUP3	FTA-SV-DUP3
B0215-13A	FTASS115	FTA-SS-115
B0215-13B	FTASS115	FTA-SS-115
B0215-13C	FTASS115	FTA-SS-115
B0215-14A	SV1150204	FTA-SV-115-0204
B0215-14B	SV1150204	FTA-SV-115-0204
B0215-15A	SV1150810	FTA-SV-115-0810
B0215-15B	SV1150810	FTA-SV-115-0810
B0215-16A	FTASS116	FTA-SS-116
B0215-16B	FTASS116	FTA-SS-116
B0215-16C	FTASS116	FTA-SS-116
B0215-17A	SV1160204	FTA-SV-116-0204
B0215-17B	SV1160204	FTA-SV-116-0204
B0215-18A	SV1160709	FTA-SV-116-0709

0007

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0215-18B	SV1160709	FTA-SV-116-0709
B0215-19A	FTASS117	FTA-SS-117
B0215-19B	FTASS117	FTA-SS-117
B0215-19C	FTASS117	FTA-SS-117
B0215-20A	SV1170204	FTA-SV-117-0204
B0215-20B	SV1170204	FTA-SV-117-0204
B0215-21A	SV1170709	FTA-SV-117-0709
B0215-21B	SV1170709	FTA-SV-117-0709
B0215-22A	FTASS118	FTA-SS-118
B0215-22B	FTASS118	FTA-SS-118
B0215-22C	FTASS118	FTA-SS-118
B0215-23A	SV1180204	FTA-SV-118-0204
B0215-23B	SV1180204	FTA-SV-118-0204
B0215-24A	SV118070	FTA-SV-118-070
B0215-24B	SV118070	FTA-SV-118-070
B0215-25A	RB-020503	
B0215-25B	RB-020503	
B0215-25C	RB-020503	
B0215-26A	FB-020503	
B0215-26B	FB-020503	
B0215-26C	FB-020503	

0008

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FB-020503	B0215-26B
RB-020403	B0215-02B
RB-020503	B0215-25B

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Evan Phile

Date: 2/21/03 Title:

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FTASS112	B0215-03A
FTASS113	B0215-06A
FTASS114	B0215-09A
FTASS115	B0215-13A
FTASS116	B0215-16A
SV1120204	B0215-04A
SV1120709	B0215-05A
SV1130204	B0215-07A
SV1130709	B0215-08A
SV1140204	B0215-10A
SV1140709	B0215-11A
SV1150204	B0215-14A
SV1150810	B0215-15A
SV1160204	B0215-17A
SV1160204D	B0215-17AD
SV1160204S	B0215-17AS
SVDUP3	B0215-12A

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments:

_____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: REINIER A. CORIPPS

Date: 2/4/03 Title: CHEMIST

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FTASS117	B0215-19A
FTASS118	B0215-22A
SV1160709	B0215-18A
SV1170204	B0215-20A
SV1170709	B0215-21A
SV1180204	B0215-23A
SV118070	B0215-24A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Roman A. Coutts

Date: 02/24/03 Title: Chemist

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/10/03
Date Reported: 2/19/03
P.O. #: 283
Work Order #: 0302-01753

DESCRIPTION: PROJECT# B0215 (SEVEN SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 2/10/03
Work Order # 0302-01753

Approved by: _____
R.I. Analytical

Sample #: 001
SAMPLE DESCRIPTION: B0215-03B GRAB 02/05/03 @0800

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 16:30	LKS

Sieve - * See Attached

Sample #: 002
SAMPLE DESCRIPTION: B0215-06B GRAB 02/05/03 @0846

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 17:20	LKS

Sieve - * See Attached

Sample #: 003
SAMPLE DESCRIPTION: B0215-09B GRAB 02/05/03 @0922

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 17:45	LKS

Sieve - * See Attached

Sample #: 004
SAMPLE DESCRIPTION: B0215-13B GRAB 02/05/03 @1030

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 18:45	LKS

Sieve - * See Attached

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 2/10/03
Work Order # 0302-01753

Approved by: R.I. Analytical

Sample #: 005
SAMPLE DESCRIPTION: B0215-16B GRAB 02/05/03 @1128

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 19:30	LKS

Sieve - * See Attached

Sample #: 006
SAMPLE DESCRIPTION: B0215-19B GRAB 02/05/03 @1210

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 20:30	LKS

Sieve - * See Attached

Sample #: 007
SAMPLE DESCRIPTION: B0215-22B GRAB 02/05/03 @1248

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 21:05	LKS

Sieve - * See Attached

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A_

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U					19.312	B	P
Antimony	7.5	B	3.5	B					3.000	U	P
Arsenic	3.0	U	3.0	U					3.000	U	P
Barium	4.0	U	4.0	U					6.092	B	P
Beryllium	0.5	U	0.5	U					0.500	U	P
Cadmium	0.7	U	0.7	U					0.700	U	P
Calcium	240.0	U	240.0	U					240.000	U	P
Chromium	0.6	U	0.6	U					0.600	U	P
Cobalt	0.9	U	0.9	U					0.900	U	P
Copper	4.5	B	4.0	U					5.831	B	P
Iron	26.0	U	26.0	U					26.000	U	P
Lead	4.0	U	4.0	U					4.000	U	P
Magnesium	8.0	U	8.0	U					17.696	B	P
Manganese	0.8	U	0.8	U					1.426	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U					0.800	U	P
Potassium	436.0	B	78.0	U	78.0	U	78.0	U	127.664	B	P
Selenium	9.0	U	9.0	U					9.000	U	P
Silver	2.0	U	2.0	U					2.000	U	P
Sodium	305.1	B	83.0	U	83.0	U	-113.2	B	151.988	B	P
Thallium	3.0	U	3.0	U					3.000	U	P
Vanadium	0.7	U	0.7	U					0.700	U	P
Zinc	7.0	U	7.0	U					7.000	U	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ___

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0215A

Preparation Blank Matrix (soil/water): ___

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium			-100.7	B	83.0	U					P
Thallium											
Vanadium											
Zinc											
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	5.8	B	3.0	U	3.0	U	3.0	U	0.190	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	1.382	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	22.385	B	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.140	B	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.089	B	P
Copper	11.7	B	4.0	U	4.0	U	4.0	U	1.907		P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	3.047	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.0	U	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.336	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.151	B	P
Potassium	512.9	B	253.4	B	313.0	B			16.307	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium	305.1	B	83.0	U	83.0	U	-113.2	B	4.150	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.1	B	7.0	U	7.0	U	7.0	U	0.925	B	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ___

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215B_

Preparation Blank Matrix (soil/water): ___

Preparation Blank Concentration Units (ug/L or mg/kg): ___

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U							P
Antimony			3.4	B							P
Arsenic			3.0	U							P
Barium			4.0	U							P
Beryllium			0.5	U							P
Cadmium			0.7	U							P
Calcium			240.0	U							P
Chromium			0.6	U							P
Cobalt			0.9	U							P
Copper			4.0	U							P
Iron			26.0	U							P
Lead			4.0	U							P
Magnesium			8.0	U							P
Manganese			0.8	U							P
Mercury			0.1	U	0.1	U	0.1	U			CV
Nickel			0.8	U							P
Potassium	436.0	B	78.0	U	78.0	U	78.0	U			P
Selenium			9.0	U							P
Silver			2.0	U							P
Sodium			-100.7	B	83.0	U					P
Thallium			3.0	U							P
Vanadium			0.7	U							P
Zinc			7.0	U							P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B__

Preparation Blank Matrix (soil/water): ____

Preparation Blank Concentration Units (ug/L or mg/kg): ____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium											
Manganese											
Mercury			0.1	U	0.1	U					CV
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215C_

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	5.8	B	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.385	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	13.776	B	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.058	B	P
Copper	11.7	B	4.0	U	4.0	U	4.0	U	0.511	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.469	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.0	U	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.271	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.117	B	P
Potassium	436.0	B	78.0	U	78.0	U	78.0	U	-9.078	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium	305.1	B	83.0	U	83.0	U	-113.2	B	-7.967	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.1	B	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	17.0	U	17.0	U			P
Antimony			3.4	B	3.0	U	4.0	B			P
Arsenic			3.0	U	3.0	U	3.0	U			P
Barium			4.0	U	4.0	U	4.0	U			P
Beryllium			0.5	U	0.5	U	0.5	U			P
Cadmium			0.7	U	0.7	U	0.7	U			P
Calcium			240.0	U	240.0	U	240.0	U			P
Chromium			0.6	U	0.6	U	0.6	U			P
Cobalt			0.9	U	0.9	U	0.9	U			P
Copper			4.0	U	4.0	U	4.0	U			P
Iron			26.0	U	26.0	U	26.0	U			P
Lead			4.0	U	4.0	U	4.0	U			P
Magnesium			8.0	U	8.0	U	8.0	U			P
Manganese			0.8	U	0.8	U	0.8	U			P
Mercury			0.1	U	0.1	U					CV
Nickel			0.8	U	0.8	U	0.8	U			P
Potassium											
Selenium			9.0	U	9.0	U	9.0	U			P
Silver			2.0	U	2.0	U	2.0	U			P
Sodium			-100.7	B	83.0	U					P
Thallium			3.0	U	3.0	U	3.0	U			P
Vanadium			0.7	U	0.7	U	0.7	U			P
Zinc			7.0	U	7.0	U	7.0	U			P
Cyanide											

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		25391.1	101.6		24793.8	99.2
Selenium								
Silver								
Sodium		25000		27075.6	108.3		27293.8	109.2
Thallium								
Vanadium								
Zinc								

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	477465	496172.6	99.2	484670	495144.3	99.0
Antimony		600		599.8	100.0		606.1	101.0
Arsenic		100		94.9	94.9		91.2	91.2
Barium		500		486.8	97.4		477.3	95.5
Beryllium		500		469.8	94.0		469.3	93.9
Cadmium		1000		895.0	89.5		891.6	89.2
Calcium	500000	500000	496525	505077.7	101.0	495694	500386.7	100.1
Chromium		500		459.5	91.9		456.5	91.3
Cobalt		500		432.8	86.6		429.5	85.9
Copper		500		499.5	99.9		491.7	98.3
Iron	200000	200000	171028	176897.2	88.4	173651	176789.5	88.4
Lead		500		462.0	92.4		458.8	91.8
Magnesium	500000	500000	471063	487348.4	97.5	478494	487319.2	97.5
Manganese		500		462.1	92.4		459.2	91.8
Mercury								
Nickel		1000		871.5	87.2		868.0	86.8
Potassium								
Selenium		500		467.7	93.5		483.8	96.8
Silver		200		197.9	99.0		196.2	98.1
Sodium								
Thallium		100		91.5	91.5		94.9	94.9
Vanadium		500		471.2	94.2		468.1	93.6
Zinc		1000		857.7	85.8		851.3	85.1

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

ICP ID Number: OPTIMA_1A___ ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		24796.9	99.2		23633.1	94.5
Selenium								
Silver								
Sodium		25000		27075.6	108.3		27293.8	109.2
Thallium								
Vanadium								
Zinc								

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		25391.1	101.6		24793.8	99.2
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	527424	531880.7	106.4	536808	543332.0	108.7
Antimony		600		666.4	111.1		662.3	110.4
Arsenic		100		88.3	88.3		83.7	83.7
Barium		500		520.8	104.2		519.8	104.0
Beryllium		500		510.0	102.0		517.4	103.5
Cadmium		1000		952.2	95.2		960.7	96.1
Calcium	500000	500000	548972	557268.8	111.5	573328	568054.2	113.6
Chromium		500		489.2	97.8		494.4	98.9
Cobalt		500		470.3	94.1		466.7	93.3
Copper		500		555.8	111.2		545.0	109.0
Iron	200000	200000	188657	190169.3	95.1	191531	193321.0	96.7
Lead		500		504.4	100.9		505.5	101.1
Magnesium	500000	500000	519242	522834.2	104.6	526336	530712.3	106.1
Manganese		500		492.8	98.6		502.6	100.5
Mercury								
Nickel		1000		924.7	92.5		944.5	94.4
Potassium								
Selenium		500		522.3	104.5		518.5	103.7
Silver		200		191.1	95.6		191.7	95.8
Sodium								
Thallium		100		107.2	107.2		100.7	100.7
Vanadium		500		502.4	100.5		509.4	101.9
Zinc		1000		922.7	92.3		919.7	92.0

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		25391.1	101.6		24793.8	99.2
Selenium								
Silver								
Sodium		25000		27075.6	108.3		27293.8	109.2
Thallium								
Vanadium								
Zinc								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	527424	531880.7	106.4	533293	537534.7	107.5
Antimony		600		666.4	111.1		691.0	115.2
Arsenic		100		88.3	88.3		100.7	100.7
Barium		500		520.8	104.2		519.6	103.9
Beryllium		500		510.0	102.0		511.7	102.3
Cadmium		1000		952.2	95.2		946.3	94.6
Calcium	500000	500000	548972	557268.8	111.5	561520	561280.7	112.3
Chromium		500		489.2	97.8		487.2	97.4
Cobalt		500		470.3	94.1		450.8	90.2
Copper		500		555.8	111.2		535.5	107.1
Iron	200000	200000	188657	190169.3	95.1	191938	193196.3	96.6
Lead		500		504.4	100.9		508.6	101.7
Magnesium	500000	500000	519242	522834.2	104.6	526770	529698.7	105.9
Manganese		500		492.8	98.6		519.6	103.9
Mercury								
Nickel		1000		924.7	92.5		964.4	96.4
Potassium								
Selenium		500		522.3	104.5		513.0	102.6
Silver		200		191.1	95.6		183.1	91.6
Sodium								
Thallium		100		107.2	107.2		102.3	102.3
Vanadium		500		502.4	100.5		507.9	101.6
Zinc		1000		922.7	92.3		903.1	90.3

Cr 267.716	24.5	0.0001 mg/L	0.00007	0.0001 mg/L	0.00007	97.39%
Cu 324.752	2151.5	0.0045 mg/L	0.00080	0.0045 mg/L	0.00080	17.92%
Fe 273.955	-13.7	-0.0003 mg/L	0.00065	-0.0003 mg/L	0.00065	229.31%
Mg 279.077	-316.9	-0.0074 mg/L	0.00250	-0.0074 mg/L	0.00250	33.69%
Mn 257.610	80.5	0.0002 mg/L	0.00007	0.0002 mg/L	0.00007	31.47%
Ni 231.604	23.7	0.0003 mg/L	0.00012	0.0003 mg/L	0.00012	36.52%
Pb 220.353	-1.2	-0.0001 mg/L	0.00014	-0.0001 mg/L	0.00014	235.78%
Sb 206.836	25.1	0.0075 mg/L	0.00118	0.0075 mg/L	0.00118	15.78%
Se 196.026	-0.4	-0.0002 mg/L	0.00055	-0.0002 mg/L	0.00055	289.50%
Tl 190.801	2.4	0.0010 mg/L	0.00090	0.0010 mg/L	0.00090	88.41%
V 292.402	57.7	0.0002 mg/L	0.00006	0.0002 mg/L	0.00006	35.26%
Zn 206.200	440.3	0.0046 mg/L	0.00062	0.0046 mg/L	0.00062	13.48%
Na 330.237	23.1	0.0107 mg/L	0.04575	0.0107 mg/L	0.04575	426.98%
Cd 226.502	1.2	0.0000 mg/L	0.00001	0.0000 mg/L	0.00001	256.99%
Ti 334.940	67.4	0.0001 mg/L	0.00009	0.0001 mg/L	0.00009	144.82%
Ca 227.546	10.7	0.0170 mg/L	0.02229	0.0170 mg/L	0.02229	131.05%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/2003 12:42:23 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-9832.8	-0.0107	mg/L	0.00007	-0.0107	mg/L	0.00007	0.65%
Al 308.215	23604702.3	477.47	mg/L	2.455	477.47	mg/L	2.455	0.51%
As 188.979	-2.8	-0.0046	mg/L	0.00755	-0.0046	mg/L	0.00755	165.76%
Ba 233.527	493.9	-0.0031	mg/L	0.00004	-0.0031	mg/L	0.00004	1.27%
Be 313.107	-916.7	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	8.69%
Co 228.616	-40.0	-0.0019	mg/L	0.00011	-0.0019	mg/L	0.00011	5.79%
Cr 267.716	-692.0	0.0000	mg/L	0.00009	0.0000	mg/L	0.00009	213.15%
Cu 324.752	-7213.6	0.0071	mg/L	0.00007	0.0071	mg/L	0.00007	0.92%
Fe 273.955	8318412.3	171.03	mg/L	0.742	171.03	mg/L	0.742	0.43%
Mg 279.077	20149070.6	471.06	mg/L	1.820	471.06	mg/L	1.820	0.39%
Mn 257.610	-2145.5	-0.0071	mg/L	0.00016	-0.0071	mg/L	0.00016	2.28%
Ni 231.604	52.0	0.0008	mg/L	0.00026	0.0008	mg/L	0.00026	34.22%
Pb 220.353	-576.4	0.0084	mg/L	0.00079	0.0084	mg/L	0.00079	9.35%
Sb 206.836	-64.5	-0.0092	mg/L	0.00737	-0.0092	mg/L	0.00737	80.34%
Se 196.026	-104.9	-0.0050	mg/L	0.00171	-0.0050	mg/L	0.00171	34.09%
Tl 190.801	-7.7	-0.0022	mg/L	0.01251	-0.0022	mg/L	0.01251	570.25%
V 292.402	-186.2	-0.0020	mg/L	0.00010	-0.0020	mg/L	0.00010	5.19%
Zn 206.200	2155.0	-0.0018	mg/L	0.00039	-0.0018	mg/L	0.00039	22.10%
Na 330.237	985.1	0.2223	mg/L	0.15065	0.2223	mg/L	0.15065	67.76%
Cd 226.502	2808.7	0.0023	mg/L	0.00013	0.0023	mg/L	0.00013	5.41%
Ti 334.940	8240.4	0.0107	mg/L	0.00015	0.0107	mg/L	0.00015	1.40%
Ca 227.546	311550.4	496.52	mg/L	7.678	496.52	mg/L	7.678	1.55%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/2003 12:45:02 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	54536.9	0.1979	mg/L	0.00300	0.1979	mg/L	0.00300	1.52%
Al 308.215	24529540.1	496.17	mg/L	4.370	496.17	mg/L	4.370	0.88%
As 188.979	190.3	0.0949	mg/L	0.00755	0.0949	mg/L	0.00755	7.96%
Ba 233.527	40993.1	0.4868	mg/L	0.00025	0.4868	mg/L	0.00025	0.05%
Be 313.107	4114846.8	0.4698	mg/L	0.00346	0.4698	mg/L	0.00346	0.74%
Co 228.616	18389.0	0.4328	mg/L	0.00047	0.4328	mg/L	0.00047	0.11%
Cr 267.716	150444.9	0.4595	mg/L	0.00654	0.4595	mg/L	0.00654	1.42%
Cu 324.752	228780.1	0.4995	mg/L	0.00649	0.4995	mg/L	0.00649	1.30%
Fe 273.955	8603865.9	176.90	mg/L	1.350	176.90	mg/L	1.350	0.76%

Na 330.237	278.2	0.1292 mg/L	0.08780	0.1292 mg/L	0.08780	67.98%
Cd 226.502	-12.7	0.0000 mg/L	0.00001	0.0000 mg/L	0.00001	21.44%
Ti 334.940	203.0	0.0002 mg/L	0.00009	0.0002 mg/L	0.00009	52.77%
Ca 227.546	56.4	0.0900 mg/L	0.02408	0.0900 mg/L	0.02408	26.76%

Sequence No.: 16
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/2003 1:12:16 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-10044.5	-0.0109	mg/L	0.00060	-0.0109	mg/L	0.00060	5.49%
Al 308.215	23960899.4	484.67	mg/L	6.430	484.67	mg/L	6.430	1.33%
As 188.979	2.4	-0.0020	mg/L	0.00085	-0.0020	mg/L	0.00085	41.76%
Ba 233.527	445.3	-0.0038	mg/L	0.00019	-0.0038	mg/L	0.00019	5.10%
Be 313.107	-879.6	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	11.82%
Co 228.616	-8.6	-0.0011	mg/L	0.00079	-0.0011	mg/L	0.00079	68.35%
Cr 267.716	-692.1	0.0001	mg/L	0.00008	0.0001	mg/L	0.00008	102.55%
Cu 324.752	-8598.6	0.0046	mg/L	0.00031	0.0046	mg/L	0.00031	6.66%
Fe 273.955	8445970.7	173.65	mg/L	1.789	173.65	mg/L	1.789	1.03%
Mg 279.077	20466888.0	478.49	mg/L	4.865	478.49	mg/L	4.865	1.02%
Mn 257.610	-2206.8	-0.0073	mg/L	0.00007	-0.0073	mg/L	0.00007	0.93%
Ni 231.604	14.7	0.0002	mg/L	0.00072	0.0002	mg/L	0.00072	339.94%
Pb 220.353	-597.7	-0.0079	mg/L	0.00437	0.0079	mg/L	0.00437	55.37%
Sb 206.836	-33.4	0.0002	mg/L	0.00497	0.0002	mg/L	0.00497	>999.9%
Se 196.026	-138.4	-0.0204	mg/L	0.01539	-0.0204	mg/L	0.01539	75.30%
Tl 190.801	-11.8	-0.0038	mg/L	0.00950	-0.0038	mg/L	0.00950	248.22%
V 292.402	-131.0	-0.0018	mg/L	0.00001	-0.0018	mg/L	0.00001	0.70%
Zn 206.200	2038.9	-0.0033	mg/L	0.00058	-0.0033	mg/L	0.00058	17.50%
Na 330.237	987.2	0.2288	mg/L	0.16976	0.2288	mg/L	0.16976	74.21%
Cd 226.502	2723.6	0.0019	mg/L	0.00047	0.0019	mg/L	0.00047	24.37%
Ti 334.940	8268.4	0.0107	mg/L	0.00005	0.0107	mg/L	0.00005	0.45%
Ca 227.546	311042.8	495.69	mg/L	1.898	495.69	mg/L	1.898	0.38%

Sequence No.: 17
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/2003 1:14:55 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	54006.2	0.1962	mg/L	0.00440	0.1962	mg/L	0.00440	2.24%
Al 308.215	24478705.7	495.14	mg/L	9.405	495.14	mg/L	9.405	1.90%
As 188.979	182.8	0.0912	mg/L	0.00366	0.0912	mg/L	0.00366	4.02%
Ba 233.527	40209.8	0.4773	mg/L	0.01195	0.4773	mg/L	0.01195	2.50%
Be 313.107	4110187.1	0.4693	mg/L	0.00816	0.4693	mg/L	0.00816	1.74%
Co 228.616	18247.9	0.4295	mg/L	0.00156	0.4295	mg/L	0.00156	0.36%
Cr 267.716	149456.5	0.4565	mg/L	0.01063	0.4565	mg/L	0.01063	2.33%
Cu 324.752	225048.6	0.4917	mg/L	0.01220	0.4917	mg/L	0.01220	2.48%
Fe 273.955	8598628.6	176.79	mg/L	2.620	176.79	mg/L	2.620	1.48%
Mg 279.077	20844291.1	487.32	mg/L	7.364	487.32	mg/L	7.364	1.51%
Mn 257.610	170262.3	0.4592	mg/L	0.01196	0.4592	mg/L	0.01196	2.61%
Ni 231.604	60078.9	0.8680	mg/L	0.02255	0.8680	mg/L	0.02255	2.60%
Pb 220.353	8412.1	0.4588	mg/L	0.00299	0.4588	mg/L	0.00299	0.65%
Sb 206.836	1996.4	0.6061	mg/L	0.01933	0.6061	mg/L	0.01933	3.19%
Se 196.026	910.2	0.4838	mg/L	0.01457	0.4838	mg/L	0.01457	3.01%
Tl 190.801	222.8	0.0949	mg/L	0.00359	0.0949	mg/L	0.00359	3.78%
V 292.402	164596.9	0.4681	mg/L	0.01262	0.4681	mg/L	0.01262	2.70%
Zn 206.200	83739.3	0.8513	mg/L	0.01582	0.8513	mg/L	0.01582	1.86%
Na 330.237	55786.2	25.673	mg/L	0.7109	25.673	mg/L	0.7109	2.77%
Cd 226.502	280397.4	0.8916	mg/L	0.02007	0.8916	mg/L	0.02007	2.25%
Ti 334.940	7026.0	0.0096	mg/L	0.00021	0.0096	mg/L	0.00021	2.22%

Ag 328.068	369384.4	1.1487 mg/L	0.00142	1.1487 mg/L	0.00142	0.12%
Al 308.215	516672.6	9.7616 mg/L	0.03419	9.7616 mg/L	0.03419	0.35%
As 188.979	1221.2	0.5175 mg/L	0.00330	0.5175 mg/L	0.00330	0.64%
Ba 233.527	1012892.8	10.691 mg/L	0.0187	10.691 mg/L	0.0187	0.18%
Be 313.107	2354908.4	0.2535 mg/L	0.00053	0.2535 mg/L	0.00053	0.21%
Co 228.616	101992.5	2.5680 mg/L	0.00327	2.5680 mg/L	0.00327	0.13%
Cr 267.716	355921.1	1.0068 mg/L	0.00245	1.0068 mg/L	0.00245	0.24%
Cu 324.752	650204.4	1.3009 mg/L	0.00210	1.3009 mg/L	0.00210	0.16%
Fe 273.955	273093.8	5.0934 mg/L	0.00990	5.0934 mg/L	0.00990	0.19%
Mg 279.077	1201269.3	25.480 mg/L	0.0762	25.480 mg/L	0.0762	0.30%
Mn 257.610	1214270.7	2.5662 mg/L	0.00007	2.5662 mg/L	0.00007	0.00%
Ni 231.604	221512.9	2.5666 mg/L	0.00919	2.5666 mg/L	0.00919	0.36%
Pb 220.353	11603.6	0.5061 mg/L	0.00206	0.5061 mg/L	0.00206	0.41%
Sb 206.836	2230.7	0.5813 mg/L	0.00504	0.5813 mg/L	0.00504	0.87%
Se 196.026	1020.6	0.4953 mg/L	0.00042	0.4953 mg/L	0.00042	0.09%
Tl 190.801	1275.1	0.5174 mg/L	0.00013	0.5174 mg/L	0.00013	0.02%
V 292.402	1008529.0	2.5361 mg/L	0.00183	2.5361 mg/L	0.00183	0.07%
Zn 206.200	252931.9	2.5627 mg/L	0.00251	2.5627 mg/L	0.00251	0.10%
Na 330.237	54666.5	24.293 mg/L	0.0679	24.293 mg/L	0.0679	0.28%
Cd 226.502	83749.9	0.2526 mg/L	0.00019	0.2526 mg/L	0.00019	0.07%
Ti 334.940	2494.8	0.0018 mg/L	0.00011	0.0018 mg/L	0.00011	6.00%
Ca 227.546	16284.2	24.696 mg/L	0.0879	24.696 mg/L	0.0879	0.36%

Sequence No.: 11
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/10/2003 4:38:11 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:13 AM,

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	20.3	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	21.99%
Al 308.215	-200.3	-0.0038	mg/L	0.00120	-0.0038	mg/L	0.00120	31.73%
As 188.979	-0.4	-0.0002	mg/L	0.00000	-0.0002	mg/L	0.00000	2.31%
Ba 233.527	216.7	0.0023	mg/L	0.00008	0.0023	mg/L	0.00008	3.63%
Be 313.107	4613.9	0.0005	mg/L	0.00002	0.0005	mg/L	0.00002	4.16%
Co 228.616	10.2	0.0003	mg/L	0.00006	0.0003	mg/L	0.00006	22.85%
Cr 267.716	-71.8	-0.0002	mg/L	0.00013	-0.0002	mg/L	0.00013	61.73%
Cu 324.752	5836.0	0.0117	mg/L	0.00118	0.0117	mg/L	0.00118	10.05%
Fe 273.955	56.2	0.0010	mg/L	0.00097	0.0010	mg/L	0.00097	92.10%
Mg 279.077	-174.6	-0.0037	mg/L	0.00164	-0.0037	mg/L	0.00164	44.32%
Mn 257.610	117.8	0.0002	mg/L	0.00002	0.0002	mg/L	0.00002	7.31%
Ni 231.604	24.4	0.0003	mg/L	0.00006	0.0003	mg/L	0.00006	20.76%
Pb 220.353	-2.1	-0.0001	mg/L	0.00024	-0.0001	mg/L	0.00024	259.89%
Sb 206.836	13.4	0.0035	mg/L	0.00155	0.0035	mg/L	0.00155	44.71%
Se 196.026	-1.6	-0.0008	mg/L	0.00079	-0.0008	mg/L	0.00079	101.06%
Tl 190.801	3.6	0.0015	mg/L	0.00063	0.0015	mg/L	0.00063	43.20%
V 292.402	62.7	0.0002	mg/L	0.00007	0.0002	mg/L	0.00007	44.79%
Zn 206.200	701.4	0.0071	mg/L	0.00080	0.0071	mg/L	0.00080	11.22%
Na 330.237	297.8	0.1326	mg/L	0.03319	0.1326	mg/L	0.03319	25.03%
Cd 226.502	18.6	0.0001	mg/L	0.00000	0.0001	mg/L	0.00000	3.65%
Ti 334.940	223.9	0.0002	mg/L	0.00009	0.0002	mg/L	0.00009	56.61%
Ca 227.546	4.7	0.0069	mg/L	0.05096	0.0069	mg/L	0.05096	736.05%

Sequence No.: ~~12~~
Sample ID: ICSA0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/10/2003 4:42:13 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:14 AM,

Mean Data: ICSA0

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-13614.5	-0.0192	mg/L	0.00116	-0.0192	mg/L	0.00116	6.06%
Al 308.215	27916187.9	→ ~~527.42~~	mg/L	2.286	527.42	mg/L	2.286	0.43%
As 188.979	-8.0	-0.0069	mg/L	0.01071	-0.0069	mg/L	0.01071	156.15%

ICSA

Ba 233.527	506.7	-0.0047 mg/L	0.00021	-0.0047 mg/L	0.00021	4.57%
Be 313.107	1993.9	0.0002 mg/L	0.00002	0.0002 mg/L	0.00002	7.10%
Co 228.616	-16.5	-0.0014 mg/L	0.00047	-0.0014 mg/L	0.00047	32.51%
Cr 267.716	-785.4	0.0001 mg/L	0.00027	0.0001 mg/L	0.00027	180.82%
Cu 324.752	-4191.5	-0.0160 mg/L	0.00017	-0.0160 mg/L	0.00017	1.08%
Fe 273.955	10115281.2	188.66 mg/L	0.742	188.66 mg/L	0.742	0.39%
Mg 279.077	24492814.6	519.24 mg/L	1.895	519.24 mg/L	1.895	0.36%
Mn 257.610	-1610.9	-0.0048 mg/L	0.00010	-0.0048 mg/L	0.00010	2.16%
Ni 231.604	37.7	0.0004 mg/L	0.00006	0.0004 mg/L	0.00006	14.30%
Pb 220.353	-645.9	-0.0130 mg/L	0.00083	-0.0130 mg/L	0.00083	6.39%
Sb 206.836	-43.1	-0.0001 mg/L	0.00084	-0.0001 mg/L	0.00084	>999.9%
Se 196.026	-130.6	-0.0135 mg/L	0.01874	-0.0135 mg/L	0.01874	138.75%
Tl 190.801	8.9	0.0047 mg/L	0.00433	0.0047 mg/L	0.00433	92.02%
V 292.402	196.2	-0.0011 mg/L	0.00003	-0.0011 mg/L	0.00003	2.38%
Zn 206.200	2615.8	-0.0003 mg/L	0.00000	-0.0003 mg/L	0.00000	0.54%
Na 330.237	941.2	0.1580 mg/L	0.13308	0.1580 mg/L	0.13308	84.23%
Cd 226.502	2818.0	0.0011 mg/L	0.00006	0.0011 mg/L	0.00006	4.91%
Ti 334.940	9912.0	0.0110 mg/L	0.00020	0.0110 mg/L	0.00020	1.81%
Ca 227.546	360280.3	548.97 mg/L	11.617	548.97 mg/L	11.617	2.12%

Sequence No.: 13
Sample ID: ICSAB0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/10/2003 4:44:52 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:16 AM,

Mean Data: ICSAB0

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	54016.6	0.1911	mg/L	0.00123	0.1911	mg/L	0.00123	0.64%
Al 308.215	28152088.0	531.88	mg/L	0.171	531.88	mg/L	0.171	0.03%
As 188.979	209.7	0.0883	mg/L	0.00880	0.0883	mg/L	0.00880	9.96%
Ba 233.527	50210.6	0.5208	mg/L	0.00110	0.5208	mg/L	0.00110	0.21%
Be 313.107	4737325.0	0.5100	mg/L	0.00070	0.5100	mg/L	0.00070	0.14%
Co 228.616	18720.4	0.4703	mg/L	0.00124	0.4703	mg/L	0.00124	0.26%
Cr 267.716	172106.9	0.4892	mg/L	0.00065	0.4892	mg/L	0.00065	0.13%
Cu 324.752	265275.6	0.5558	mg/L	0.00112	0.5558	mg/L	0.00112	0.20%
Fe 273.955	10196383.9	190.17	mg/L	0.027	190.17	mg/L	0.027	0.01%
Mg 279.077	24662127.1	522.83	mg/L	0.029	522.83	mg/L	0.029	0.01%
Mn 257.610	233817.2	0.4928	mg/L	0.00053	0.4928	mg/L	0.00053	0.11%
Ni 231.604	79804.7	0.9247	mg/L	0.00012	0.9247	mg/L	0.00012	0.01%
Pb 220.353	10638.0	0.5044	mg/L	0.00038	0.5044	mg/L	0.00038	0.08%
Sb 206.836	2644.7	0.6963	mg/L	0.00116	0.6963	mg/L	0.00116	0.17%
Se 196.026	970.6	0.5223	mg/L	0.00509	0.5223	mg/L	0.00509	0.97%
Tl 190.801	261.8	0.1072	mg/L	0.00946	0.1072	mg/L	0.00946	8.82%
V 292.402	200166.1	0.5024	mg/L	0.00090	0.5024	mg/L	0.00090	0.18%
Zn 206.200	93656.8	0.9227	mg/L	0.00084	0.9227	mg/L	0.00084	0.09%
Na 330.237	63451.9	27.974	mg/L	0.0791	27.974	mg/L	0.0791	0.28%
Cd 226.502	318620.3	0.9522	mg/L	0.00112	0.9522	mg/L	0.00112	0.12%
Ti 334.940	10058.5	0.0111	mg/L	0.00008	0.0111	mg/L	0.00008	0.71%
Ca 227.546	365745.0	557.27	mg/L	0.998	557.27	mg/L	0.998	0.18%

Sequence No.: 14
Sample ID: MB-5552,5552
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 2/10/2003 4:47:36 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:19 AM,

LC 5/16/03

Mean Data: MB-5552,5552

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	451.3	0.0014	mg/L	0.00006	0.0014	mg/L	0.00006	4.40%
Al 308.215	110.7	0.0021	mg/L	0.00365	0.0021	mg/L	0.00365	174.41%
As 188.979	-0.9	-0.0003	mg/L	0.00043	-0.0003	mg/L	0.00043	125.45%
Ba 233.527	3757.0	0.0396	mg/L	0.00279	0.0396	mg/L	0.00279	7.04%
Be 313.107	4162.7	0.0004	mg/L	0.00002	0.0004	mg/L	0.00002	3.96%
Co 228.616	60.8	0.0015	mg/L	0.00020	0.0015	mg/L	0.00020	12.80%

V 292.402	126225.0	0.3147 mg/L	0.00227	0.3147 mg/L	0.00227	0.72%
Zn 206.200	54755.2	0.5496 mg/L	0.00379	0.5496 mg/L	0.00379	0.69%
Na 330.237	1166.2	1.5757 mg/L	0.09967	1.5757 mg/L	0.09967	6.33%
Cd 226.502	2728.5	0.0027 mg/L	0.00021	0.0027 mg/L	0.00021	7.58%
Ti 334.940	4519451.1	3.2550 mg/L	0.05277	3.2550 mg/L	0.05277	1.62%
Ca 227.546	8853.1	12.354 mg/L	0.0514	12.354 mg/L	0.0514	0.42%

Sequence No.: 69
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 57
Date Collected: 2/10/2003 8:27:42 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:30 AM,

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1670.6	-0.0020	mg/L	0.00017	-0.0020	mg/L	0.00017	8.75%
Al 308.215	1569119.2	29.646	mg/L	0.0767	29.646	mg/L	0.0767	0.26%
As 188.979	41.5	0.0184	mg/L	0.00089	0.0184	mg/L	0.00089	4.87%
Ba 233.527	19144.8	0.2013	mg/L	0.00089	0.2013	mg/L	0.00089	0.44%
Be 313.107	20087.0	0.0030	mg/L	0.00001	0.0030	mg/L	0.00001	0.22%
Co 228.616	323.9	0.0069	mg/L	0.00002	0.0069	mg/L	0.00002	0.33%
Cr 267.716	13291.0	0.0378	mg/L	0.00038	0.0378	mg/L	0.00038	1.00%
Cu 324.752	3368.7	0.0084	mg/L	0.00042	0.0084	mg/L	0.00042	5.03%
Fe 273.955	928888.2	17.324	mg/L	0.0151	17.324	mg/L	0.0151	0.09%
Mg 279.077	81600.5	1.7304	mg/L	0.00199	1.7304	mg/L	0.00199	0.12%
Mn 257.610	43154.5	0.0917	mg/L	0.00024	0.0917	mg/L	0.00024	0.26%
Ni 231.604	1246.8	0.0142	mg/L	0.00016	0.0142	mg/L	0.00016	1.13%
Pb 220.353	388.5	0.0198	mg/L	0.00066	0.0198	mg/L	0.00066	3.31%
Sb 206.836	0.8	0.0018	mg/L	0.00050	0.0018	mg/L	0.00050	28.16%
Se 196.026	-9.7	-0.0006	mg/L	0.00098	-0.0006	mg/L	0.00098	175.33%
Tl 190.801	2.1	0.0025	mg/L	0.00014	0.0025	mg/L	0.00014	5.68%
V 292.402	20287.2	0.0505	mg/L	0.00008	0.0505	mg/L	0.00008	0.16%
Zn 206.200	2632.7	0.0257	mg/L	0.00010	0.0257	mg/L	0.00010	0.38%
Na 330.237	926.8	0.6498	mg/L	0.01607	0.6498	mg/L	0.01607	2.47%
Cd 226.502	147.9	-0.0002	mg/L	0.00000	-0.0002	mg/L	0.00000	1.48%
Ti 334.940	1118696.0	0.8057	mg/L	0.00102	0.8057	mg/L	0.00102	0.13%
Ca 227.546	564.7	0.7239	mg/L	0.01906	0.7239	mg/L	0.01906	2.63%

Sequence No.: ~~70~~
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/10/2003 8:31:43 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:31 AM,

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-14403.6	-0.0213	mg/L	0.00066	-0.0213	mg/L	0.00066	3.08%
Al 308.215	28226827.5	533.29	mg/L	2.004	533.29	mg/L	2.004	0.38%
As 188.979	-4.4	-0.0053	mg/L	0.00435	-0.0053	mg/L	0.00435	82.03%
Ba 233.527	163.5	-0.0085	mg/L	0.00008	-0.0085	mg/L	0.00008	0.92%
Be 313.107	-643.0	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	15.00%
Co 228.616	-21.6	-0.0016	mg/L	0.00036	-0.0016	mg/L	0.00036	22.37%
Cr 267.716	-817.6	0.0001	mg/L	0.00009	0.0001	mg/L	0.00009	92.03%
Cu 324.752	-10251.4	0.0043	mg/L	0.00007	0.0043	mg/L	0.00007	1.65%
Fe 273.955	10291223.6	191.94	mg/L	0.548	191.94	mg/L	0.548	0.29%
Mg 279.077	24847893.9	526.77	mg/L	1.493	526.77	mg/L	1.493	0.28%
Mn 257.610	-1512.6	-0.0046	mg/L	0.00010	-0.0046	mg/L	0.00010	2.17%
Ni 231.604	48.7	0.0006	mg/L	0.00022	0.0006	mg/L	0.00022	39.69%
Pb 220.353	-666.5	0.0126	mg/L	0.00067	0.0126	mg/L	0.00067	5.37%
Sb 206.836	-64.1	~~-0.0053~~	mg/L	0.00053	-0.0053	mg/L	0.00053	9.96%
Se 196.026	-105.2	-0.0003	mg/L	0.01366	-0.0003	mg/L	0.01366	>999.9%
Tl 190.801	10.4	0.0054	mg/L	0.01375	0.0054	mg/L	0.01375	256.69%
V 292.402	333.7	-0.0008	mg/L	0.00020	-0.0008	mg/L	0.00020	26.58%
Zn 206.200	2086.1	-0.0061	mg/L	0.00005	-0.0061	mg/L	0.00005	0.86%
Na 330.237	937.1	~~0.1484~~	mg/L	0.06855	0.1484	mg/L	0.06855	46.18%

Cd 226.502	2641.1	0.0005 mg/L	0.00014	0.0005 mg/L	0.00014	29.58%
Ti 334.940	10335.0	0.0114 mg/L	0.00010	0.0114 mg/L	0.00010	0.92%
Ca 227.546	368511.2	561.52 mg/L	0.256	561.52 mg/L	0.256	0.05%

Sequence No.: 71
Sample ID: ICSAB1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/10/2003 8:34:22 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:32 AM,

Mean Data: ICSAB1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	51286.6	0.1831	mg/L	0.00051	0.1831	mg/L	0.00051	0.28%
Al 308.215	28451348.4	537.53	mg/L	4.687	537.53	mg/L	4.687	0.87%
As 188.979	239.4	0.1007	mg/L	0.00716	0.1007	mg/L	0.00716	7.11%
Ba 233.527	50110.1	0.5196	mg/L	0.00226	0.5196	mg/L	0.00226	0.44%
Be 313.107	4752627.8	0.5117	mg/L	0.00429	0.5117	mg/L	0.00429	0.84%
Co 228.616	17949.9	0.4508	mg/L	0.00870	0.4508	mg/L	0.00870	1.93%
Cr 267.716	171396.2	0.4872	mg/L	0.00371	0.4872	mg/L	0.00371	0.76%
Cu 324.752	254945.3	0.5355	mg/L	0.00224	0.5355	mg/L	0.00224	0.42%
Fe 273.955	10358685.3	193.20	mg/L	1.354	193.20	mg/L	1.354	0.70%
Mg 279.077	24985922.2	529.70	mg/L	3.918	529.70	mg/L	3.918	0.74%
Mn 257.610	246484.7	0.5196	mg/L	0.00227	0.5196	mg/L	0.00227	0.44%
Ni 231.604	83226.7	0.9644	mg/L	0.00416	0.9644	mg/L	0.00416	0.43%
Pb 220.353	10723.9	0.5086	mg/L	0.00671	0.5086	mg/L	0.00671	1.32%
Sb 206.836	2712.8	0.7141	mg/L	0.00362	0.7141	mg/L	0.00362	0.51%
Se 196.026	950.0	0.5130	mg/L	0.00516	0.5130	mg/L	0.00516	1.01%
Tl 190.801	249.2	0.1023	mg/L	0.00404	0.1023	mg/L	0.00404	3.95%
V 292.402	202376.0	0.5079	mg/L	0.00429	0.5079	mg/L	0.00429	0.85%
Zn 206.200	91756.0	0.9031	mg/L	0.00532	0.9031	mg/L	0.00532	0.59%
Na 330.237	63714.8	28.091	mg/L	0.0317	28.091	mg/L	0.0317	0.11%
Cd 226.502	316696.4	0.9463	mg/L	0.00564	0.9463	mg/L	0.00564	0.60%
Ti 334.940	10010.5	0.0111	mg/L	0.00010	0.0111	mg/L	0.00010	0.88%
Ca 227.546	368387.0	561.28	mg/L	5.708	561.28	mg/L	5.708	1.02%

Sequence No.: 72
Sample ID: CCV5
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/10/2003 8:37:06 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:34 AM,

Mean Data: CCV5

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	360106.1	1.1199	mg/L	0.00247	1.1199	mg/L	0.00247	0.22%
Al 308.215	525357.0	9.9256	mg/L	0.04092	9.9256	mg/L	0.04092	0.41%
As 188.979	1256.0	0.5319	mg/L	0.00345	0.5319	mg/L	0.00345	0.65%
Ba 233.527	1027470.1	10.845	mg/L	0.0502	10.845	mg/L	0.0502	0.46%
Be 313.107	2349501.7	0.2530	mg/L	0.00092	0.2530	mg/L	0.00092	0.36%
Co 228.616	98476.7	2.4795	mg/L	0.01128	2.4795	mg/L	0.01128	0.45%
Cr 267.716	355478.5	1.0055	mg/L	0.00349	1.0055	mg/L	0.00349	0.35%
Cu 324.752	627398.8	1.2550	mg/L	0.00498	1.2550	mg/L	0.00498	0.40%
Fe 273.955	279476.7	5.2124	mg/L	0.01416	5.2124	mg/L	0.01416	0.27%
Mg 279.077	1214657.9	25.764	mg/L	0.0975	25.764	mg/L	0.0975	0.38%
Mn 257.610	1281935.7	2.7093	mg/L	0.01403	2.7093	mg/L	0.01403	0.52%
Ni 231.604	230778.4	2.6739	mg/L	0.02222	2.6739	mg/L	0.02222	0.83%
Pb 220.353	11780.3	0.5138	mg/L	0.00305	0.5138	mg/L	0.00305	0.59%
Sb 206.836	2308.7	0.6015	mg/L	0.00642	0.6015	mg/L	0.00642	1.07%
Se 196.026	1003.7	0.4870	mg/L	0.00084	0.4870	mg/L	0.00084	0.17%
Tl 190.801	1260.4	0.5121	mg/L	0.00357	0.5121	mg/L	0.00357	0.70%
V 292.402	1012953.2	2.5472	mg/L	0.01258	2.5472	mg/L	0.01258	0.49%
Zn 206.200	249801.5	2.5310	mg/L	0.01409	2.5310	mg/L	0.01409	0.56%
Na 330.237	54779.8	24.343	mg/L	0.1128	24.343	mg/L	0.1128	0.46%
Cd 226.502	83460.3	0.2517	mg/L	0.00056	0.2517	mg/L	0.00056	0.22%
Ti 334.940	2263.6	0.0016	mg/L	0.00007	0.0016	mg/L	0.00007	4.39%
Ca 227.546	16225.4	24.604	mg/L	0.1612	24.604	mg/L	0.1612	0.66%

Mean Data: ICB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	-1492.2	-0.0290	mg/L	0.00070	-0.0290	mg/L	0.00070	2.43%
Cr 267.716	-2.7	0.0000	mg/L	0.00024	0.0000	mg/L	0.00024	>999.9%
Cu 324.752	13036.3	0.0256	mg/L	0.00370	0.0256	mg/L	0.00370	14.42%
Fe 273.955	-103.6	-0.0021	mg/L	0.00200	-0.0021	mg/L	0.00200	96.72%
Mg 279.077	-401.2	-0.0091	mg/L	0.00157	-0.0091	mg/L	0.00157	17.32%
Mn 257.610	69.4	0.0002	mg/L	0.00004	0.0002	mg/L	0.00004	19.51%
Ni 231.604	22.0	0.0003	mg/L	0.00009	0.0003	mg/L	0.00009	28.42%
Sb 206.836	19.4	0.0058	mg/L	0.00089	0.0058	mg/L	0.00089	15.16%
Tl 190.801	-2.4	-0.0010	mg/L	0.00034	-0.0010	mg/L	0.00034	35.28%
V 292.402	170.5	0.0005	mg/L	0.00021	0.0005	mg/L	0.00021	43.64%
Ti 334.940	-598.2	-0.0006	mg/L	0.00010	-0.0006	mg/L	0.00010	17.89%
Ca 227.546	22.0	0.0334	mg/L	0.02310	0.0334	mg/L	0.02310	69.07%

Analysis Begun

Start Time: 2/11/2003 8:42:46 AM
Logged In Analyst: optima2
Spectrometer Model: Optima 3100 XL

Plasma On Time: 2/10/2003 2:41:51 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: D:\pe\optima2\Sample Information\KMG.sif
Results Data Set: A021101
Results Library: D:\pe\optima2\Results\Results.mdb

Sequence No.: 9
Sample ID: ICSA0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/2003 8:42:46 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA0

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	27708754.5	538.02	mg/L	4.468	538.02	mg/L	4.468	0.83%
Cr 267.716	-771.1	0.0002	mg/L	0.00022	0.0002	mg/L	0.00022	121.25%
Cu 324.752	478.2	0.0258	mg/L	0.00007	0.0258	mg/L	0.00007	0.26%
Fe 273.955	9626092.2	191.98	mg/L	1.306	191.98	mg/L	1.306	0.68%
Mg 279.077	23447457.5	531.22	mg/L	3.404	531.22	mg/L	3.404	0.64%
Mn 257.610	-2382.9	0.0097	mg/L	0.00013	0.0097	mg/L	0.00013	1.34%
Ni 231.604	14.8	0.0112	mg/L	0.00018	0.0112	mg/L	0.00018	1.62%
→ Sb 206.836	-37.3	0.0000	mg/L	0.00346	0.0000	mg/L	0.00346	>999.9%
Tl 190.801	-9.0	0.0129	mg/L	0.00039	0.0129	mg/L	0.00039	3.03%
V 292.402	-208.3	-0.0022	mg/L	0.00016	-0.0022	mg/L	0.00016	7.39%
Ti 334.940	8684.5	0.0120	mg/L	0.00015	0.0120	mg/L	0.00015	1.26%
Ca 227.546	361824.3	554.56	mg/L	8.900	554.56	mg/L	8.900	1.60%

Analysis Begun

Start Time: 2/11/2003 8:45:00 AM
Logged In Analyst: optima2
Spectrometer Model: Optima 3100 XL

Plasma On Time: 2/10/2003 2:41:51 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: D:\pe\optima2\Sample Information\KMG.sif
Results Data Set: A021101
Results Library: D:\pe\optima2\Results\Results.mdb

Sequence No.: 10
Sample ID: ICSAB0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/2003 8:45:00 AM

Sample Prep Volume:
Data Type: Original

Mean Data: B0221-08A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	7631462.7	148.18	mg/L	0.283	148.18	mg/L	0.283	0.19%
Cr 267.716	71243.9	0.2072	mg/L	0.00046	0.2072	mg/L	0.00046	0.22%
Cu 324.752	50588.2	0.1119	mg/L	0.00011	0.1119	mg/L	0.00011	0.10%
Fe 273.955	6955704.2	138.72	mg/L	0.231	138.72	mg/L	0.231	0.17%
Mg 279.077	666192.4	15.109	mg/L	0.2297	15.109	mg/L	0.2297	1.52%
Mn 257.610	1074775.4	3.0678	mg/L	0.05940	3.0678	mg/L	0.05940	1.94%
Ni 231.604	7518.9	0.1193	mg/L	0.00113	0.1193	mg/L	0.00113	0.95%
Sb 206.836	5.0	0.0113	mg/L	0.00308	0.0113	mg/L	0.00308	27.26%
Tl 190.801	-42.9	0.0071	mg/L	0.01308	0.0071	mg/L	0.01308	184.64%
V 292.402	112757.6	0.3100	mg/L	0.00036	0.3100	mg/L	0.00036	0.12%
Ti 334.940	3920365.7	3.6350	mg/L	0.00514	3.6350	mg/L	0.00514	0.14%
Ca 227.546	8876.2	12.491	mg/L	0.0966	12.491	mg/L	0.0966	0.77%

Sequence No.: 65
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 57
Date Collected: 2/11/2003 11:31:20 AM

Sample Prep Volume:
Data Type: Original

2/17/03 GP

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	1517559.1	29.467	mg/L	0.7210	29.467	mg/L	0.7210	2.45%
Cr 267.716	12737.7	0.0370	mg/L	0.00022	0.0370	mg/L	0.00022	0.59%
Cu 324.752	3817.3	0.0090	mg/L	0.00037	0.0090	mg/L	0.00037	4.16%
Fe 273.955	863761.2	17.227	mg/L	0.3554	17.227	mg/L	0.3554	2.06%
Mg 279.077	74311.9	1.6841	mg/L	0.03275	1.6841	mg/L	0.03275	1.94%
Mn 257.610	33154.0	0.0951	mg/L	0.00156	0.0951	mg/L	0.00156	1.64%
Ni 231.604	989.1	0.0155	mg/L	0.00073	0.0155	mg/L	0.00073	4.71%
Sb 206.836	-0.1	0.0016	mg/L	0.00181	0.0016	mg/L	0.00181	111.78%
Tl 190.801	-16.9	-0.0042	mg/L	0.00377	-0.0042	mg/L	0.00377	90.70%
V 292.402	18198.2	0.0499	mg/L	0.00040	0.0499	mg/L	0.00040	0.80%
Ti 334.940	982333.8	0.9108	mg/L	0.01934	0.9108	mg/L	0.01934	2.12%
Ca 227.546	572.1	0.7411	mg/L	0.09008	0.7411	mg/L	0.09008	12.15%

Sequence No.: 66
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/2003 11:33:42 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	28051819.6	544.68	mg/L	0.503	544.68	mg/L	0.503	0.09%
Cr 267.716	-758.7	0.0003	mg/L	0.00011	0.0003	mg/L	0.00011	43.42%
Cu 324.752	-10779.3	0.0041	mg/L	0.00033	0.0041	mg/L	0.00033	8.02%
Fe 273.955	9784957.6	195.15	mg/L	0.062	195.15	mg/L	0.062	0.03%
Mg 279.077	23824919.5	539.77	mg/L	0.152	539.77	mg/L	0.152	0.03%
Mn 257.610	-2213.2	0.0104	mg/L	0.00017	0.0104	mg/L	0.00017	1.61%
Ni 231.604	-34.8	0.0106	mg/L	0.00052	0.0106	mg/L	0.00052	4.88%
Sb 206.836	-69.6	-0.0095	mg/L	0.01866	-0.0095	mg/L	0.01866	195.61%
Tl 190.801	4.1	0.0184	mg/L	0.00604	0.0184	mg/L	0.00604	32.77%
V 292.402	-6.3	-0.0016	mg/L	0.00010	-0.0016	mg/L	0.00010	6.20%
Ti 334.940	8441.5	0.0117	mg/L	0.00014	0.0117	mg/L	0.00014	1.17%
Ca 227.546	358456.4	549.36	mg/L	8.246	549.36	mg/L	8.246	1.50%

Sequence No.: 67
Sample ID: ICSAB1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/2003 11:36:20 AM

Sample Prep Volume:
Data Type: Original

SDG B

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 2/11/03 8:36:46 AM

Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
K 766.490	126304.5	48.829	mg/L	0.0292	48.829	mg/L	0.0292	0.06%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/11/03 8:39:03 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
K 766.490	63515.2	24.555	mg/L	0.2327	24.555	mg/L	0.2327	0.95%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/11/03 8:41:23 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
K 766.490	1326.8	0.5129	mg/L	0.01261	0.5129	mg/L	0.01261	2.46%

Sequence No.: 8
Sample ID: ICSA0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/03 8:43:42 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA0

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
K 766.490	605.0	0.2339	mg/L	0.02553	0.2339	mg/L	0.02553	10.92%

Sequence No.: 9
Sample ID: ICSAB0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/03 8:46:01 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB0

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
K 766.490	64141.2	24.797	mg/L	0.3753	24.797	mg/L	0.3753	1.51%

Sequence No.: 10
Sample ID: MB-5552,5552
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 2/11/03 8:48:22 AM

Sample Prep Volume:
Data Type: Original

SDG B

Sequence No.: 11
Sample ID: B0215-12A,5552
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 28
Date Collected: 2/11/03 9:17:21 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0215-12A,5552

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	7883.3	3.0477	mg/L	0.02912	3.0477	mg/L	0.02912	0.96%

Sequence No.: 12
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 9:19:42 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	177.9	0.0688	mg/L	0.01005	0.0688	mg/L	0.01005	14.61%

Sequence No.: 13
Sample ID: ICSAB1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 9:22:01 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	61130.8	23.633	mg/L	0.1888	23.633	mg/L	0.1888	0.80%

Sequence No.: 14
Sample ID: CCV1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 9:24:22 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	59254.2	22.908	mg/L	0.4386	22.908	mg/L	0.4386	1.91%

Sequence No.: 15
Sample ID: CCB1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 9:26:39 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	809.7	0.3130	mg/L	0.00774	0.3130	mg/L	0.00774	2.47%

Sequence No.: 16
Sample ID: B0215-13A,5552
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 29
Date Collected: 2/11/03 9:28:58 AM
Sample Prep Volume:
Data Type: Original

2/11/03

1623

SDG A C

Analysis Begun

Start Time: 2/11/03 10:06:36 AM
Logged In Analyst: Optima1
Spectrometer Model: Optima 3000 DV
Plasma On Time: 2/11/03 8:12:46 AM
Technique: ICP Continuous
Autosampler Model: AS-90

Sample Information File: D:\pe\administrator\Sample Information\Ev.sif
Results Data Set: 021102
Results Library: D:\pe\administrator\Results\Results.mdb

Sequence No.: 1
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 10:06:36 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	20.1	~~0.0087~~	mg/L	0.00620	0.0087	mg/L	0.00620	71.51%

Sequence No.: 2
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 10:08:55 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	58903.4	25.391	mg/L	0.1966	25.391	mg/L	0.1966	0.77%

Sequence No.: 3
Sample ID: MB-5555,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 58
Date Collected: 2/11/03 10:11:16 AM
Sample Prep Volume:
Data Type: Original

Mean Data: MB-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	296.2	0.1277	mg/L	0.04322	0.1277	mg/L	0.04322	33.85%

Sequence No.: 4
Sample ID: LCS-5555,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 59
Date Collected: 2/11/03 10:13:35 AM
Sample Prep Volume:
Data Type: Original

Mean Data: LCS-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	50874.9	21.930	mg/L	0.2603	21.930	mg/L	0.2603	1.19%

Sequence No.: 5
Sample ID: B0215-02B,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 72
Date Collected: 2/11/03 10:15:54 AM
Sample Prep Volume:
Data Type: Original

SDG # C

Dilution: Data Type: Original

Mean Data: B0215-24A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	6068.6	2.6159	mg/L	0.05201	2.6159	mg/L	0.05201	1.99%

Sequence No.: 28
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 11:09:02 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	-468.1	~~-0.2018~~	mg/L	0.03408	-0.2018	mg/L	0.03408	16.89%

Sequence No.: 29
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 11:11:21 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	57517.8	24.794	mg/L	0.0911	24.794	mg/L	0.0911	0.37%

Sequence No.: 30
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 11:13:42 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	55256.6	23.819	mg/L	0.0642	23.819	mg/L	0.0642	0.27%

Sequence No.: 31
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 11:15:59 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	139.1	0.0600	mg/L	0.00847	0.0600	mg/L	0.00847	14.13%

SDG B & C

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 2/11/03 3:23:17 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	335532.6	50.234	mg/L	0.5783	50.234	mg/L	0.5783	1.15%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/11/03 3:25:35 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	167912.8	25.139	mg/L	0.1705	25.139	mg/L	0.1705	0.68%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/11/03 3:27:53 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	2038.2	0.3051	mg/L	0.01241	0.3051	mg/L	0.01241	4.07%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/11/03 3:30:12 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1908.9	0.2858	mg/L	0.00749	0.2858	mg/L	0.00749	2.62%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/11/03 3:32:31 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	180848.7	27.076	mg/L	0.2436	27.076	mg/L	0.2436	0.90%

Sequence No.: 10
Sample ID: MB-5555,5555
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 58
Date Collected: 2/11/03 3:34:53 PM

Sample Prep Volume:
Data Type: Original

SDG B + C

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Na 589.592	999.4	0.1496	mg/L	0.00955	0.1496	mg/L	0.00955	6.38%

Sequence No.: 49
Sample ID: B0215-23A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 45
Date Collected: 2/11/03 5:04:50 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0215-23A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Na 589.592	473.7	0.0709	mg/L	0.00566	0.0709	mg/L	0.00566	7.98%

Sequence No.: 50
Sample ID: B0215-24A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 46
Date Collected: 2/11/03 5:07:14 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0215-24A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Na 589.592	-227.6	-0.0341	mg/L	0.01889	-0.0341	mg/L	0.01889	55.43%

Sequence No.: 51
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 5:09:35 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Na 589.592	-319.4	~~-0.0478~~	~~mg~~/L	0.01714	-0.0478	mg/L	0.01714	35.84%

Sequence No.: 52
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 5:11:54 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Na 589.592	182306.0	27.294	mg/L	0.2857	27.294	mg/L	0.2857	1.05%

Sequence No.: 53
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 5:14:16 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Na 589.592	166167.3	24.878	mg/L	0.2319	24.878	mg/L	0.2319	0.93%

Sequence No.: 54
Sample ID: CCB
Autosampler Location: 4
Date Collected: 2/11/03 5:16:34 PM

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SS-115	0.32	B	Aluminum	23874	-0.475	5950	-0.12	na	na
Arsenic	FTA-SS-115	1.2		Aluminum	23874	-0.345	5950	-0.09	na	na
Barium	FTA-SS-115	17.9		Aluminum	23874	-0.425	5950	-0.11	na	na
Cadmium	FTA-SS-115	0.038	U	Aluminum	23874	0.115	5950	0.03	na	na
Cobalt	FTA-SS-115	0.8		Aluminum	23874	-0.095	5950	-0.02	na	na
Copper	FTA-SS-115	2.8	B	Aluminum	23874	0.8	5950	0.20	na	na
Lead	FTA-SS-115	6.8		Aluminum	23874	0.65	5950	0.16	na	na
Manganese	FTA-SS-115	22.7		Aluminum	23874	-0.365	5950	-0.09	na	na
Potassium	FTA-SS-115	283		Aluminum	23874	11.695	5950	2.91	na	na
Selenium	FTA-SS-115	0.49	U	Aluminum	23874	-1.02	5950	-0.25	na	~~UJ~~
Silver	FTA-SS-115	0.11	U	Aluminum	23874	-1.065	5950	-0.27	na	~~UJ~~
Sodium	FTA-SS-115	4.5	U	Aluminum	23874	14.29	5950	3.56	na	na
Thallium	FTA-SS-115	0.18		Aluminum	23874	0.27	5950	0.07	J K	na
Vanadium	FTA-SS-115	6.2		Aluminum	23874	-0.1	5950	-0.02	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-112-0204	0.29	B	Aluminum	23874	-0.475	8390	-0.17	na	na
Arsenic	FTA-SU-112-0204	1.4		Aluminum	23874	-0.345	8390	-0.12	na	na
Barium	FTA-SU-112-0204	27.1		Aluminum	23874	-0.425	8390	-0.15	na	na
Cadmium	FTA-SU-112-0204	0.038	U	Aluminum	23874	0.115	8390	0.04	na	na
Cobalt	FTA-SU-112-0204	0.57		Aluminum	23874	-0.095	8390	-0.03	na	na
Copper	FTA-SU-112-0204	3.8	B	Aluminum	23874	0.8	8390	0.28	na	na
Lead	FTA-SU-112-0204	3.3		Aluminum	23874	0.65	8390	0.23	na	na
Manganese	FTA-SU-112-0204	18.1		Aluminum	23874	-0.365	8390	-0.13	na	na
Potassium	FTA-SU-112-0204	172		Aluminum	23874	11.695	8390	4.11	na	na
Selenium	FTA-SU-112-0204	0.49	U	Aluminum	23874	-1.02	8390	-0.36	na	~~UJ~~
Silver	FTA-SU-112-0204	0.11	U	Aluminum	23874	-1.065	8390	-0.37	na	~~UJ~~
Sodium	FTA-SU-112-0204	12	B	Aluminum	23874	14.29	8390	5.02	na	na
Thallium	FTA-SU-112-0204	0.26		Aluminum	23874	0.27	8390	0.09	J K	na
Vanadium	FTA-SU-112-0204	6.3		Aluminum	23874	-0.1	8390	-0.04	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-113-0709	0.5	B	Aluminum	23874	-0.475	7320	-0.15	na	na
Arsenic	FTA-SU-113-0709	3.1		Aluminum	23874	-0.345	7320	-0.11	na	na
Barium	FTA-SU-113-0709	15.2		Aluminum	23874	-0.425	7320	-0.13	na	na
Cadmium	FTA-SU-113-0709	0.033	U	Aluminum	23874	0.115	7320	0.04	na	na
Cobalt	FTA-SU-113-0709	0.35	B	Aluminum	23874	-0.095	7320	-0.03	na	na
Copper	FTA-SU-113-0709	3.1	B	Aluminum	23874	0.8	7320	0.25	na	na
Lead	FTA-SU-113-0709	2.7		Aluminum	23874	0.65	7320	0.20	na	na
Manganese	FTA-SU-113-0709	13.6		Aluminum	23874	-0.365	7320	-0.11	na	na
Potassium	FTA-SU-113-0709	320		Aluminum	23874	11.695	7320	3.59	na	na
Selenium	FTA-SU-113-0709	0.43	U	Aluminum	23874	-1.02	7320	-0.31	na	~~UJ~~
Silver	FTA-SU-113-0709	0.095	U	Aluminum	23874	-1.065	7320	-0.33	na	~~UJ~~
Sodium	FTA-SU-113-0709	11	B	Aluminum	23874	14.29	7320	4.38	na	na
Thallium	FTA-SU-113-0709	0.32		Aluminum	23874	0.27	7320	0.08	J K	na
Vanadium	FTA-SU-113-0709	13.3		Aluminum	23874	-0.1	7320	-0.03	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-114-0204	0.2	B	Aluminum	23874	-0.475	6740	-0.13	na	na
Arsenic	FTA-SU-114-0204	1.5		Aluminum	23874	-0.345	6740	-0.10	na	na
Barium	FTA-SU-114-0204	21.3		Aluminum	23874	-0.425	6740	-0.12	na	na
Cadmium	FTA-SU-114-0204	0.033	U	Aluminum	23874	0.115	6740	0.03	na	na
Cobalt	FTA-SU-114-0204	1		Aluminum	23874	-0.095	6740	-0.03	na	na
Copper	FTA-SU-114-0204	2.7	B	Aluminum	23874	0.8	6740	0.23	na	na
Lead	FTA-SU-114-0204	3.9		Aluminum	23874	0.65	6740	0.18	na	na
Manganese	FTA-SU-114-0204	49		Aluminum	23874	-0.365	6740	-0.10	na	na
Potassium	FTA-SU-114-0204	167		Aluminum	23874	11.695	6740	3.30	na	na
Selenium	FTA-SU-114-0204	0.42	U	Aluminum	23874	-1.02	6740	-0.29	na	~~UJ~~
Silver	FTA-SU-114-0204	0.094	U	Aluminum	23874	-1.065	6740	-0.30	na	~~UJ~~
Sodium	FTA-SU-114-0204	10	B	Aluminum	23874	14.29	6740	4.03	na	na
Thallium	FTA-SU-114-0204	0.14	U	Aluminum	23874	0.27	6740	0.08	na	na
Vanadium	FTA-SU-114-0204	7.7		Aluminum	23874	-0.1	6740	-0.03	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-114-0709	0.16	U	Aluminum	23874	-0.475	5520	-0.11	na	~~UJ~~ UL
Arsenic	FTA-SU-114-0709	1.6		Aluminum	23874	-0.345	5520	-0.08	na	na
Barium	FTA-SU-114-0709	15.8		Aluminum	23874	-0.425	5520	-0.10	na	na
Cadmium	FTA-SU-114-0709	0.037	U	Aluminum	23874	0.115	5520	0.03	na	na
Cobalt	FTA-SU-114-0709	0.81		Aluminum	23874	-0.095	5520	-0.02	na	na
Copper	FTA-SU-114-0709	1.1	B	Aluminum	23874	0.8	5520	0.18	na	na
Lead	FTA-SU-114-0709	2.1		Aluminum	23874	0.65	5520	0.15	na	na
Manganese	FTA-SU-114-0709	40.9		Aluminum	23874	-0.365	5520	-0.08	na	na
Potassium	FTA-SU-114-0709	219		Aluminum	23874	11.695	5520	2.70	na	na
Selenium	FTA-SU-114-0709	0.47	U	Aluminum	23874	-1.02	5520	-0.24	na	~~UJ~~ UL
Silver	FTA-SU-114-0709	0.1	U	Aluminum	23874	-1.065	5520	-0.25	na	~~UJ~~ UL
Sodium	FTA-SU-114-0709	5.7	B	Aluminum	23874	14.29	5520	3.30	na	na
Thallium	FTA-SU-114-0709	0.18		Aluminum	23874	0.27	5520	0.06	~~J~~ UL	na
Vanadium	FTA-SU-114-0709	6.5		Aluminum	23874	-0.1	5520	-0.02	na	na

(3)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-116-0709	0.91	B	Aluminum	23874	-0.475	9310	-0.19	na	na
Arsenic	FTA-SU-116-0709	2.5		Aluminum	23874	-0.345	9310	-0.13	na	na
Barium	FTA-SU-116-0709	32.1		Aluminum	23874	-0.425	9310	-0.17	na	na
Cadmium	FTA-SU-116-0709	0.037	U	Aluminum	23874	0.115	9310	0.04	na	na
Cobalt	FTA-SU-116-0709	1.9		Aluminum	23874	-0.095	9310	-0.04	na	na
Copper	FTA-SU-116-0709	2.4	B	Aluminum	23874	0.8	9310	0.31	na	na
Lead	FTA-SU-116-0709	3.8		Aluminum	23874	0.65	9310	0.25	na	na
Manganese	FTA-SU-116-0709	150		Aluminum	23874	-0.365	9310	-0.14	na	na
Potassium	FTA-SU-116-0709	328		Aluminum	23874	11.695	9310	4.56	na	na
Selenium	FTA-SU-116-0709	0.47	U	Aluminum	23874	-1.02	9310	-0.40	na	~~UJ~~ UL
Silver	FTA-SU-116-0709	0.11	U	Aluminum	23874	-1.065	9310	-0.42	na	~~UJ~~ UL
Sodium	FTA-SU-116-0709	11.2	B	Aluminum	23874	14.29	9310	5.57	na	na
Thallium	FTA-SU-116-0709	0.16	U	Aluminum	23874	0.27	9310	0.11	na	na
Vanadium	FTA-SU-116-0709	12		Aluminum	23874	-0.1	9310	-0.04	na	na

(2)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-118-0204	0.41	B	Aluminum	23874	-0.475	9040	-0.18	na	na
Arsenic	FTA-SU-118-0204	1.4		Aluminum	23874	-0.345	9040	-0.13	na	na
Barium	FTA-SU-118-0204	27.1		Aluminum	23874	-0.425	9040	-0.16	na	na
Cadmium	FTA-SU-118-0204	0.036	U	Aluminum	23874	0.115	9040	0.04	na	na
Cobalt	FTA-SU-118-0204	1		Aluminum	23874	-0.095	9040	-0.04	na	na
Copper	FTA-SU-118-0204	3.4		Aluminum	23874	0.8	9040	0.30	na	na
Lead	FTA-SU-118-0204	3.4		Aluminum	23874	0.65	9040	0.25	na	na
Manganese	FTA-SU-118-0204	46.1		Aluminum	23874	-0.365	9040	-0.14	na	na
Potassium	FTA-SU-118-0204	228		Aluminum	23874	11.695	9040	4.43	na	na
Selenium	FTA-SU-118-0204	0.47	U	Aluminum	23874	-1.02	9040	-0.39	na	~~UJ~~ UL
Silver	FTA-SU-118-0204	0.1	U	Aluminum	23874	-1.065	9040	-0.40	na	~~UJ~~ UL
Sodium	FTA-SU-118-0204	4.3	U	Aluminum	23874	14.29	9040	5.41	na	na
Thallium	FTA-SU-118-0204	0.16	U	Aluminum	23874	0.27	9040	0.10	na	na
Vanadium	FTA-SU-118-0204	8.1		Aluminum	23874	-0.1	9040	-0.04	na	na

(2)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-DUP3	0.46	B	Aluminum	23874	-0.475	6180	-0.12	na	na
Arsenic	FTA-SU-DUP3	1.2		Aluminum	23874	-0.345	6180	-0.09	na	na
Barium	FTA-SU-DUP3	19.2		Aluminum	23874	-0.425	6180	-0.11	na	na
Cadmium	FTA-SU-DUP3	0.033	U	Aluminum	23874	0.115	6180	0.03	na	na
Cobalt	FTA-SU-DUP3	0.82		Aluminum	23874	-0.095	6180	-0.02	na	na
Copper	FTA-SU-DUP3	2.4	B	Aluminum	23874	0.8	6180	0.21	na	na
Lead	FTA-SU-DUP3	3.3		Aluminum	23874	0.65	6180	0.17	na	na
Manganese	FTA-SU-DUP3	30.2		Aluminum	23874	-0.365	6180	-0.09	na	na
Potassium	FTA-SU-DUP3	142		Aluminum	23874	11.695	6180	3.03	na	na
Selenium	FTA-SU-DUP3	0.42	U	Aluminum	23874	-1.02	6180	-0.26	na	~~UJ~~ UL
Silver	FTA-SU-DUP3	0.093	U	Aluminum	23874	-1.065	6180	-0.28	na	~~UJ~~ UL
Sodium	FTA-SU-DUP3	9.1	B	Aluminum	23874	14.29	6180	3.70	na	na
Thallium	FTA-SU-DUP3	0.14	U	Aluminum	23874	0.27	6180	0.07	na	na
Vanadium	FTA-SU-DUP3	6.6		Aluminum	23874	-0.1	6180	-0.03	na	na

(2)

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SV1160204S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	14.9688		0.1630	U	24.73	60.5	N	P
Arsenic	75-125	24.3189		0.9389	B	24.73	94.5		P
Barium	75-125	530.5181		12.2812		494.57	104.8		P
Beryllium	75-125	12.7278		0.2387	B	12.34	101.2		P
Cadmium	75-125	11.7218		0.0380	U	12.34	95.0		P
Calcium									NR
Chromium	75-125	54.6470		5.1035		49.46	100.2		P
Cobalt	75-125	124.3859		0.7028	B	123.37	100.3		P
Copper	75-125	64.8201		1.7043		61.41	102.8		P
Iron									NR
Lead	75-125	26.2631		2.5818		24.73	95.8		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.7827		0.0181	U	0.91	86.0		CV
Nickel	75-125	126.2946		1.7450	B	123.37	101.0		P
Potassium									NR
Selenium	75-125	21.2785		0.4891	U	24.73	86.0		P
Silver	75-125	57.5747		0.1087	U	61.41	93.8		P
Sodium									NR
Thallium	75-125	23.9660		0.1652	B	24.73	96.2		P
Vanadium	75-125	128.6660		5.7052		123.37	99.7		P
Zinc	75-125	126.0427		3.1555		123.37	99.6		P
Cyanide									NR

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.
SV1160204A

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		493.14		3.00	U	455.0	108.4		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

SV1160204D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0 % Solids for Duplicate: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		5320.0414		4794.6134		10.4		P
Antimony		0.1630	U	0.3242	B	200.0	*	P
Arsenic		0.9389	B	0.8758	B	7.0		P
Barium		12.2812		10.7031	B	13.7		P
Beryllium		0.2387	B	0.2143	B	10.8		P
Cadmium		0.0380	U	0.0380	U			P
Calcium	43.4783	197.1475		175.1469		11.8		P
Chromium	1.0870	5.1035		4.4531		13.6		P
Cobalt		0.7028	B	0.5466	B	25.0	*	P
Copper		1.7043		1.5346	B	10.5		P
Iron		2464.6155		2216.3988		10.6		P
Lead	0.5435	2.5818		2.3844		7.9		P
Magnesium		278.7281		243.0939		13.7		P
Manganese	2.7174	16.7570		13.4294		22.0	*	P
Mercury		0.0181	U	0.0181	U			CV
Nickel		1.7450	B	1.6122	B	7.9		P
Potassium	54.3478	210.2965		176.9934		17.2		P
Selenium		0.4891	U	0.4891	U			P
Silver		0.1087	U	0.1087	U			P
Sodium		4.5109	U	4.5109	U			P
Thallium		0.1652	B	0.1745	B	5.5		P
Vanadium	2.7174	5.7052		4.8573		16.1		P
Zinc	2.7174	3.1555		2.7935		12.2		P
Cyanide								NR

OK

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9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SV1160204L

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B_

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	97888.76		99244.66		1.4		P
Antimony	3.00	U	15.00	U			P
Arsenic	17.28	B	15.96	B	7.6		P
Barium	225.97		238.68	B	5.6		P
Beryllium	4.39	B	5.32	B	21.2 OK		P
Cadmium	0.70	U	3.50	U			P
Calcium	3627.51		3979.63	B	9.7		P
Chromium	93.90		97.10	B	3.4		P
Cobalt	12.93	B	18.03	B	39.4 OK		P
Copper	31.36		52.88	B	68.6 OK		P
Iron	45348.92		47453.90		4.6		P
Lead	47.50		51.98		9.4		P
Magnesium	5128.60		5307.84		3.5		P
Manganese	308.33		351.59		14.0	E	P
Mercury							NR
Nickel	32.11	B	45.15	B	40.6 OK		P
Potassium	3869.46		3225.42	B	16.6 OK		P
Selenium	9.00	U	45.00	U			P
Silver	2.00	U	10.00	U			P
Sodium	83.00	U	415.00	U			P
Thallium	3.04	B	15.00	U	100.0 OK		P
Vanadium	104.98		111.32	B	6.0		P
Zinc	58.06		97.84	B	68.5 OK		P

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A_

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215A_

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B_

ICP ID Number: Date: 02/01/03___

Flame AA ID Number: COMM_FIMS___

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION___ Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215C_

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215C_

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FB-020503	02/10/03		50
LCSW	02/10/03		50
PBW	02/10/03		50
RB-020403	02/10/03		50
RB-020503	02/10/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FB-020503	02/10/03		128
LCSW	02/10/03		100
PBW	02/10/03		100
RB-020403	02/10/03		130
RB-020503	02/10/03		132

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTASS112	02/10/03	1.20	50
FTASS113	02/10/03	1.04	50
FTASS114	02/10/03	1.16	50
FTASS115	02/10/03	1.04	50
FTASS116	02/10/03	1.04	50
LCSS	02/10/03	0.50	50
PBS	02/10/03	1.00	50
SV1120204	02/10/03	1.01	50
SV1120709	02/10/03	1.02	50
SV1130204	02/10/03	1.00	50
SV1130709	02/10/03	1.14	50
SV1140204	02/10/03	1.17	50
SV1140709	02/10/03	1.04	50
SV1150204	02/10/03	1.09	50
SV1150810	02/10/03	1.05	50
SV1160204	02/10/03	1.00	50
SV1160204D	02/10/03	1.00	50
SV1160204S	02/10/03	1.00	50
SVDUP3	02/10/03	1.19	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTASS112	02/10/03	0.60	100
FTASS113	02/10/03	0.68	100
FTASS114	02/10/03	0.64	100
FTASS115	02/10/03	0.63	100
FTASS116	02/10/03	0.71	100
LCSS	02/10/03	0.60	100
PBS	02/10/03	0.60	100
SV1120204	02/10/03	0.62	100
SV1120709	02/10/03	0.65	100
SV1130204	02/10/03	0.60	100
SV1130709	02/10/03	0.69	100
SV1140204	02/10/03	0.65	100
SV1140709	02/10/03	0.61	100
SV1150204	02/10/03	0.60	100
SV1150810	02/10/03	0.63	100
SV1160204	02/10/03	0.60	100
SV1160204D	02/10/03	0.60	100
SV1160204S	02/10/03	0.60	100
SVDUP3	02/10/03	0.75	100

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0215C

Method: P___

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTASS117	02/10/03	1.04	50
FTASS118	02/10/03	1.11	50
LCSS	02/10/03	0.50	50
PBS	02/10/03	1.00	50
SV1160709	02/10/03	1.07	50
SV1170204	02/10/03	1.05	50
SV1170709	02/10/03	1.05	50
SV1180204	02/10/03	1.09	50
SV118070	02/10/03	1.05	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTASS117	02/10/03	0.61	100
FTASS118	02/10/03	0.62	100
LCSS	02/10/03	0.60	100
PBS	02/10/03	0.60	100
SV1160709	02/10/03	0.61	100
SV1170204	02/10/03	0.63	100
SV1170709	02/10/03	0.64	100
SV1180204	02/10/03	0.75	100
SV118070	02/10/03	0.61	100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALK BSA ABS BAE BED CDA CAR CRO CUE FEB PBG MGN MNG HNI KSE SAG NAA TAL VZN CNN
S0	1.00	0950		X
S1	1.00	0952		X
S2	1.00	0954		X
S3	1.00	0957		X
ZZZZZZ	1.00	0959		
ICV	1.00	1001		X
ICB	1.00	1003		X
ICSA	1.00	1007		
ICSAB	1.00	1010		X
PBW	1.00	1012		X
LCSW	1.00	1014		X
RB-020403	1.00	1017		X
RB-020503	1.00	1019		X
FB-020503	1.00	1021		X
ZZZZZZ	1.00	1024		
CCV	1.00	1026		X
CCB	1.00	1028		X
ZZZZZZ	1.00	1030		
ZZZZZZ	1.00	1033		
ZZZZZZ	1.00	1035		
ZZZZZZ	1.00	1037		
ZZZZZZ	1.00	1040		
ZZZZZZ	1.00	1042		
ZZZZZZ	1.00	1044		
ZZZZZZ	1.00	1046		
CCV	1.00	1049		X
CCB	1.00	1051		X
ZZZZZZ	1.00	1053		
ZZZZZZ	1.00	1056		
ZZZZZZ	1.00	1058		
ZZZZZZ	1.00	1100		
ZZZZZZ	1.00	1103		

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALKALINITY	SULFATE	AMMONIA	BOD	BOD EA	COD	COD DA	COD RO	COD UE	FLUORIDE	PHENOLICS	MERCURY	MANGANESE	IRON	NITRATE	KJELDAHL	SULFIDE	ANIONS	TOTAL	VOLATILES	ZINC	CYANIDE
ZZZZZZ	1.00	1105																							
ZZZZZZ	1.00	1107																							
ICSA	1.00	1110																	X						
ICSAB	1.00	1112																	X						
CCV	1.00	1114																	X						
CCB	1.00	1117																	X						

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: OPTIMA 2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S1	1.00	1220		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S2	1.00	1224		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S3	1.00	1228		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1232																										
ICV	1.00	1235		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ICB	1.00	1239		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ICSA	1.00	1243		X						X				X		X												
ICSAB	1.00	1246		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
PBW	1.00	1248		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
LCSW	1.00	1253		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1257																										
RB-020403	1.00	1301		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
RB-020503	1.00	1305		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
FB-020503	1.00	1309		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ICSA	1.00	1313		X						X				X		X												
ICSAB	1.00	1316		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCV	1.00	1318		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCB	1.00	1322		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes
S0	1.00	1515		X
S1	1.00	1517		X
S2	1.00	1519		X
S3	1.00	1522		X
ZZZZZZ	1.00	1524		
ICV	1.00	1526		X
ICB	1.00	1529		X
ICSA	1.00	1531		
ICSAB	1.00	1533		X
PBW	1.00	1536		X
LCSW	1.00	1538		X
RB-020403	1.00	1540		X
RB-020503	1.00	1542		X
FB-020503	1.00	1545		X
ZZZZZZ	1.00	1547		
CCV	1.00	1549		X
CCB	1.00	1552		X
ZZZZZZ	1.00	1554		
ZZZZZZ	1.00	1556		
ZZZZZZ	1.00	1559		
ZZZZZZ	1.00	1601		
ZZZZZZ	1.00	1603		
ZZZZZZ	1.00	1605		
ZZZZZZ	1.00	1608		
ZZZZZZ	1.00	1610		
CCV	1.00	1612		X
CCB	1.00	1615		X
ZZZZZZ	1.00	1617		
ZZZZZZ	1.00	1619		
ZZZZZZ	1.00	1622		
ZZZZZZ	1.00	1624		
ZZZZZZ	1.00	1626		

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes: ALL	SBS	ABA	BBE	CCD	CCA	CCR	CCO	CCU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1629																								
ZZZZZZ	1.00	1631																								
ZZZZZZ	1.00	1633																								
ZZZZZZ	1.00	1636																								
CCV	1.00	1638																				X				
CCB	1.00	1640																				X				
ZZZZZZ	1.00	1642																								
ZZZZZZ	1.00	1645																								
ZZZZZZ	1.00	1647																								
ZZZZZZ	1.00	1649																								
ZZZZZZ	1.00	1652																								
ZZZZZZ	1.00	1654																								
ZZZZZZ	1.00	1656																								
CCV	1.00	1659																				X				
CCB	1.00	1701																				X				
ZZZZZZ	1.00	1703																								
ZZZZZZ	1.00	1706																								
ZZZZZZ	1.00	1708																								
ICSA	1.00	1710																								
ICSAB	1.00	1713																				X				
CCV	1.00	1715																				X				
CCB	1.00	1717																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALB ASA BBE CDA CAR CCO CUE FEB MGN MNG HGI NK SE AGA NAL TV ZN CN
S0	1.00	1104		X
S0.2	1.00	1106		X
S1	1.00	1107		X
S2	1.00	1108		X
S5	1.00	1110		X
S10	1.00	1111		X
ICV	1.00	1112		X
ICB	1.00	1114		X
PBW	1.00	1115		X
LCSW	1.00	1116		X
ZZZZZZ	1.00	1118		
ZZZZZZ	1.00	1119		
ZZZZZZ	1.00	1120		
ZZZZZZ	1.00	1122		
ZZZZZZ	1.00	1123		
ZZZZZZ	1.00	1124		
CCV	1.00	1126		X
CCB	1.00	1127		X
ZZZZZZ	1.00	1128		
ZZZZZZ	1.00	1130		
ZZZZZZ	1.00	1131		
ZZZZZZ	1.00	1132		
ZZZZZZ	1.00	1134		
ZZZZZZ	1.00	1135		
ZZZZZZ	1.00	1136		
RB-020403	1.00	1137		X
CCV	1.00	1139		X
CCB	1.00	1140		X
RB-020503	1.00	1142		X
FB-020503	1.00	1143		X
ZZZZZZ	1.00	1144		
ZZZZZZ	1.00	1146		

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ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215A

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALBS ASAS BAE BDA CAR COU CUE FEB PGN MGI HGI NI KSE SGA ANA TAL VN ZN CN
ZZZZZZ	1.00	1147		
ZZZZZZ	1.00	1148		
ZZZZZZ	1.00	1149		
ZZZZZZ	1.00	1151		
CCV	1.00	1152		X
CCB	1.00	1154		X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215B_

Instrument ID Number: OPTIMA_2A_ Method: P

Start Date: 02/10/03 End Date: 02/10/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
S0	1.00	1559		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S1	1.00	1603		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S2	1.00	1607		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S3	1.00	1611		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1615																												
ZZZZZZ	1.00	1619																												
ZZZZZZ	1.00	1621																												
ZZZZZZ	1.00	1625																												
ZZZZZZ	1.00	1630																												
ICV	1.00	1635		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICB	1.00	1639		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICSA	1.00	1643		X						X				X		X														
ICSAB	1.00	1646		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1648																												
PBS	1.00	1652		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
LCSS	1.00	1657		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
FTASS112	1.00	1701		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1120204	1.00	1705		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1120709	1.00	1709		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
FTASS113	1.00	1713		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCV	1.00	1718		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCB	1.00	1722		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1130204	1.00	1726		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1130709	1.00	1730		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
FTASS114	1.00	1734		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1140204	1.00	1738		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1140709	1.00	1742		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SVDUP3	1.00	1746		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1751																												
ZZZZZZ	1.00	1753																												
CCV	1.00	1756		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCB	1.00	1800		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/10/03 End Date: 02/10/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FTASS115	1.00	1804		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1150204	1.00	1808		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1150810	1.00	1812		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
FTASS116	1.00	1816		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1160204	1.00	1821		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1160204D	1.00	1825		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1160204S	1.00	1829				X	X	X	X		X	X	X		X				X		X	X		X	X	X	
SV1160204L	1.00	1833		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1837		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1841		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1845																												
ZZZZZZ	1.00	1850																												
ZZZZZZ	1.00	1854																												
ZZZZZZ	1.00	1858																												
ZZZZZZ	1.00	1902																												
ZZZZZZ	1.00	1906																												
ICSA	1.00	1910		X						X				X		X														
ICSAB	1.00	1913		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1916		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1920		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215B

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 02/11/03___ End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0817			X																									
S1	1.00	0821			X																									
S2	1.00	0824			X																									
S3	1.00	0828			X																									
ZZZZZZ	1.00	0831																												
ZZZZZZ	1.00	0834																												
ICV	1.00	0837			X																									
ICB	1.00	0841			X																									
ICSA	1.00	0844																												
ICSAB	1.00	0846			X																									
ZZZZZZ	1.00	0849																												
PBS	1.00	0852			X																									
LCSS	1.00	0858			X																									
FTASS112	1.00	0901			X																									
SV1120204	1.00	0904			X																									
SV1120709	1.00	0906			X																									
FTASS113	1.00	0909			X																									
CCV	1.00	0912			X																									
CCB	1.00	0916			X																									
SV1130204	1.00	0919			X																									
SV1130709	1.00	0922			X																									
FTASS114	1.00	0924			X																									
SV1140204	1.00	0927			X																									
SV1140709	1.00	0929			X																									
SVDUP3	1.00	0932			X																									
ZZZZZZ	1.00	0935																												
ZZZZZZ	1.00	0937																												
CCV	1.00	0940			X																									
CCB	1.00	0944			X																									
FTASS115	1.00	0947			X																									
SV1150204	1.00	0950			X																									
SV1150810	1.00	0952			X																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: ____ SDG No.: B0215B_

Instrument ID Number: OPTIMA_2A_____ Method: P

Start Date: 02/11/03___ End Date: 02/11/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FTASS116	1.00	0955			X																						
SV1160204	1.00	0957			X																						
SV1160204D	1.00	1000			X																						
SV1160204S	1.00	1002			X																						
SV1160204L	1.00	1006			X																						
CCV	1.00	1010			X																						
CCB	1.00	1014			X																						
SV1160204A	1.00	1017			X																						
ZZZZZZ	1.00	1020																									
ZZZZZZ	1.00	1024																									
ZZZZZZ	1.00	1028																									
ZZZZZZ	1.00	1030																									
ZZZZZZ	1.00	1033																									
ICSA	1.00	1035																									
ICSAB	1.00	1038			X																						
CCV	1.00	1041			X																						
CCB	1.00	1045			X																						

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0828																	X							
S1	1.00	0831																	X							
S2	1.00	0833																	X							
S3	1.00	0835																	X							
ZZZZZZ	1.00	0837																								
ICV	1.00	0840																	X							
ICB	1.00	0842																	X							
ICSA	1.00	0844																								
ICSAB	1.00	0847																	X							
PBS	1.00	0849																	X							
LCSS	1.00	0851																	X							
FTASS112	1.00	0854																	X							
SV1120204	1.00	0855																	X							
SV1120709	1.00	0857																	X							
FTASS113	1.00	0900																	X							
CCV	1.00	0902																	X							
CCB	1.00	0904																	X							
SV1130204	1.00	0906																	X							
SV1130709	1.00	0909																	X							
FTASS114	1.00	0911																	X							
SV1140204	1.00	0913																	X							
SV1140709	1.00	0916																	X							
SVDUP3	1.00	0918																	X							
ICSA	1.00	0920																								
ICSAB	1.00	0923																	X							
CCV	1.00	0925																	X							
CCB	1.00	0927																	X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: ___ SAS No.: SDG No.: B0215B_

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/11/03___ End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																												
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0950																		X							
S1	1.00	0952																		X							
S2	1.00	0954																		X							
S3	1.00	0957																		X							
ZZZZZZ	1.00	0959																									
ICV	1.00	1001																		X							
ICB	1.00	1003																		X							
ICSA	1.00	1007																									
ICSAB	1.00	1010																		X							
ZZZZZZ	1.00	1012																									
ZZZZZZ	1.00	1014																									
ZZZZZZ	1.00	1017																									
ZZZZZZ	1.00	1019																									
ZZZZZZ	1.00	1021																									
FTASS115	1.00	1024																		X							
CCV	1.00	1026																		X							
CCB	1.00	1028																		X							
SV1150204	1.00	1030																		X							
SV1150810	1.00	1033																		X							
FTASS116	1.00	1035																		X							
SV1160204	1.00	1037																		X							
SV1160204D	1.00	1040																		X							
SV1160204L	1.00	1042																		X							
ZZZZZZ	1.00	1044																									
ZZZZZZ	1.00	1046																									
CCV	1.00	1049																		X							
CCB	1.00	1051																		X							
ZZZZZZ	1.00	1053																									
ZZZZZZ	1.00	1056																									
ZZZZZZ	1.00	1058																									
ZZZZZZ	1.00	1100																									
ZZZZZZ	1.00	1103																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215B_

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/11/03___ End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1105																									
ZZZZZZ	1.00	1107																									
ICSA	1.00	1110																									
ICSAB	1.00	1112																		X							
CCV	1.00	1114																		X							
CCB	1.00	1117																		X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1515																				X				
S1	1.00	1517																				X				
S2	1.00	1519																				X				
S3	1.00	1522																				X				
ZZZZZZ	1.00	1524																								
ICV	1.00	1526																				X				
ICB	1.00	1529																				X				
ICSA	1.00	1531																								
ICSAB	1.00	1533																				X				
ZZZZZZ	1.00	1536																								
ZZZZZZ	1.00	1538																								
ZZZZZZ	1.00	1540																								
ZZZZZZ	1.00	1542																								
ZZZZZZ	1.00	1545																								
PBS	1.00	1547																				X				
CCV	1.00	1549																				X				
CCB	1.00	1552																				X				
LCSS	1.00	1554																				X				
FTASS112	1.00	1556																				X				
SV1120204	1.00	1559																				X				
SV1120709	1.00	1601																				X				
FTASS113	1.00	1603																				X				
SV1130204	1.00	1605																				X				
SV1130709	1.00	1608																				X				
FTASS114	1.00	1610																				X				
CCV	1.00	1612																				X				
CCB	1.00	1615																				X				
SV1140204	1.00	1617																				X				
SV1140709	1.00	1619																				X				
SVDUP3	1.00	1622																				X				
FTASS115	1.00	1624																				X				
SV1150204	1.00	1626																				X				

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0215B

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/11/03___ End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
SV1150810	1.00	1629																				X				
FTASS116	1.00	1631																				X				
SV1160204	1.00	1633																				X				
SV1160204D	1.00	1636																				X				
CCV	1.00	1638																				X				
CCB	1.00	1640																				X				
SV1160204L	1.00	1642																				X				
ZZZZZZ	1.00	1645																								
ZZZZZZ	1.00	1647																								
ZZZZZZ	1.00	1649																								
ZZZZZZ	1.00	1652																								
ZZZZZZ	1.00	1654																								
ZZZZZZ	1.00	1656																								
CCV	1.00	1659																				X				
CCB	1.00	1701																				X				
ZZZZZZ	1.00	1703																								
ZZZZZZ	1.00	1706																								
ZZZZZZ	1.00	1708																								
ICSA	1.00	1710																								
ICSAB	1.00	1713																				X				
CCV	1.00	1715																				X				
CCB	1.00	1717																				X				

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1104																X									
S0.2	1.00	1106																X									
S1	1.00	1107																X									
S2	1.00	1108																X									
S5	1.00	1110																X									
S10	1.00	1111																X									
ICV	1.00	1112																X									
ICB	1.00	1114																X									
ZZZZZZ	1.00	1115																									
ZZZZZZ	1.00	1116																									
ZZZZZZ	1.00	1118																									
ZZZZZZ	1.00	1119																									
ZZZZZZ	1.00	1120																									
ZZZZZZ	1.00	1122																									
ZZZZZZ	1.00	1123																									
ZZZZZZ	1.00	1124																									
CCV	1.00	1126																X									
CCB	1.00	1127																X									
ZZZZZZ	1.00	1128																									
ZZZZZZ	1.00	1130																									
ZZZZZZ	1.00	1131																									
ZZZZZZ	1.00	1132																									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1135																									
ZZZZZZ	1.00	1136																									
ZZZZZZ	1.00	1137																									
CCV	1.00	1139																X									
CCB	1.00	1140																X									
ZZZZZZ	1.00	1142																									
ZZZZZZ	1.00	1143																									
ZZZZZZ	1.00	1144																									
ZZZZZZ	1.00	1146																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215B_

Instrument ID Number: COMM_FIMS_____ Method: CV

Start Date: 02/11/03___ End Date: 02/11/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1147																												
ZZZZZZ	1.00	1148																												
ZZZZZZ	1.00	1149																												
ZZZZZZ	1.00	1151																												
CCV	1.00	1152																X												
CCB	1.00	1154																X												
ZZZZZZ	1.00	1155																												
ZZZZZZ	1.00	1156																												
ZZZZZZ	1.00	1158																												
ZZZZZZ	1.00	1159																												
ZZZZZZ	1.00	1200																												
ZZZZZZ	1.00	1202																												
ZZZZZZ	1.00	1203																												
ZZZZZZ	1.00	1204																												
CCV	1.00	1205																X												
CCB	1.00	1207																X												
ZZZZZZ	1.00	1208																												
ZZZZZZ	1.00	1210																												
ZZZZZZ	1.00	1211																												
ZZZZZZ	1.00	1212																												
ZZZZZZ	1.00	1213																												
ZZZZZZ	1.00	1215																												
ZZZZZZ	1.00	1216																												
PBS	1.00	1217																X												
CCV	1.00	1219																X												
CCB	1.00	1220																X												
LCSS	1.00	1222																X												
FTASS112	1.00	1223																X												
SV1120204	1.00	1224																X												
SV1120709	1.00	1226																X												
FTASS113	1.00	1227																X												
SV1130204	1.00	1228																X												

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215B

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
SV1130709	1.00	1229																X												
FTASS114	1.00	1231																X												
CCV	1.00	1232																X												
CCB	1.00	1234																X												
SV1140204	1.00	1235																X												
SV1140709	1.00	1236																X												
SVDUP3	1.00	1238																X												
FTASS115	1.00	1239																X												
SV1150204	1.00	1240																X												
SV1150810	1.00	1241																X												
FTASS116	1.00	1243																X												
SV1160204	1.00	1244																X												
CCV	1.00	1246																X												
CCB	1.00	1247																X												
SV1160204D	1.00	1248																X												
SV1160204S	1.00	1250																X												
ZZZZZZ	1.00	1251																												
ZZZZZZ	1.00	1252																												
ZZZZZZ	1.00	1254																												
CCV	1.00	1255																X												
CCB	1.00	1256																X												

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 02/10/03___ End Date: 02/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1559		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S1	1.00	1603		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S2	1.00	1607		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S3	1.00	1611		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1615																												
ZZZZZZ	1.00	1619																												
ZZZZZZ	1.00	1621																												
ZZZZZZ	1.00	1625																												
ZZZZZZ	1.00	1630																												
ICV	1.00	1635		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1639		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1643		X						X				X		X														
ICSAB	1.00	1646		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1648																												
ZZZZZZ	1.00	1652																												
ZZZZZZ	1.00	1657																												
ZZZZZZ	1.00	1701																												
ZZZZZZ	1.00	1705																												
ZZZZZZ	1.00	1709																												
ZZZZZZ	1.00	1713																												
CCV	1.00	1718		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1722		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1726																												
ZZZZZZ	1.00	1730																												
ZZZZZZ	1.00	1734																												
ZZZZZZ	1.00	1738																												
ZZZZZZ	1.00	1742																												
ZZZZZZ	1.00	1746																												
ZZZZZZ	1.00	1751																												
ZZZZZZ	1.00	1753																												
CCV	1.00	1756		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1800		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/10/03 End Date: 02/10/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1804																									
ZZZZZZ	1.00	1808																									
ZZZZZZ	1.00	1812																									
ZZZZZZ	1.00	1816																									
ZZZZZZ	1.00	1821																									
ZZZZZZ	1.00	1825																									
ZZZZZZ	1.00	1829																									
ZZZZZZ	1.00	1833																									
CCV	1.00	1837		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1841		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ZZZZZZ	1.00	1845																									
PBS	1.00	1850		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
LCSS	1.00	1854		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1160709	1.00	1858		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTASS117	1.00	1902		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1170204	1.00	1906		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ZZZZZZ	1.00	1910																									
ZZZZZZ	1.00	1913																									
CCV	1.00	1916		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1920		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1170709	1.00	1924		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTASS118	1.00	1928		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1180204	1.00	1932		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV118070	1.00	1936		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ZZZZZZ	1.00	1940																									
ZZZZZZ	1.00	1944																									
ZZZZZZ	1.00	1949																									
ZZZZZZ	1.00	1951																									
CCV	1.00	1955		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1959		X		X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ZZZZZZ	1.00	2003																									
ZZZZZZ	1.00	2008																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 02/10/03___ End Date: 02/10/03___

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	2012																									
ZZZZZZ	1.00	2016																									
ZZZZZZ	1.00	2020																									
ZZZZZZ	1.00	2024																									
ZZZZZZ	1.00	2028																									
ICSA	1.00	2031		X						X				X		X											
ICSAB	1.00	2035		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	2038		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	2042		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0817			X																						
S1	1.00	0821			X																						
S2	1.00	0824			X																						
S3	1.00	0828			X																						
ZZZZZZ	1.00	0831																									
ZZZZZZ	1.00	0834																									
ICV	1.00	0837			X																						
ICB	1.00	0841			X																						
ICSA	1.00	0844																									
ICSAB	1.00	0846			X																						
ZZZZZZ	1.00	0849																									
ZZZZZZ	1.00	0858																									
ZZZZZZ	1.00	0901																									
ZZZZZZ	1.00	0904																									
ZZZZZZ	1.00	0906																									
ZZZZZZ	1.00	0909																									
CCV	1.00	0912			X																						
CCB	1.00	0916			X																						
ZZZZZZ	1.00	0919																									
ZZZZZZ	1.00	0922																									
ZZZZZZ	1.00	0924																									
ZZZZZZ	1.00	0927																									
ZZZZZZ	1.00	0929																									
ZZZZZZ	1.00	0932																									
ZZZZZZ	1.00	0935																									
ZZZZZZ	1.00	0937																									
CCV	1.00	0940			X																						
CCB	1.00	0944			X																						
ZZZZZZ	1.00	0947																									
ZZZZZZ	1.00	0950																									
ZZZZZZ	1.00	0952																									
ZZZZZZ	1.00	0955																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0215C

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	0957																								
ZZZZZZ	1.00	1000																								
ZZZZZZ	1.00	1002																								
ZZZZZZ	1.00	1006																								
CCV	1.00	1010			X																					
CCB	1.00	1014			X																					
ZZZZZZ	1.00	1017																								
PBS	1.00	1020			X																					
LCSS	1.00	1024			X																					
SV1160709	1.00	1028			X																					
FTASS117	1.00	1030			X																					
SV1170204	1.00	1033			X																					
ZZZZZZ	1.00	1035																								
ZZZZZZ	1.00	1038																								
CCV	1.00	1041			X																					
CCB	1.00	1045			X																					
SV1170709	1.00	1048			X																					
FTASS118	1.00	1051			X																					
SV1180204	1.00	1053			X																					
SV118070	1.00	1056			X																					
ZZZZZZ	1.00	1058																								
ZZZZZZ	1.00	1101																								
ZZZZZZ	1.00	1103																								
ZZZZZZ	1.00	1106																								
CCV	1.00	1109			X																					
CCB	1.00	1114			X																					
ZZZZZZ	1.00	1117																								
ZZZZZZ	1.00	1120																								
ZZZZZZ	1.00	1122																								
ZZZZZZ	1.00	1125																								
ZZZZZZ	1.00	1127																								
ZZZZZZ	1.00	1130																								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0215C_

Instrument ID Number: OPTIMA_2A_____ Method: P____

Start Date: 02/11/03 End Date: 02/11/03____

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1132																								
ICSA	1.00	1135																								
ICSAB	1.00	1137			X																					
CCV	1.00	1141			X																					
CCB	1.00	1145			X																					

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0215C

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0950																		X							
S1	1.00	0952																		X							
S2	1.00	0954																		X							
S3	1.00	0957																		X							
ZZZZZZ	1.00	0959																									
ICV	1.00	1001																		X							
ICB	1.00	1003																		X							
ICSA	1.00	1007																									
ICSAB	1.00	1010																		X							
ZZZZZZ	1.00	1012																									
ZZZZZZ	1.00	1014																									
ZZZZZZ	1.00	1017																									
ZZZZZZ	1.00	1019																									
ZZZZZZ	1.00	1021																									
ZZZZZZ	1.00	1024																									
CCV	1.00	1026																		X							
CCB	1.00	1028																		X							
ZZZZZZ	1.00	1030																									
ZZZZZZ	1.00	1033																									
ZZZZZZ	1.00	1035																									
ZZZZZZ	1.00	1037																									
ZZZZZZ	1.00	1040																									
ZZZZZZ	1.00	1042																									
PBS	1.00	1044																		X							
LCSS	1.00	1046																		X							
CCV	1.00	1049																		X							
CCB	1.00	1051																		X							
SV1160709	1.00	1053																		X							
FTASS117	1.00	1056																		X							
SV1170204	1.00	1058																		X							
SV1170709	1.00	1100																		X							
FTASS118	1.00	1103																		X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C_

Instrument ID Number: OPTIMA_1A ___ Method: P___

Start Date: 02/11/03___ End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
SV1180204	1.00	1105																		X							
SV118070_	1.00	1107																		X							
ICSA	1.00	1110																									
ICSAB	1.00	1112																		X							
CCV	1.00	1114																		X							
CCB	1.00	1117																		X							

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Instrument ID Number: OPTIMA_1A Method: P_...

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1515																				X				
S1	1.00	1517																				X				
S2	1.00	1519																				X				
S3	1.00	1522																				X				
ZZZZZZ	1.00	1524																								
ICV	1.00	1526																				X				
ICB	1.00	1529																				X				
ICSA	1.00	1531																								
ICSAB	1.00	1533																				X				
ZZZZZZ	1.00	1536																								
ZZZZZZ	1.00	1538																								
ZZZZZZ	1.00	1540																								
ZZZZZZ	1.00	1542																								
ZZZZZZ	1.00	1545																								
ZZZZZZ	1.00	1547																								
CCV	1.00	1549																				X				
CCB	1.00	1552																				X				
LCSS	1.00	1554																								
ZZZZZZ	1.00	1556																								
ZZZZZZ	1.00	1559																								
ZZZZZZ	1.00	1601																								
ZZZZZZ	1.00	1603																								
ZZZZZZ	1.00	1605																								
ZZZZZZ	1.00	1608																								
ZZZZZZ	1.00	1610																								
CCV	1.00	1612																				X				
CCB	1.00	1615																				X				
ZZZZZZ	1.00	1617																								
ZZZZZZ	1.00	1619																								
ZZZZZZ	1.00	1622																								
ZZZZZZ	1.00	1624																								
ZZZZZZ	1.00	1626																								

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ZZZZZZ	1.00	1629																												
ZZZZZZ	1.00	1631																												
ZZZZZZ	1.00	1633																												
ZZZZZZ	1.00	1636																												
CCV	1.00	1638																				X								
CCB	1.00	1640																				X								
ZZZZZZ	1.00	1642																												
PBS	1.00	1645																				X								
LCSS	1.00	1647																				X								
SV1160709	1.00	1649																				X								
FTASS117	1.00	1652																				X								
SV1170204	1.00	1654																				X								
SV1170709	1.00	1656																				X								
CCV	1.00	1659																				X								
CCB	1.00	1701																				X								
FTASS118	1.00	1703																				X								
SV1180204	1.00	1706																				X								
SV118070	1.00	1708																				X								
ICSA	1.00	1710																												
ICSAB	1.00	1713																				X								
CCV	1.00	1715																				X								
CCB	1.00	1717																				X								

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0215C_

Instrument ID Number: COMM_FIMS Method: CV_

Start Date: 02/11/03___ End Date: 02/11/03___

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1104																X									
S0.2	1.00	1106																X									
S1	1.00	1107																X									
S2	1.00	1108																X									
S5	1.00	1110																X									
S10	1.00	1111																X									
ICV	1.00	1112																X									
ICB	1.00	1114																X									
ZZZZZZ	1.00	1115																									
ZZZZZZ	1.00	1116																									
ZZZZZZ	1.00	1118																									
ZZZZZZ	1.00	1119																									
ZZZZZZ	1.00	1120																									
ZZZZZZ	1.00	1122																									
ZZZZZZ	1.00	1123																									
ZZZZZZ	1.00	1124																									
CCV	1.00	1126																X									
CCB	1.00	1127																X									
ZZZZZZ	1.00	1128																									
ZZZZZZ	1.00	1130																									
ZZZZZZ	1.00	1131																									
ZZZZZZ	1.00	1132																									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1135																									
ZZZZZZ	1.00	1136																									
ZZZZZZ	1.00	1137																									
CCV	1.00	1139																X									
CCB	1.00	1140																X									
ZZZZZZ	1.00	1142																									
ZZZZZZ	1.00	1143																									
ZZZZZZ	1.00	1144																									
PBS	1.00	1146																X									

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0215C

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LCSS	1.00	1147																X								
ZZZZZZ	1.00	1148																								
ZZZZZZ	1.00	1149																								
ZZZZZZ	1.00	1151																								
CCV	1.00	1152																X								
CCB	1.00	1154																X								
ZZZZZZ	1.00	1155																								
ZZZZZZ	1.00	1156																								
ZZZZZZ	1.00	1158																								
ZZZZZZ	1.00	1159																								
ZZZZZZ	1.00	1200																								
ZZZZZZ	1.00	1202																								
ZZZZZZ	1.00	1203																								
ZZZZZZ	1.00	1204																								
CCV	1.00	1205																X								
CCB	1.00	1207																X								
SV1160709	1.00	1208																X								
FTASS117	1.00	1210																X								
SV1170204	1.00	1211																X								
SV1170709	1.00	1212																X								
FTASS118	1.00	1213																X								
SV1180204	1.00	1215																X								
SV118070	1.00	1216																X								
ZZZZZZ	1.00	1217																								
CCV	1.00	1219																X								
CCB	1.00	1220																X								

FORM XIV - IN SW846

FIELD DUPLICATE PRECISION

ANALYTE	FTA-SU-DUP3	FTA-SU-114-0204	RPD	DIFFERENCE
Aluminum	6180	6740	8.67	560
Antimony	0.46	0.2	78.79 OK	0.26
Arsenic	1.2	1.5	22.22	0.3
Barium	19.2	21.3	10.37	2.1
Beryllium	0.26	0.29	10.91	0.03
Cadmium	.033U	.033U	#VALUE!	#VALUE!
Calcium	153	184	18.40	31
Chromium	5.8	6.1	5.04	0.3
Cobalt	0.82	1	19.78	0.18
Copper	2.4	2.7	11.76	0.3
Iron	3270	3840	16.03	570
Lead	3.3	3.9	16.67	0.6
Magnesium	260	316	19.44	56
Manganese	30.2	49	47.47	18.8
Mercury	.015U	.017U	#VALUE!	#VALUE!
Nickel	2.5	2.7	7.69	0.2
Potassium	142	167	16.18	25
Selenium	.42U	.42U	#VALUE!	#VALUE!
Silver	.093U	.094U	#VALUE!	#VALUE!
Sodium	9.1	10	9.42	0.9
Thallium	.14U	.14U	#VALUE!	#VALUE!
Vanadium	6.6	7.7	15.38	1.1
Zinc	4.6	4.8	4.26	0.2

SDG: B0215A

Pb 220.353	9969.5	0.4990 mg/L	0.00018	0.4990 mg/L	0.00018	0.04%
Sb 206.836	1711.6	0.5138 mg/L	0.00101	0.5138 mg/L	0.00101	0.20%
Se 196.026	1003.5	0.4810 mg/L	0.00134	0.4810 mg/L	0.00134	0.28%
Tl 190.801	1186.3	0.4998 mg/L	0.00094	0.4998 mg/L	0.00094	0.19%
V 292.402	816443.2	2.3267 mg/L	0.02487	2.3267 mg/L	0.02487	1.07%
Zn 206.200	226584.2	2.3696 mg/L	0.01455	2.3696 mg/L	0.01455	0.61%
Na 330.237	47932.6	22.221 mg/L	0.2087	22.221 mg/L	0.2087	0.94%
Cd 226.502	78013.3	0.2503 mg/L	0.00155	0.2503 mg/L	0.00155	0.62%
Ti 334.940	1072.9	0.0009 mg/L	0.00001	0.0009 mg/L	0.00001	1.52%
Ca 227.546	14211.6	22.542 mg/L	0.0520	22.542 mg/L	0.0520	0.23%

Sequence No.: 12 **Autosampler Location: 19**
Sample ID: B0221-10B,5555 **Date Collected: 2/11/2003 12:55:59 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0221-10B,5555

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	106.0	0.0003	mg/L	0.00015	0.0003	mg/L	0.00015	42.45%
Al 308.215	139.8	0.0028	mg/L	0.00042	0.0028	mg/L	0.00042	14.74%
As 188.979	1.5	0.0007	mg/L	0.00188	0.0007	mg/L	0.00188	254.69%
Ba 233.527	1069.4	0.0129	mg/L	0.00047	0.0129	mg/L	0.00047	3.68%
Be 313.107	739.7	0.0001	mg/L	0.00000	0.0001	mg/L	0.00000	3.54%
Co 228.616	28.1	0.0007	mg/L	0.00034	0.0007	mg/L	0.00034	50.72%
Cr 267.716	301.3	0.0009	mg/L	0.00014	0.0009	mg/L	0.00014	15.42%
Cu 324.752	4303.5	0.0090	mg/L	0.00123	0.0090	mg/L	0.00123	13.67%
Fe 273.955	960.0	0.0197	mg/L	0.00026	0.0197	mg/L	0.00026	1.34%
Mg 279.077	412.4	0.0097	mg/L	0.00627	0.0097	mg/L	0.00627	64.91%
Mn 257.610	1125.6	0.0030	mg/L	0.00000	0.0030	mg/L	0.00000	0.12%
Ni 231.604	67.5	0.0010	mg/L	0.00003	0.0010	mg/L	0.00003	3.49%
Pb 220.353	10.8	0.0005	mg/L	0.00022	0.0005	mg/L	0.00022	41.33%
Sb 206.836	6.9	0.0020	mg/L	0.00092	0.0020	mg/L	0.00092	45.00%
Se 196.026	0.7	0.0003	mg/L	0.00052	0.0003	mg/L	0.00052	150.31%
Tl 190.801	2.2	0.0009	mg/L	0.00042	0.0009	mg/L	0.00042	44.41%
V 292.402	26.4	0.0001	mg/L	0.00016	0.0001	mg/L	0.00016	214.84%
Zn 206.200	779.8	0.0082	mg/L	0.00081	0.0082	mg/L	0.00081	9.94%
Na 330.237	256.4	0.1191	mg/L	0.10353	0.1191	mg/L	0.10353	86.92%
Cd 226.502	-11.1	0.0000	mg/L	0.00003	0.0000	mg/L	0.00003	89.27%
Ti 334.940	769.6	0.0007	mg/L	0.00000	0.0007	mg/L	0.00000	0.13%
Ca 227.546	78.9	0.1258	mg/L	0.03139	0.1258	mg/L	0.03139	24.96%

2/11/03

Sequence No.: 13 **Autosampler Location: 20**
Sample ID: B0215-02B,5555 **Date Collected: 2/11/2003 1:00:02 PM**
Analyst: Sample RB-020403
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0215-02B,5555

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-7.1	0.0000	mg/L	0.00017	0.0000	mg/L	0.00017	760.48%
Al 308.215	57.3	0.0012	mg/L	0.00205	0.0012	mg/L	0.00205	176.96%
As 188.979	1.1	0.0006	mg/L	0.00067	0.0006	mg/L	0.00067	114.74%
Ba 233.527	840.0	0.0101	mg/L	0.00017	0.0101	mg/L	0.00017	1.68%
Be 313.107	615.4	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	11.58%
Co 228.616	24.4	0.0006	mg/L	0.00003	0.0006	mg/L	0.00003	4.67%
Cr 267.716	473.1	0.0014	mg/L	0.00003	0.0014	mg/L	0.00003	2.02%
Cu 324.752	2313.9	0.0048	mg/L	0.00028	0.0048	mg/L	0.00028	5.82%
Fe 273.955	709.7	0.0146	mg/L	0.00008	0.0146	mg/L	0.00008	0.53%
Mg 279.077	-65.2	-0.0015	mg/L	0.00596	-0.0015	mg/L	0.00596	401.22%
Mn 257.610	2865.7	0.0078	mg/L	0.00002	0.0078	mg/L	0.00002	0.30%
Ni 231.604	84.7	0.0012	mg/L	0.00001	0.0012	mg/L	0.00001	0.50%
Pb 220.353	2.7	0.0001	mg/L	0.00013	0.0001	mg/L	0.00013	92.04%
Sb 206.836	1.6	0.0005	mg/L	0.00002	0.0005	mg/L	0.00002	4.97%
Se 196.026	-1.1	-0.0006	mg/L	0.00033	-0.0006	mg/L	0.00033	59.88%

0.0101 mg/L x 1000 = 10.1 ug/L ✓

1553

SDG: B0215 B

Mg 279.077	1081487.1	22.939 mg/L	0.1075	22.939 mg/L	0.1075	0.47%
Mn 257.610	1122211.5	2.3717 mg/L	0.00257	2.3717 mg/L	0.00257	0.11%
Ni 231.604	199753.5	2.3145 mg/L	0.01925	2.3145 mg/L	0.01925	0.83%
Pb 220.353	10236.1	0.4464 mg/L	0.00163	0.4464 mg/L	0.00163	0.37%
Sb 206.836	1983.9	0.5170 mg/L	0.00509	0.5170 mg/L	0.00509	0.99%
Se 196.026	848.1	0.4115 mg/L	0.00352	0.4115 mg/L	0.00352	0.85%
Tl 190.801	1109.3	0.4505 mg/L	0.00087	0.4505 mg/L	0.00087	0.19%
V 292.402	919965.3	2.3134 mg/L	0.01038	2.3134 mg/L	0.01038	0.45%
Zn 206.200	225830.5	2.2881 mg/L	0.02616	2.2881 mg/L	0.02616	1.14%
Na 330.237	47968.2	21.314 mg/L	0.2179	21.314 mg/L	0.2179	1.02%
Cd 226.502	72405.6	0.2184 mg/L	0.00220	0.2184 mg/L	0.00220	1.01%
Ti 334.940	1830.9	0.0013 mg/L	0.00001	0.0013 mg/L	0.00001	0.53%
Ca 227.546	14737.7	22.350 mg/L	0.1123	22.350 mg/L	0.1123	0.50%

Sequence No.: 17
Sample ID: B0215-03A,5552
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 19
Date Collected: 2/10/2003 5:00:14 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:23 AM,

Mean Data: B0215-03A,5552

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-3332.1	0.0006	mg/L	0.00012	0.0006	mg/L	0.00012	21.23%
Al 308.215	3331453.2	62.942	mg/L	0.0330	62.942	mg/L	0.0330	0.05%
As 188.979	47.8	0.0239	mg/L	0.00087	0.0239	mg/L	0.00087	3.63%
Ba 233.527	30852.9	0.3231	mg/L	0.00055	0.3231	mg/L	0.00055	0.17%
Be 313.107	28170.1	0.0042	mg/L	0.00001	0.0042	mg/L	0.00001	0.13%
Co 228.616	964.0	0.0221	mg/L	0.00008	0.0221	mg/L	0.00008	0.38%
Cr 267.716	25123.4	0.0716	mg/L	0.00022	0.0716	mg/L	0.00022	0.31%
Cu 324.752	25422.6	0.0570	mg/L	0.00109	0.0570	mg/L	0.00109	1.92%
Fe 273.955	3174741.0	59.211	mg/L	0.0850	59.211	mg/L	0.0850	0.14%
Mg 279.077	264020.9	5.6024	mg/L	0.01414	5.6024	mg/L	0.01414	0.25%
Mn 257.610	480490.9	1.0169	mg/L	0.00112	1.0169	mg/L	0.00112	0.11%
Ni 231.604	3780.7	0.0434	mg/L	0.00014	0.0434	mg/L	0.00014	0.32%
Pb 220.353	3198.3	0.1453	mg/L	0.00034	0.1453	mg/L	0.00034	0.24%
Sb 206.836	7.7	0.0059	mg/L	0.00062	0.0059	mg/L	0.00062	10.47%
Se 196.026	-32.0	-0.0017	mg/L	0.00168	-0.0017	mg/L	0.00168	98.70%
Tl 190.801	-13.8	0.0012	mg/L	0.00054	0.0012	mg/L	0.00054	45.59%
V 292.402	51583.9	0.1287	mg/L	0.00005	0.1287	mg/L	0.00005	0.04%
Zn 206.200	23630.2	0.2375	mg/L	0.00026	0.2375	mg/L	0.00026	0.11%
Na 330.237	902.9	0.7904	mg/L	0.07254	0.7904	mg/L	0.07254	9.18%
Cd 226.502	1133.4	0.0011	mg/L	0.00011	0.0011	mg/L	0.00011	9.66%
Ti 334.940	1586770.6	1.1428	mg/L	0.01555	1.1428	mg/L	0.01555	1.36%
Ca 227.546	2722.3	3.6685	mg/L	0.00545	3.6685	mg/L	0.00545	0.15%

Sequence No.: 18
Sample ID: B0215-04A,5552
Analyst:
Sample Wt: Sample: FTA-SU-112-0204
Dilution: 91%S, 1.01g, 50 mL
Autosampler Location: 20
Date Collected: 2/10/2003 5:04:21 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:25 AM,

Mean Data: B0215-04A,5552

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-3069.1	-0.0017	mg/L	0.00011	-0.0017	mg/L	0.00011	6.44%
Al 308.215	8161836.4	154.20	mg/L	2.532	154.20	mg/L	2.532	1.64%
As 188.979	61.4	0.0261	mg/L	0.00120	0.0261	mg/L	0.00120	4.60%
Ba 233.527	47376.3	0.4981	mg/L	0.00607	0.4981	mg/L	0.00607	1.22%
Be 313.107	29637.9	0.0050	mg/L	0.00005	0.0050	mg/L	0.00005	1.05%
Co 228.616	518.1	0.0105	mg/L	0.00006	0.0105	mg/L	0.00006	0.55%
Cr 267.716	72468.7	0.2055	mg/L	0.00268	0.2055	mg/L	0.00268	1.30%
Cu 324.752	33144.6	0.0704	mg/L	0.00132	0.0704	mg/L	0.00132	1.87%
Fe 273.955	2292794.2	42.762	mg/L	0.6878	42.762	mg/L	0.6878	1.61%
Mg 279.077	192778.7	4.0886	mg/L	0.05177	4.0886	mg/L	0.05177	1.27%
Mn 257.610	156426.5	0.3325	mg/L	0.00403	0.3325	mg/L	0.00403	1.21%
Ni 231.604	3234.5	0.0369	mg/L	0.00025	0.0369	mg/L	0.00025	0.67%

1565

$0.2055\ mg/L \times \frac{50\ mL}{1.01\ g} = \frac{10.173}{0.91} = 11.2\ mg/kg$ ✓

SDG: B0215C

Zn 206.200	225080.4	2.2805 mg/L	0.01761	2.2805 mg/L	0.01761	0.77%
Na 330.237	48137.1	21.390 mg/L	0.1261	21.390 mg/L	0.1261	0.59%
Cd 226.502	74486.9	0.2246 mg/L	0.00161	0.2246 mg/L	0.00161	0.72%
Ti 334.940	1975.8	0.0014 mg/L	0.00006	0.0014 mg/L	0.00006	4.47%
Ca 227.546	14775.1	22.407 mg/L	0.0719	22.407 mg/L	0.0719	0.32%

Sequence No.: 46
Sample ID: B0215-18A,5553
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 40
Date Collected: 2/10/2003 6:57:11 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:00 AM,

Mean Data: B0215-18A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-5406.5	-0.0035	mg/L	0.00000	-0.0035	mg/L	0.00000	0.09%
Al 308.215	9387477.8	177.36	mg/L	2.105	177.36	mg/L	2.105	1.19%
As 188.979	108.5	0.0473	mg/L	0.00068	0.0473	mg/L	0.00068	1.45%
Ba 233.527	58169.0	0.6108	mg/L	0.00473	0.6108	mg/L	0.00473	0.77%
Be 313.107	46563.2	0.0083	mg/L	0.00006	0.0083	mg/L	0.00006	0.67%
Co 228.616	1610.2	0.0357	mg/L	0.00021	0.0357	mg/L	0.00021	0.58%
Cr 267.716	53663.9	0.1522	mg/L	0.00114	0.1522	mg/L	0.00114	0.75%
Cu 324.752	21081.0	0.0459	mg/L	0.00333	0.0459	mg/L	0.00333	7.25%
Fe 273.955	3834349.1	71.513	mg/L	0.9084	71.513	mg/L	0.9084	1.27%
Mg 279.077	386594.6	8.2104	mg/L	0.03311	8.2104	mg/L	0.03311	0.40%
Mn 257.610	1354405.2	2.8651	mg/L	0.00202	2.8651	mg/L	0.00202	0.07%
Ni 231.604	3012.8	0.0337	mg/L	0.00019	0.0337	mg/L	0.00019	0.57%
Pb 220.353	1288.0	0.0715	mg/L	0.00015	0.0715	mg/L	0.00015	0.21%
Sb 206.836	-6.1	0.0047	mg/L	0.00026	0.0047	mg/L	0.00026	5.44%
Se 196.026	-35.8	-0.0021	mg/L	0.00209	-0.0021	mg/L	0.00209	97.71%
Tl 190.801	-44.7	-0.0016	mg/L	0.00021	-0.0016	mg/L	0.00021	12.92%
V 292.402	91841.4	0.2288	mg/L	0.00132	0.2288	mg/L	0.00132	0.58%
Zn 206.200	7911.5	0.0759	mg/L	0.00047	0.0759	mg/L	0.00047	0.62%
Na 330.237	185.6	1.0167	mg/L	0.05869	1.0167	mg/L	0.05869	5.77%
Cd 226.502	792.6	-0.0004	mg/L	0.00001	-0.0004	mg/L	0.00001	3.46%
Ti 334.940	4449742.1	3.2048	mg/L	0.04696	3.2048	mg/L	0.04696	1.47%
Ca 227.546	2611.2	3.4412	mg/L	0.04512	3.4412	mg/L	0.04512	1.31%

Sequence No.: 47
Sample ID: B0215-19A,5553
Analyst: Sample: FTA-55-117
Sample Wt:
Dilution: 869.5, 1.04g, 50 mL

Autosampler Location: 41
Date Collected: 2/10/2003 7:01:20 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:01 AM,

Mean Data: B0215-19A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-5157.2	-0.0030	mg/L	0.00032	-0.0030	mg/L	0.00032	10.56%
Al 308.215	3917571.2	74.015	mg/L	0.5585	74.015	mg/L	0.5585	0.75%
As 188.979	103.4	0.0483	mg/L	0.00162	0.0483	mg/L	0.00162	3.36%
Ba 233.527	35633.2	0.3730	mg/L	0.00978	0.3730	mg/L	0.00978	2.62%
Be 313.107	26034.0	0.0044	mg/L	0.00005	0.0044	mg/L	0.00005	1.22%
Co 228.616	928.5	0.0205	mg/L	0.00020	0.0205	mg/L	0.00020	0.96%
Cr 267.716	42233.3	0.1201	mg/L	0.00249	0.1201	mg/L	0.00249	2.07%
Cu 324.752	40772.5	0.0887	mg/L	0.00165	0.0887	mg/L	0.00165	1.87%
Fe 273.955	3817598.7	71.201	mg/L	0.3351	71.201	mg/L	0.3351	0.47%
Mg 279.077	344840.0	7.3174	mg/L	0.19014	7.3174	mg/L	0.19014	2.60%
Mn 257.610	637418.9	1.3489	mg/L	0.00627	1.3489	mg/L	0.00627	0.46%
Ni 231.604	4740.9	0.0544	mg/L	0.00036	0.0544	mg/L	0.00036	0.66%
Pb 220.353	16621.9	0.7305	mg/L	0.00211	0.7305	mg/L	0.00211	0.29%
Sb 206.836	6.2	0.0065	mg/L	0.00028	0.0065	mg/L	0.00028	4.29%
Se 196.026	-44.8	-0.0052	mg/L	0.00068	-0.0052	mg/L	0.00068	12.93%
Tl 190.801	-22.8	-0.0004	mg/L	0.00032	-0.0004	mg/L	0.00032	73.20%
V 292.402	76817.2	0.1919	mg/L	0.00435	0.1919	mg/L	0.00435	2.27%
Zn 206.200	70580.4	0.7127	mg/L	0.01518	0.7127	mg/L	0.01518	2.13%
Na 330.237	2508.7	1.6127	mg/L	0.13311	1.6127	mg/L	0.13311	8.25%
Cd 226.502	3159.1	0.0067	mg/L	0.00024	0.0067	mg/L	0.00024	3.51%

$0.7305\ mg/L \times \frac{50\ mL}{1.04\ g} = \frac{35.12}{0.86} = 40.8\ mg/kg$ ✓ 1579

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 13, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND PH**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0221

SAMPLES: 8/SOIL/

WOD-SS-101	WOD-SS-102	WOD-SS-103
WOD-SS-104	WOD-SU-101-1315	WOD-SU-102-1517
WOD-SU-103-1113	WOD-SU-104-1012	

1/AQUEOUS/

RB-020603

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0221, consists of eight (8) soil environmental samples and one (1) rinse blank.

All samples were analyzed for target analyte list (TAL) metals. Samples WOD-SS-101, WOD-SS-102, WOD-SS-103, and WOD-SS-104 were also analyzed for pH and grain size. The samples were collected by Tetra Tech NUS February 6, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Analyses of grain size were subcontracted to RI Analytical Laboratories and submitted with this SDG. Results for grain size were not entered into the database. Analyses of total organic carbon (TOC) were subcontracted to Severn Trent Laboratories Burlington and will be submitted in a separate SDG. Metals analyses except mercury were conducted using SW846 method 6010B. Soil mercury analyses were conducted using SW846 method 7471A. Aqueous mercury analyses were conducted using SW846 method 7470A. pH analyses were conducted using SW846 method 9045C. Grain size analyses were conducted using method ASTM D422.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Antimony	5.8 ug/L	1.45 mg/kg
Barium[(1)]	0.385 mg/kg	1.925 mg/kg
Calcium[(1)]	13.776 mg/kg	68.88 mg/kg
Cobalt[(1)]	0.058 mg/kg	0.29 mg/kg
Copper	11.7 ug/L	2.93 mg/kg
Iron[(1)]	1.469 mg/kg	7.345 mg/kg
Manganese[(1)]	0.271 mg/kg	1.355 mg/kg
Nickel[(1)]	0.117 mg/kg	0.585 mg/kg
Potassium	499.9 ug/L	125.0 mg/kg
Sodium	213.0 ug/L	53.25 mg/kg
Zinc	7.1 ug/L	1.78 mg/kg

[(1)] Maximum concentration present in soil preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for antimony, calcium, cobalt, copper, nickel, potassium, sodium, and zinc were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetects. The rinse blank was not qualified for laboratory blank contamination and was not used to qualify environmental samples.

- The interfering analyte aluminum was present in sample WOD-SS-102 at a concentration comparable to the concentration of aluminum in the interference check sample (ICS) solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for selenium, silver, and sodium in the affected sample. The nondetected results reported for selenium, silver, and sodium were qualified as biased low (UL).

- The interfering analyte aluminum was present in sample WOD-SS-103 at a concentration comparable to the concentration of aluminum in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for selenium and silver in the affected sample. The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The interfering analyte aluminum was present in sample WOD-SS-104 at a concentration comparable to the concentration of aluminum in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for cadmium, selenium, and silver in the affected sample. The positive result reported for cadmium was qualified as biased high (K). The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The interfering analyte iron was present in sample WOD-SS-102 at a concentration comparable to the concentration of iron in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for copper, selenium, silver, and sodium in the affected sample. The positive result reported for copper was qualified as estimated (J) due to conflicting directional bias. The nondetected results reported for selenium, silver, and sodium were qualified as biased low (UL).

- The interfering analyte iron was present in sample WOD-SS-103 at a concentration comparable to the concentration of iron in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for copper, selenium, and silver in the affected sample. The positive result reported for copper was qualified as estimated (J) due to conflicting directional bias. The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The interfering analyte iron was present in sample WOD-SS-104 at a concentration comparable to the concentration of iron in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, cobalt, copper, lead, manganese, potassium, selenium, silver, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for cadmium, copper, selenium, and silver in the affected sample. The positive result reported for cadmium was qualified as biased high (K). The positive result reported for copper was qualified as estimated (J) due to conflicting directional bias. The nondetected results reported for selenium and silver were qualified as biased low (UL).

- The matrix spike percent recoveries (%Rs) were below the 75% control limit for antimony, beryllium, cobalt, copper, silver, vanadium, and zinc, affecting all soil samples. Positive results reported for beryllium, cobalt, copper, vanadium, and zinc were qualified as biased low (L). Nondetected results reported for antimony and silver were qualified as biased low (UL).

Notes

The sample IDs with the prefix "WOD" were reported incorrectly by the laboratory as "W0D". The data reviewer amended the database for these samples.

The sample IDs with the prefix "WOD-SU" were reported incorrectly by the laboratory as "W0D-SV". The data reviewer amended the database for these samples.

Barium, chromium, copper, magnesium, manganese, nickel, potassium, and zinc were present in the rinse blank.

The laboratory did not report the results for the analytes in the ICSA solution. The data reviewer used the raw data to check the levels of analytes in the solution so interference effects could be determined.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: Several analytes were qualified due to ICS interference. Several analytes were qualified due to matrix spike noncompliance.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
J	-	Positive result is considered estimated as a result of technical noncompliance.
K	-	Positive result is considered biased high as a result of technical noncompliance.
L	-	Positive result is considered biased low as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-101		nsample	WOD-SS-102		nsample	WOD-SS-103	
samp_date	2/6/2003		samp_date	2/6/2003		samp_date	2/6/2003	
lab_id	B0221-02A		lab_id	B0221-04A		lab_id	B0221-06A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	85		Pct_Solids	90		Pct_Solids	87	
DUP_OF:			DUP_OF:			DUP_OF:		
Parameter	Result	Val Qual	Parameter	Result	Val Qual	Parameter	Result	Val Qual
ALUMINUM	5720		ALUMINUM	8190		ALUMINUM	11600	
ANTIMONY	0.28	B	ANTIMONY	0.19	B	ANTIMONY	0.49	B
ARSENIC	2.1		ARSENIC	4.3		ARSENIC	6.2	
BARIUM	25.0		BARIUM	33.9		BARIUM	48.3	
BERYLLIUM	0.32	L	BERYLLIUM	0.42	L	BERYLLIUM	0.60	L
CADMIUM	0.044		CADMIUM	0.035	U	CADMIUM	0.037	U
CALCIUM	434		CALCIUM	133		CALCIUM	323	
CHROMIUM	6.0		CHROMIUM	8.6		CHROMIUM	11.3	
COBALT	1.8	L	COBALT	2.0	L	COBALT	3.2	L
COPPER	4.9	L	COPPER	3.2	J	COPPER	5.1	J
IRON	5420		IRON	6650		IRON	10200	
LEAD	11.1		LEAD	16.8		LEAD	8.4	
MAGNESIUM	534		MAGNESIUM	526		MAGNESIUM	904	
MANGANESE	83.3		MANGANESE	66.2		MANGANESE	166	
MERCURY	0.038		MERCURY	0.036		MERCURY	0.052	
NICKEL	3.6		NICKEL	4.5		NICKEL	6.7	
POTASSIUM	339		POTASSIUM	229		POTASSIUM	391	
SELENIUM	0.53	U	SELENIUM	0.45	UL	SELENIUM	0.47	UL
SILVER	0.12	UL	SILVER	0.10	UL	SILVER	0.10	UL
SODIUM	14.8	B	SODIUM	4.2	UL	SODIUM	6.1	B
THALLIUM	0.18	U	THALLIUM	0.15	U	THALLIUM	0.16	U
VANADIUM	11.6	L	VANADIUM	12.2	L	VANADIUM	17.7	L
ZINC	19.9	L	ZINC	12.2	L	ZINC	16.0	L

Qual Code	Qual Code	Qual Code
A	A	A
D	D	D
D	D	
D	DK	DK
K	K	K
D	DK	DK
A	K	A
D	D	D
D	D	D

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-104
samp_date	2/6/2003
lab_id	B0221-08A
qc_type	NM
units	MG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	7990		
ANTIMONY	0.60	B	A
ARSENIC	7.6		
BARIUM	81.5		
BERYLLIUM	0.51	L	D
CADMIUM	0.14	K	K
CALCIUM	655		
CHROMIUM	11.2		
COBALT	2.4	L	D
COPPER	6.1	J	DK
IRON	7490		
LEAD	24.6		
MAGNESIUM	832		
MANGANESE	161		
MERCURY	0.081		
NICKEL	5.8		
POTASSIUM	350		
SELENIUM	0.48	UL	K
SILVER	0.11	UL	DK
SODIUM	5.1	B	A
THALLIUM	0.16	U	
VANADIUM	16.7	L	D
ZINC	29.1	L	D

nsample	WOD-SU-101-1315
samp_date	2/6/2003
lab_id	B0221-03A
qc_type	NM
units	MG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5080		
ANTIMONY	0.66	B	A
ARSENIC	2.0		
BARIUM	21.5		
BERYLLIUM	0.25	L	D
CADMIUM	0.033	U	
CALCIUM	219		
CHROMIUM	9.5		
COBALT	1.6	L	D
COPPER	2.0	B	A
IRON	2710		
LEAD	1.9		
MAGNESIUM	219		
MANGANESE	96.2		
MERCURY	0.017	U	
NICKEL	1.7		
POTASSIUM	201		
SELENIUM	0.42	U	
SILVER	0.093	UL	D
SODIUM	16.3	B	A
THALLIUM	0.14	U	
VANADIUM	5.5	L	D
ZINC	3.7	L	D

nsample	WOD-SU-102-1517
samp_date	2/6/2003
lab_id	B0221-05A
qc_type	NM
units	MG/KG
Pct_Solids	96
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2200		
ANTIMONY	0.14	UL	D
ARSENIC	1.1		
BARIUM	8.9		
BERYLLIUM	0.13	L	D
CADMIUM	0.032	U	
CALCIUM	72.3		
CHROMIUM	2.3		
COBALT	0.24	B	A
COPPER	0.48	B	A
IRON	1100		
LEAD	6.7		
MAGNESIUM	57.7		
MANGANESE	21.0		
MERCURY	0.014	U	
NICKEL	0.53	B	A
POTASSIUM	70.9	B	A
SELENIUM	0.41	U	
SILVER	0.091	UL	D
SODIUM	3.8	U	
THALLIUM	0.14	U	
VANADIUM	3.7	L	D
ZINC	0.87	B	A

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-103-1113
samp_date	2/6/2003
lab_id	B0221-07A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3180		
ANTIMONY	0.40	B	A
ARSENIC	1.1		
BARIUM	12.3		
BERYLLIUM	0.20	L	D
CADMIUM	0.034	U	
CALCIUM	29.2	B	A
CHROMIUM	3.1		
COBALT	2.0	L	D
COPPER	1.2	B	A
IRON	2090		
LEAD	1.4		
MAGNESIUM	234		
MANGANESE	44.5		
MERCURY	0.017	U	
NICKEL	2.0		
POTASSIUM	137		
SELENIUM	0.44	U	
SILVER	0.098	UL	D
SODIUM	4.8	B	A
THALLIUM	0.15	U	
VANADIUM	4.4	L	D
ZINC	3.4	L	D

nsample	WOD-SU-104-1012
samp_date	2/6/2003
lab_id	B0221-09A
qc_type	NM
units	MG/KG
Pct_Solids	95
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1300		
ANTIMONY	0.13	UL	D
ARSENIC	0.81		
BARIUM	8.8		
BERYLLIUM	0.13	L	D
CADMIUM	0.031	U	
CALCIUM	31.8	B	A
CHROMIUM	1.7		
COBALT	0.30	L	D
COPPER	0.37	B	A
IRON	760		
LEAD	0.87		
MAGNESIUM	75.9		
MANGANESE	4.0		
MERCURY	0.017	U	
NICKEL	0.62		
POTASSIUM	57.3	B	A
SELENIUM	0.39	U	
SILVER	0.088	UL	D
SODIUM	3.6	U	
THALLIUM	0.13	U	
VANADIUM	2.2	L	D
ZINC	1.1	B	A

PROJ_NO: 4740

SDG: B0221 MEDIA: WATER DATA FRACTION:

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10B
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	12.9		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	0.91		
COBALT	0.90	U	
COPPER	9.0		
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	9.7		
MANGANESE	3.0		
MERCURY	0.13	U	
NICKEL	0.98		
POTASSIUM	321		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	83.0	U	
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	8.2		

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-101
samp_date	2/6/2003
lab_id	B0221-02A
qc_type	NM
Pct_Solids	85
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.3		

nsample	WOD-SS-102
samp_date	2/6/2003
lab_id	B0221-04A
qc_type	NM
Pct_Solids	90
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.5		

nsample	WOD-SS-103
samp_date	2/6/2003
lab_id	B0221-06A
qc_type	NM
Pct_Solids	87
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.9		

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-104
samp_date	2/6/2003
lab_id	B0221-08A
qc_type	NM
Pct_Solids	85
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.2		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS101

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-02A

Level (low/med): MED Date Received: 02/07/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5720			P
7440-36-0	Antimony	0.28	B	N	P
7440-38-2	Arsenic	2.1		RM 2/26/03	P
7440-39-3	Barium	25.0			P
7440-41-7	Beryllium	0.32		N	P
7440-43-9	Cadmium	0.044	B	RM 2/26/03	P
7440-70-2	Calcium	434	B		P
7440-47-3	Chromium	6.0			P
7440-48-4	Cobalt	1.8	B	N	P
7440-50-8	Copper	4.9	B	N	P
7439-89-6	Iron	5420		RM 2/26/03	P
7439-92-1	Lead	11.1			P
7439-95-4	Magnesium	534	B		P
7439-96-5	Manganese	83.3			P
7439-97-6	Mercury	0.038	B		CV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	339	B		P
7782-49-2	Selenium	0.53	U		P
7440-22-4	Silver	0.12	U	N	P
7440-23-5	Sodium	14.8	B	RM 2/26/03	P
7440-28-0	Thallium	0.18	U		P
7440-62-2	Vanadium	11.6	B	N	P
7440-66-6	Zinc	19.9		N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-04A

Level (low/med): MED Date Received: 02/07/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8190			P
7440-36-0	Antimony	0.19	B	N	P
7440-38-2	Arsenic	4.3		RM 2/26/03	P
7440-39-3	Barium	33.9			P
7440-41-7	Beryllium	0.42		N	P
7440-43-9	Cadmium	0.035	U	RM 2/26/03	P
7440-70-2	Calcium	133	B		P
7440-47-3	Chromium	8.6			P
7440-48-4	Cobalt	2.0	B	N	P
7440-50-8	Copper	3.2	B	N	P
7439-89-6	Iron	6650		RM 2/26/03	P
7439-92-1	Lead	16.8			P
7439-95-4	Magnesium	526	B		P
7439-96-5	Manganese	66.2			P
7439-97-6	Mercury	0.036	B		CV
7440-02-0	Nickel	4.5	B		P
7440-09-7	Potassium	229	B		P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.10	U	N	P
7440-23-5	Sodium	4.2	U	RM 2/26/03	P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	12.2		N	P
7440-66-6	Zinc	12.2		N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-06A

Level (low/med): MED Date Received: 02/07/03

% Solids: 87.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11600			P
7440-36-0	Antimony	0.49	B	*N	P
7440-38-2	Arsenic	6.2		RM 2126103	P
7440-39-3	Barium	48.3			P
7440-41-7	Beryllium	0.60		N	P
7440-43-9	Cadmium	0.037	U	*RM	P
7440-70-2	Calcium	323	B	2126103	P
7440-47-3	Chromium	11.3			P
7440-48-4	Cobalt	3.2	B	N	P
7440-50-8	Copper	5.1	B	*N	P
7439-89-6	Iron	10200		RM 2126103	P
7439-92-1	Lead	8.4			P
7439-95-4	Magnesium	904	B		P
7439-96-5	Manganese	166			P
7439-97-6	Mercury	0.052	B		CV
7440-02-0	Nickel	6.7	B		P
7440-09-7	Potassium	391	B		P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U	N	P
7440-23-5	Sodium	6.1	B	*RM 2126103	P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	17.7		N	P
7440-66-6	Zinc	16.0		N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS104

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-08A

Level (low/med): MED Date Received: 02/07/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7990			P
7440-36-0	Antimony	0.60	B	~~N~~	P
7440-38-2	Arsenic	7.6		PSR 2/26/03	P
7440-39-3	Barium	81.5			P
7440-41-7	Beryllium	0.51		N	P
7440-43-9	Cadmium	0.14	B	~~PSR~~ 2/26/03	P
7440-70-2	Calcium	655	B		P
7440-47-3	Chromium	11.2			P
7440-48-4	Cobalt	2.4	B	N	P
7440-50-8	Copper	6.1		~~N~~ PSR 2/26/03	P
7439-89-6	Iron	7490			P
7439-92-1	Lead	24.6			P
7439-95-4	Magnesium	832	B		P
7439-96-5	Manganese	161			P
7439-97-6	Mercury	0.081	B		CV
7440-02-0	Nickel	5.8	B		P
7440-09-7	Potassium	350	B		P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.11	U	N PSR ~~2/26/03~~	P
7440-23-5	Sodium	5.1	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	16.7		N	P
7440-66-6	Zinc	29.1		N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-03A

Level (low/med): MED Date Received: 02/07/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5080			P
7440-36-0	Antimony	0.66	B	*N	P
7440-38-2	Arsenic	2.0		NR 2/26/03	P
7440-39-3	Barium	21.5			P
7440-41-7	Beryllium	0.25		N	P
7440-43-9	Cadmium	0.033	U	* NR	P
7440-70-2	Calcium	219	B	2/26/03	P
7440-47-3	Chromium	9.5			P
7440-48-4	Cobalt	1.6	B	N	P
7440-50-8	Copper	2.0	B	*N	P
7439-89-6	Iron	2710		NR	P
7439-92-1	Lead	1.9		2/26/03	P
7439-95-4	Magnesium	219	B		P
7439-96-5	Manganese	96.2			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	201	B		P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.093	U	N	P
7440-23-5	Sodium	16.3	B	*	P NR 2/26/03
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	5.5	B	N	P
7440-66-6	Zinc	3.7	B	N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-05A

Level (low/med): MED Date Received: 02/07/03

% Solids: 96.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2200			P	
7440-36-0	Antimony	0.14	U	N	P	
7440-38-2	Arsenic	1.1			P	
7440-39-3	Barium	8.9	B		P	
7440-41-7	Beryllium	0.13	B	N	P	
7440-43-9	Cadmium	0.032	U		P	
7440-70-2	Calcium	72.3	B		P	
7440-47-3	Chromium	2.3			P	
7440-48-4	Cobalt	0.24	B	N	P	
7440-50-8	Copper	0.48	B	N	P	
7439-89-6	Iron	1100			P	
7439-92-1	Lead	6.7			P	
7439-95-4	Magnesium	57.7	B		P	
7439-96-5	Manganese	21.0			P	
7439-97-6	Mercury	0.014	U		CV	
7440-02-0	Nickel	0.53	B		P	
7440-09-7	Potassium	70.9	B		P	
7782-49-2	Selenium	0.41	U		P	
7440-22-4	Silver	0.091	U	N	P	
7440-23-5	Sodium	3.8	U		P	
7440-28-0	Thallium	0.14	U		P	
7440-62-2	Vanadium	3.7	B	N	P	
7440-66-6	Zinc	0.87	B	N	P	
	Cyanide				NR	

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-07A

Level (low/med): MED Date Received: 02/07/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3180			P
7440-36-0	Antimony	0.40	B	*N	P
7440-38-2	Arsenic	1.1		R4c 212603	P
7440-39-3	Barium	12.3			P
7440-41-7	Beryllium	0.20	B	N	P
7440-43-9	Cadmium	0.034	U	*R4c	P
7440-70-2	Calcium	29.2	B	212603	P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	2.0	B	N	P
7440-50-8	Copper	1.2	B	*N	P
7439-89-6	Iron	2090		R4c 212603	P
7439-92-1	Lead	1.4	B		P
7439-95-4	Magnesium	234	B		P
7439-96-5	Manganese	44.5			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	137	B		P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.098	U	N	P
7440-23-5	Sodium	4.8	B	*R4c 212603	P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	4.4	B	N	P
7440-66-6	Zinc	3.4	B	N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Lab Sample ID: B0221-09A

Level (low/med): MED Date Received: 02/07/03

% Solids: 95.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1300			P
7440-36-0	Antimony	0.13	U	N	P
7440-38-2	Arsenic	0.81		RM 2/26/03	P
7440-39-3	Barium	8.8			P
7440-41-7	Beryllium	0.13	B	N	P
7440-43-9	Cadmium	0.031	U	RM 2/26/03	P
7440-70-2	Calcium	31.8	B		P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	0.30	B	N	P
7440-50-8	Copper	0.37	B	N	P
7439-89-6	Iron	760		RM 2/26/03	P
7439-92-1	Lead	0.87	B		P
7439-95-4	Magnesium	75.9	B		P
7439-96-5	Manganese	4.0			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.62	B		P
7440-09-7	Potassium	57.3	B		P
7782-49-2	Selenium	0.39	U		P
7440-22-4	Silver	0.088	U	N	P
7440-23-5	Sodium	3.6	U	RM 2/26/03	P
7440-28-0	Thallium	0.13	U		P
7440-62-2	Vanadium	2.2	B	N	P
7440-66-6	Zinc	1.1	B	N	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): WATER Lab Sample ID: B0221-10B

Level (low/med): MED Date Received: 02/07/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	12.9	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	0.91	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	9.0	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	9.7	B		P
7439-96-5	Manganese	3.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.98	B		P
7440-09-7	Potassium	321	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	8.2	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Percent Moisture and Percent Solids Report

Mitkem Sample ID	*Client Sample ID*	*Analyzed*	*Percent Moisture*	*Percent Solids*	*Validated*
B0221-02A	*W0D-SS-101*	02/10/2003	15	85	No
B0221-03A	*W0D-SV-101-1315*	02/10/2003	11	89	No
B0221-04A	*W0D-SS-102*	02/10/2003	10	90	No
B0221-05A	*W0D-SV-102-1517*	02/10/2003	4	96	No
B0221-06A	*W0D-SS-103*	02/10/2003	13	87	No
B0221-07A	*W0D-SV-103-1113*	02/10/2003	10	90	No
B0221-08A	*W0D-SS-104*	02/10/2003	15	85	No
B0221-09A	*W0D-SV-104-1012*	02/10/2003	5	95	No

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	W0DSS101
Lab Order:	B0221	**Tag Number:**	W0D-SS-101
Project:	Wallops Island	**Collection Date:**	2/6/03 8:08:00 AM
Lab ID:	B0221-02A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.3	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	W0DSS102
Lab Order:	B0221	**Tag Number:**	W0D-SS-102
Project:	Wallops Island	**Collection Date:**	2/6/03 8:53:00 AM
Lab ID:	B0221-04A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	5.5	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	W0DSS103
Lab Order:	B0221	**Tag Number:**	W0D-SS-103
Project:	Wallops Island	**Collection Date:**	2/6/03 9:55:00 AM
Lab ID:	B0221-06A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	5.9	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

B - Analyte detected in the associated Method Blank

* - Value exceeds Maximum Contaminant Level

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	W0DSS104
Lab Order:	B0221	**Tag Number:**	W0D-SS-104
Project:	Wallops Island	**Collection Date:**	2/6/03 11:45:00 AM
Lab ID:	B0221-08A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.2	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1751
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 001 B0221-02B GRAB 02/06/03 @0808

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.93	99.07
No. 10	4.03	95.04
No. 20	11.29	83.75
No. 40	12.78	70.97
No. 60	18.55	52.42
No. 140	39.50	12.92
No. 200	4.06	8.86

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1751
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 002 B0221-04B GRAB 02/06/03 @0853

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.57	99.43
No. 10	4.29	95.14
No. 20	9.65	85.49
No. 40	16.49	69.00
No. 60	28.53	40.47
No. 140	32.29	8.18
No. 200	2.30	5.88

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1751
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 003 B0221-06B GRAB 02/06/03 @0955

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.05	98.95
No. 10	10.90	88.05
No. 20	16.89	71.16
No. 40	15.88	55.28
No. 60	18.35	36.93
No. 140	27.09	9.84
No. 200	2.90	6.94

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1751
Date Received: 2/10/03

Approved by: _____
R.I. Analytical

Sample #: 004 B0221-08B GRAB 02/06/03 @1145

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	18.93	81.07
No. 10	9.08	71.99
No. 20	9.42	62.57
No. 40	11.61	50.96
No. 60	14.74	36.22
No. 140	22.36	13.86
No. 200	4.02	9.84

APPENDIX C

SUPPORT DOCUMENTATION

B0221

HOLDING TIME

04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0210LCSS	LCS	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
%	LCSW	0210LCSW	LCS	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	PBW	0210PBW	M_BLANK	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020603	B0221-10B	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101	B0221-02A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101DUP	B0221-02ADUP	DUPLICATE	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
%	W0D-SS-101MS	B0221-02AMS	MS	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-102	B0221-04A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-103	B0221-06A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-104	B0221-08A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
%	LCSS	0210LCSS	LCS	B0221	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSW	0210LCSW	LCS	B0221	M	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0221	M	/ /	02/10/03	02/10/03	0	0	0
UG/L	PBW	0210PBW	M_BLANK	B0221	M	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020603	B0221-10B	NORMAL	B0221	M	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101	B0221-02A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-101DUP	B0221-02ADUP	DUPLICATE	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
%	W0D-SS-101MS	B0221-02AMS	MS	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-102	B0221-04A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	W0D-SS-103	B0221-06A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-104	B0221-08A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
%	RB-020603	B0221-10C	NORMAL	B0221	OS	02/06/03	02/12/03	02/19/03	6	7	13
%	SBLK2F	MB-5702	M_BLANK	B0221	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2FLCS	LCS-5702	LCS	B0221	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2P	MB-6006	M_BLANK	B0221	OS	/ /	03/10/03	03/11/03	0	1	0
%	SBLK2PLCS	LCS-6006	LCS	B0221	OS	/ /	03/10/03	03/11/03	0	1	0
UG/L	SBLK2R	MB-5612	M_BLANK	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCS	LCS-5612	LCS	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCSD	LCSD-5612	LCSD	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	W0D-SS-101	B0221-02A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SS-101RE	B0221-02ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SS-102	B0221-04A	NORMAL	B0221	OS	02/06/03	02/19/03	03/02/03	13	11	24
%	W0D-SS-103	B0221-06A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SS-103RE	B0221-06ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SS-104	B0221-08A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
%	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
%	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	OS	02/06/03	02/19/03	03/02/03	13	11	24
%	W0D-SV-103-1113RE	B0221-07ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
UG/L	RB-020603	B0221-10A	NORMAL	B0221	OV	02/06/03	02/19/03	02/19/03	13	0	13
UG/L	TB-020603	B0221-01A	NORMAL	B0221	OV	02/06/03	02/19/03	02/19/03	13	0	13

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	VBLK1S	V1B0218A	M_BLANK	B0221	OV	/ /	02/18/03	02/18/03	0	0	0
%	VBLK1SLCS	V1L0218A	LCS	B0221	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5T	V5B0212A	M_BLANK	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5TLCS	V5L0212A	LCS	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5TLCSD	V5L0212B	LCSD	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5V	V5B0214A	M_BLANK	B0221	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK5VLCS	V5L0214A	LCS	B0221	OV	/ /	02/14/03	02/14/03	0	0	0
%	W0D-SS-101	B0221-02C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-102	B0221-04C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-103	B0221-06C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-104	B0221-08C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-101-1315	B0221-03B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-102-1517	B0221-05B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-103-1113	B0221-07B	NORMAL	B0221	OV	02/06/03	02/14/03	02/14/03	8	0	8
%	W0D-SV-104-1012	B0221-09B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-104-1012RE	B0221-09BRE	NORMAL	B0221	OV	02/06/03	02/14/03	02/14/03	8	0	8
%	BBLK1A	MB-5587	M_BLANK	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1ALCS	LCS-5587	LCS	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1ALCSD	LCSD-5587	LCSD	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1K	MB-5713	M_BLANK	B0221	PCB	/ /	02/19/03	02/21/03	0	2	0
%	BBLK1KLCS	LCS-5713	LCS	B0221	PCB	/ /	02/19/03	02/22/03	0	3	0
%	RB-020603	B0221-10C	NORMAL	B0221	PCB	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-101	B0221-02A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-102	B0221-04A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-103	B0221-06A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-104	B0221-08A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
S.U.	W0D-SS-101	B0221-02A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-102	B0221-04A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-103	B0221-06A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-104	B0221-08A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO

COMPANY: Tetra Tech NUS
PHONE: 610 491 9688
FAX: 610 491 9645
NAME: Garth Glenn
ADDRESS: 600 Clavic Avenue Suite 3
CITY/ST/ZIP: King of Prussia PA 19406
CLIENT PROJECT NAME: NASA WFF
CLIENT PROJECT #: CTO 848
CLIENT P.O.#:

INVOICE TO

COMPANY: Tetra Tech NUS
PHONE:
FAX:
NAME:
ADDRESS: Foster Plaza VII 661 Andersen Drive
CITY/ST/ZIP: Pittsburgh PA

LAB PROJECT #: B0221
TURNAROUND TIME:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	HCl VOA Vials	Full VOC Sm Encore Sampler	TCL VOC 40 Amber Glass	TCL SVOC PEST 40 Amber Glass	TAL Metals 250 Amber Plastic	PEST+PCB 40 Amber Glass	TAL Metals & Mercury 4oz Amber Glass	Grain Size 4oz Amber Glass	TAL Metals & Mercury 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TCL PCBs 500 ml Plain Glass	TAL Metals	COMMENTS
TB-020603	2/6/03 / 0700		X	X			01	2	2												
WOD-SS-101	2/6/03 / 0808		X		X		02			3	1					1					
WOD-SU-101-1315	2/6/03 / 0840		X		X		03			3	1	1	1	1			1 4 cans 2/4/03				
WOD-SS-102	2/6/03 / 0853		X		X		04			3	1					1					PID Reading 117 ppm
WOD-SB-102-1517	2/6/03 / 0940		X		X		05			3	1	1	1	1							
WOD-SS-103	2/6/03 / 0955		X		X		06			3	1					1					
WOD-SU-103-1113	2/6/03 / 1055		X		X		07			3	1	1	1	1							
WOD-SS-104	2/6/03 / 1145		X		X		08			3	1					1					
WOD-SU-104-1012	2/6/03 / 1227		X		X		09			3	1							X	X	X	
#TB-020603	2/6/03 / 1445		X	X			10	#7	X												
	/																				
	/																				

TSP#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	2/6/03 / 1700	[signature]	1-7-03 / 0900
		/		/
		/		/

ADDITIONAL REMARKS: Shipped Via Federal Express Airbill No 8286 8470 7111

COOLER TEMP: 4c

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

000013

* ... ON COC*

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and eight soil samples that were collected on February 6, 2003, and received at Mitkem on February 7, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of one surrogate in the reanalysis of sample SV1041012.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of methyl-t-butyl ether in the aqueous matrix LCS.

Sample analysis: due to sample matrix interference, internal standard areas were unusually low for both the initial and reanalysis of sample SV1041012. Internal standard areas were also low for sample WODSS103, due to matrix interference, as can be determined from the chromatogram. The two remaining aliquots for this sample were analyzed unsuccessfully, with one aliquot clogging the purge needle, such that no recovery of internal or surrogate standards was obtained, and the second aliquot being analyzed beyond the 12 hour time from the instrument tune. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of marginally low recovery of several surrogates in samples SV1031113, WODSS103 and WODSS101. The samples were re-extracted and analyzed with surrogate recoveries within the QC limits. Please note that the reextractions occurred beyond the method recommended holding time.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of 4-nitroaniline and carbazole in S2FLCS and high recovery of di-n-octylphthalate in S2PLCS.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a lower reporting limit. Samples in this batch from another analytical program required lower reporting limits. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WODSS101. Spike recoveries were outside of the QC limits for antimony, beryllium, cobalt, copper, silver, vanadium and zinc. A post digest spike was performed for all of these elements, with spike recoveries within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WODSS101. The relative percent difference between duplicate analyses for several elements exceeded the 20% QC limit. This does not affect the data as these concentrations did not exceed 5 times the nominal reporting limit. Please note that the QC limits are not applied where duplicate concentrations are less than 5 times the reporting limit. The "*" data qualifier for these metals have been crossed-off on the data sheets, indicating that these results do not require qualification.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/21/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0221

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0221-01A	TB-020603	TB-020603
B0221-02A	W0DSS101	W0D-SS-101
B0221-02B	W0DSS101	W0D-SS-101
B0221-02C	W0DSS101	W0D-SS-101
B0221-03A	SV1011315	W0D-SV-101-1315
B0221-03B	SV1011315	W0D-SV-101-1315
B0221-04A	W0DSS102	W0D-SS-102
B0221-04B	W0DSS102	W0D-SS-102
B0221-04C	W0DSS102	W0D-SS-102
B0221-05A	SV1021517	W0D-SV-102-1517
B0221-05B	SV1021517	W0D-SV-102-1517
B0221-06A	W0DSS103	W0D-SS-103
B0221-06B	W0DSS103	W0D-SS-103
B0221-06C	W0DSS103	W0D-SS-103
B0221-07A	SV1031113	W0D-SV-103-1113
B0221-07B	SV1031113	W0D-SV-103-1113
B0221-08A	W0DSS104	W0D-SS-104
B0221-08B	W0DSS104	W0D-SS-104
B0221-08C	W0DSS104	W0D-SS-104
B0221-09A	SV1041012	W0D-SV-104-1012
B0221-09B	SV1041012	W0D-SV-104-1012
B0221-10A	RB-020603	RB-020603
B0221-10B	RB-020603	RB-020603
B0221-10C	RB-020603	RB-020603

**** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"***

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
RB-020603	B0221-10B
SV1011315	B0221-03A
SV1021517	B0221-05A
SV1031113	B0221-07A
SV1041012	B0221-09A
W0DSS101	B0221-02A
W0DSS101D	B0221-02AD
W0DSS101S	B0221-02AS
W0DSS102	B0221-04A
W0DSS103	B0221-06A
W0DSS104	B0221-08A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Ronnie A. Currey

Date: 2/28/03 Title: Analyst

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 2/10/03
Work Order # 0302-01751

Approved by: _____
R.I. Analytical

Sample #: 001
SAMPLE DESCRIPTION: B0221-02B GRAB 02/06/03 @0808

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 7:30	CCP

Sieve - * See Attached

Sample #: 002
SAMPLE DESCRIPTION: B0221-04B GRAB 02/06/03 @0853

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 7:45	CCP

Sieve - * See Attached

Sample #: 003
SAMPLE DESCRIPTION: B0221-06B GRAB 02/06/03 @0955

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/02 8:30	CCP

Sieve - * See Attached

Sample #: 004
SAMPLE DESCRIPTION: B0221-08B GRAB 02/06/03 @1145

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/12/03 8:45	CCP

Sieve - * See Attached

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: ____ SDG No.: B0221

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	3.0	B	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.385	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	13.776	B	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.058	B	P
Copper	11.7	B	4.0	U	4.0	U	4.0	U	0.517	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.469	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.0	U	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.271	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.117	B	P
Potassium	499.9	B	266.8	B	259.9	B			9.869	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium	213.0	B	-99.7	B	-126.2	B			4.150	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.1	B	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ___

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0221___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	17.0	U	17.0	U	19.312	B	P
Antimony			3.4	B	3.0	U	4.0	B	3.000	U	P
Arsenic			3.0	U	3.0	U	3.0	U	3.000	U	P
Barium			4.0	U	4.0	U	4.0	U	6.092	B	P
Beryllium			0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium			0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium			240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium			0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt			0.9	U	0.9	U	0.9	U	0.900	U	P
Copper			4.0	U	4.0	U	4.0	U	5.831	B	P
Iron			26.0	U	26.0	U	26.0	U	26.000	U	P
Lead			4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium			8.0	U	8.0	U	8.0	U	17.696	B	P
Manganese			0.8	U	0.8	U	0.8	U	1.426	B	P
Mercury			0.1	U					0.100	U	CV
Nickel			0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium									319.665	B	P
Selenium			9.0	U	9.0	U	9.0	U	9.000	U	P
Silver			2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium									83.000	U	P
Thallium			3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium			0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc			7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: ___ SAS No.: _____ SDG No.: B0221___

Preparation Blank Matrix (soil/water): ___

Preparation Blank Concentration Units (ug/L or mg/kg): ___

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U							P
Antimony	7.5	B	3.5	B							P
Arsenic	3.0	U	3.0	U							P
Barium	4.0	U	4.0	U							P
Beryllium	0.5	U	0.5	U							P
Cadmium	0.7	U	0.7	U							P
Calcium	240.0	U	240.0	U							P
Chromium	0.6	U	0.6	U							P
Cobalt	0.9	U	0.9	U							P
Copper	4.5	B	4.0	U							P
Iron	26.0	U	26.0	U							P
Lead	4.0	U	4.0	U							P
Magnesium	8.0	U	8.0	U							P
Manganese	0.8	U	0.8	U							P
Mercury											
Nickel	0.8	U	0.8	U							P
Potassium											
Selenium	9.0	U	9.0	U							P
Silver	2.0	U	2.0	U							P
Sodium											
Thallium	3.0	U	3.0	U							P
Vanadium	0.7	U	0.7	U							P
Zinc	7.0	U	7.0	U							P
Cyanide											

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		26121.5	104.5		26835.8	107.3
Selenium								
Silver								
Sodium		25000		27073.2	108.3		26911.1	107.6
Thallium								
Vanadium								
Zinc								

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/l

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	527424	531880.7	106.4	533293	537534.7	107.5
Antimony		600		666.4	111.1		662.3	110.4
Arsenic		100		88.3	88.3		100.7	100.7
Barium		500		520.8	104.2		519.6	103.9
Beryllium		500		510.0	102.0		511.7	102.3
Cadmium		1000		952.2	95.2		946.3	94.6
Calcium	500000	500000	548972	557268.8	111.5	561520	561280.7	112.3
Chromium		500		489.2	97.8		487.2	97.4
Cobalt		500		470.3	94.1		450.8	90.2
Copper		500		555.8	111.2		535.5	107.1
Iron	200000	200000	188657	190169.3	95.1	191938	193196.3	96.6
Lead		500		504.4	100.9		508.6	101.7
Magnesium	500000	500000	519242	522834.2	104.6	526770	529698.7	105.9
Manganese		500		492.8	98.6		519.6	103.9
Mercury								
Nickel		1000		924.7	92.5		964.4	96.4
Potassium								
Selenium		500		522.3	104.5		513.0	102.6
Silver		200		191.1	95.6		183.1	91.6
Sodium								
Thallium		100		107.2	107.2		102.3	102.3
Vanadium		500		502.4	100.5		507.9	101.6
Zinc		1000		922.7	92.3		903.1	90.3

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	477465	496172.6	99.2	484670	495144.3	99.0
Antimony		600					691.0	115.2
Arsenic		100		94.9	94.9		91.2	91.2
Barium		500		486.8	97.4		477.3	95.5
Beryllium		500		469.8	94.0		469.3	93.9
Cadmium		1000		895.0	89.5		891.6	89.2
Calcium	500000	500000	496525	505077.7	101.0	495694	500386.7	100.1
Chromium		500		459.5	91.9		456.5	91.3
Cobalt		500		432.8	86.6		429.5	85.9
Copper		500		499.5	99.9		491.7	98.3
Iron	200000	200000	171028	176897.2	88.4	173651	176789.5	88.4
Lead		500		462.0	92.4		458.8	91.8
Magnesium	500000	500000	471063	487348.4	97.5	478494	487319.2	97.5
Manganese		500		462.1	92.4		459.2	91.8
Mercury								
Nickel		1000		871.5	87.2		868.0	86.8
Potassium								
Selenium		500		467.7	93.5		483.8	96.8
Silver		200		197.9	99.0		196.2	98.1
Sodium								
Thallium		100		91.5	91.5		94.9	94.9
Vanadium		500		471.2	94.2		468.1	93.6
Zinc		1000		857.7	85.8		851.3	85.1

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

ICP ID Number: OPTIMA_2A ICS Source: HIGH PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum								
Antimony		600		599.8	100.0		606.1	101.0
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc								

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-102	0.19	B	Aluminum	26371	-0.475	8190	-0.15	~~J~~ K	na
Arsenic	WOD-SS-102	4.3		Aluminum	26371	-0.345	8190	-0.11 ✓	na	na
Barium	WOD-SS-102	33.9		Aluminum	26371	-0.425	8190	-0.13	na	na
Cadmium	WOD-SS-102	0.035	U	Aluminum	26371	0.055	8190	0.02	na	na
Cobalt	WOD-SS-102	2		Aluminum	26371	-0.08	8190	-0.02	na	na
Copper	WOD-SS-102	3.2		Aluminum	26371	0.8	8190	0.25	na	na
Lead	WOD-SS-102	16.8		Aluminum	26371	0.65	8190	0.20	na	na
Manganese	WOD-SS-102	66.2		Aluminum	26371	-0.24	8190	-0.07	na	na
Potassium	WOD-SS-102	229		Aluminum	26371	14.24	8190	4.42	na	na
Selenium	WOD-SS-102	0.45	U	Aluminum	26371	-0.675	8190	-0.21	na	~~UJ~~ UL
Silver	WOD-SS-102	0.1	U	Aluminum	26371	-1.065	8190	-0.33	na	~~UJ~~ UL
Sodium	WOD-SS-102	4.2	U	Aluminum	26371	-8.685	8190	-2.70	na	~~UJ~~ UL
Thallium	WOD-SS-102	0.15	U	Aluminum	26371	0.27	8190	0.08	na	na
Vanadium	WOD-SS-102	12.2		Aluminum	26371	-0.055	8190	-0.02	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-103	0.49	B	Aluminum	26371	-0.475	11600	-0.21	~~J~~ K	na
Arsenic	WOD-SS-103	6.2		Aluminum	26371	-0.345	11600	-0.15	na	na
Barium	WOD-SS-103	48.3		Aluminum	26371	-0.425	11600	-0.19	na	na
Cadmium	WOD-SS-103	0.037	U	Aluminum	26371	0.055	11600	0.02	na	na
Cobalt	WOD-SS-103	3.2		Aluminum	26371	-0.08	11600	-0.04	na	na
Copper	WOD-SS-103	5.1		Aluminum	26371	0.8	11600	0.35	na	na
Lead	WOD-SS-103	8.4		Aluminum	26371	0.65	11600	0.29	na	na
Manganese	WOD-SS-103	166		Aluminum	26371	-0.24	11600	-0.11	na	na
Potassium	WOD-SS-103	391		Aluminum	26371	14.24	11600	6.26	na	na
Selenium	WOD-SS-103	0.47	U	Aluminum	26371	-0.675	11600	-0.30	na	~~UJ~~ UL
Silver	WOD-SS-103	0.1	U	Aluminum	26371	-1.065	11600	-0.47	na	~~UJ~~ UL
Sodium	WOD-SS-103	6.1	B	Aluminum	26371	-8.685	11600	-3.82	~~J~~ K	na
Thallium	WOD-SS-103	0.16	U	Aluminum	26371	0.27	11600	0.12	na	na
Vanadium	WOD-SS-103	17.7		Aluminum	26371	-0.055	11600	-0.02	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-104	0.6	B	Aluminum	26371	-0.475	7990	-0.14	~~J~~ K	na
Arsenic	WOD-SS-104	7.6		Aluminum	26371	-0.345	7990	-0.10	na	na
Barium	WOD-SS-104	81.5		Aluminum	26371	-0.425	7990	-0.13	na	na
Cadmium	WOD-SS-104	0.14		Aluminum	26371	0.055	7990	0.02	~~J~~ K	na
Cobalt	WOD-SS-104	2.4		Aluminum	26371	-0.08	7990	-0.02	na	na
Copper	WOD-SS-104	6.1		Aluminum	26371	0.8	7990	0.24	na	na
Lead	WOD-SS-104	24.6		Aluminum	26371	0.65	7990	0.20	na	na
Manganese	WOD-SS-104	161		Aluminum	26371	-0.24	7990	-0.07	na	na
Potassium	WOD-SS-104	350		Aluminum	26371	14.24	7990	4.31	na	na
Selenium	WOD-SS-104	0.48	U	Aluminum	26371	-0.675	7990	-0.20	na	~~UJ~~ UL
Silver	WOD-SS-104	0.11	U	Aluminum	26371	-1.065	7990	-0.32	na	~~UJ~~ UL
Sodium	WOD-SS-104	5.1	B	Aluminum	26371	-8.685	7990	-2.63	~~J~~ K	na
Thallium	WOD-SS-104	0.16	U	Aluminum	26371	0.27	7990	0.08	na	na
Vanadium	WOD-SS-104	16.7		Aluminum	26371	-0.055	7990	-0.02	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-102	0.19	B	Iron	9433	-0.475	6650	-0.33	~~J~~ K	na
Arsenic	WOD-SS-102	4.3		Iron	9433	-0.345	6650	-0.24	na	na
Barium	WOD-SS-102	33.9		Iron	9433	-0.425	6650	-0.30	na	na
Cadmium	WOD-SS-102	0.035	U	Iron	9433	0.055	6650	0.04	na	na
Cobalt	WOD-SS-102	2		Iron	9433	-0.08	6650	-0.06	na	na
Copper	WOD-SS-102	3.2		Iron	9433	0.8	6650	0.56	~~J~~ K	na
Lead	WOD-SS-102	16.8		Iron	9433	0.65	6650	0.46	na	na
Manganese	WOD-SS-102	66.2		Iron	9433	-0.24	6650	-0.17	na	na
Potassium	WOD-SS-102	229		Iron	9433	14.24	6650	10.04	na	na
Selenium	WOD-SS-102	0.45	U	Iron	9433	-0.675	6650	-0.48	na	~~UJ~~ UL
Silver	WOD-SS-102	0.1	U	Iron	9433	-1.065	6650	-0.75	na	~~UJ~~ UL
Sodium	WOD-SS-102	4.2	U	Iron	9433	-8.685	6650	-6.12	na	~~UJ~~ UL
Thallium	WOD-SS-102	0.15	U	Iron	9433	0.27	6650	0.19	na	na
Vanadium	WOD-SS-102	12.2		Iron	9433	-0.055	6650	-0.04	na	na

J - conf. bias

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-103	0.49	B	Iron	9433	-0.475	10200	-0.51	~~J-~~	na
Arsenic	WOD-SS-103	6.2		Iron	9433	-0.345	10200	-0.37	na	na
Barium	WOD-SS-103	48.3		Iron	9433	-0.425	10200	-0.46	na	na
Cadmium	WOD-SS-103	0.037	U	Iron	9433	0.055	10200	0.06	na	na
Cobalt	WOD-SS-103	3.2		Iron	9433	-0.08	10200	-0.09	na	na
Copper	WOD-SS-103	5.1		Iron	9433	0.8	10200	0.87	J+	na
Lead	WOD-SS-103	8.4		Iron	9433	0.65	10200	0.70	na	na
Manganese	WOD-SS-103	166		Iron	9433	-0.24	10200	-0.26	na	na
Potassium	WOD-SS-103	391		Iron	9433	14.24	10200	15.40	na	na
Selenium	WOD-SS-103	0.47	U	Iron	9433	-0.675	10200	-0.73	na	~~UJ~~ UL
Silver	WOD-SS-103	0.1	U	Iron	9433	-1.065	10200	-1.15	na	~~UJ~~ UL
Sodium	WOD-SS-103	6.1	B	Iron	9433	-8.685	10200	-9.39	~~J-~~	na
Thallium	WOD-SS-103	0.16	U	Iron	9433	0.27	10200	0.29	na	na
Vanadium	WOD-SS-103	17.7		Iron	9433	-0.055	10200	-0.06	na	na

J - conf. bias

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-104	0.6	B	Iron	9433	-0.475	7490	-0.38	~~J-~~	na
Arsenic	WOD-SS-104	7.6		Iron	9433	-0.345	7490	-0.27	na	na
Barium	WOD-SS-104	81.5		Iron	9433	-0.425	7490	-0.34	na	na
Cadmium	WOD-SS-104	0.14		Iron	9433	0.055	7490	0.04	J+	na
Cobalt	WOD-SS-104	2.4		Iron	9433	-0.08	7490	-0.06	na	na
Copper	WOD-SS-104	6.1		Iron	9433	0.8	7490	0.64	J+	na
Lead	WOD-SS-104	24.6		Iron	9433	0.65	7490	0.52	na	na
Manganese	WOD-SS-104	161		Iron	9433	-0.24	7490	-0.19	na	na
Potassium	WOD-SS-104	350		Iron	9433	14.24	7490	11.31	na	na
Selenium	WOD-SS-104	0.48	U	Iron	9433	-0.675	7490	-0.54	na	~~UJ~~ UL
Silver	WOD-SS-104	0.11	U	Iron	9433	-1.065	7490	-0.85	na	~~UJ~~ UL
Sodium	WOD-SS-104	5.1	B	Iron	9433	-8.685	7490	-6.90	J-	na
Thallium	WOD-SS-104	0.16	U	Iron	9433	0.27	7490	0.21	na	na
Vanadium	WOD-SS-104	16.7		Iron	9433	-0.055	7490	-0.04	na	na

J - Conf. bias

Ag 328.068	369384.4	1.1487 mg/L	0.00142	1.1487 mg/L	0.00142	0.12%
Al 308.215	516672.6	9.7616 mg/L	0.03419	9.7616 mg/L	0.03419	0.35%
As 188.979	1221.2	0.5175 mg/L	0.00330	0.5175 mg/L	0.00330	0.64%
Ba 233.527	1012892.8	10.691 mg/L	0.0187	10.691 mg/L	0.0187	0.18%
Be 313.107	2354908.4	0.2535 mg/L	0.00053	0.2535 mg/L	0.00053	0.21%
Co 228.616	101992.5	2.5680 mg/L	0.00327	2.5680 mg/L	0.00327	0.13%
Cr 267.716	355921.1	1.0068 mg/L	0.00245	1.0068 mg/L	0.00245	0.24%
Cu 324.752	650204.4	1.3009 mg/L	0.00210	1.3009 mg/L	0.00210	0.16%
Fe 273.955	273093.8	5.0934 mg/L	0.00990	5.0934 mg/L	0.00990	0.19%
Mg 279.077	1201269.3	25.480 mg/L	0.0762	25.480 mg/L	0.0762	0.30%
Mn 257.610	1214270.7	2.5662 mg/L	0.00007	2.5662 mg/L	0.00007	0.00%
Ni 231.604	221512.9	2.5666 mg/L	0.00919	2.5666 mg/L	0.00919	0.36%
Pb 220.353	11603.6	0.5061 mg/L	0.00206	0.5061 mg/L	0.00206	0.41%
Sb 206.836	2230.7	0.5813 mg/L	0.00504	0.5813 mg/L	0.00504	0.87%
Se 196.026	1020.6	0.4953 mg/L	0.00042	0.4953 mg/L	0.00042	0.09%
Tl 190.801	1275.1	0.5174 mg/L	0.00013	0.5174 mg/L	0.00013	0.02%
V 292.402	1008529.0	2.5361 mg/L	0.00183	2.5361 mg/L	0.00183	0.07%
Zn 206.200	252931.9	2.5627 mg/L	0.00251	2.5627 mg/L	0.00251	0.10%
Na 330.237	54666.5	24.293 mg/L	0.0679	24.293 mg/L	0.0679	0.28%
Cd 226.502	83749.9	0.2526 mg/L	0.00019	0.2526 mg/L	0.00019	0.07%
Ti 334.940	2494.8	0.0018 mg/L	0.00011	0.0018 mg/L	0.00011	6.00%
Ca 227.546	16284.2	24.696 mg/L	0.0879	24.696 mg/L	0.0879	0.36%

Sequence No.: 11
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/10/2003 4:38:11 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:13 AM,

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	20.3	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	21.99%
Al 308.215	-200.3	-0.0038	mg/L	0.00120	-0.0038	mg/L	0.00120	31.73%
As 188.979	-0.4	-0.0002	mg/L	0.00000	-0.0002	mg/L	0.00000	2.31%
Ba 233.527	216.7	0.0023	mg/L	0.00008	0.0023	mg/L	0.00008	3.63%
Be 313.107	4613.9	0.0005	mg/L	0.00002	0.0005	mg/L	0.00002	4.16%
Co 228.616	10.2	0.0003	mg/L	0.00006	0.0003	mg/L	0.00006	22.85%
Cr 267.716	-71.8	-0.0002	mg/L	0.00013	-0.0002	mg/L	0.00013	61.73%
Cu 324.752	5836.0	0.0117	mg/L	0.00118	0.0117	mg/L	0.00118	10.05%
Fe 273.955	56.2	0.0010	mg/L	0.00097	0.0010	mg/L	0.00097	92.10%
Mg 279.077	-174.6	-0.0037	mg/L	0.00164	-0.0037	mg/L	0.00164	44.32%
Mn 257.610	117.8	0.0002	mg/L	0.00002	0.0002	mg/L	0.00002	7.31%
Ni 231.604	24.4	0.0003	mg/L	0.00006	0.0003	mg/L	0.00006	20.76%
Pb 220.353	-2.1	-0.0001	mg/L	0.00024	-0.0001	mg/L	0.00024	259.89%
Sb 206.836	13.4	0.0035	mg/L	0.00155	0.0035	mg/L	0.00155	44.71%
Se 196.026	-1.6	-0.0008	mg/L	0.00079	-0.0008	mg/L	0.00079	101.06%
Tl 190.801	3.6	0.0015	mg/L	0.00063	0.0015	mg/L	0.00063	43.20%
V 292.402	62.7	0.0002	mg/L	0.00007	0.0002	mg/L	0.00007	44.79%
Zn 206.200	701.4	0.0071	mg/L	0.00080	0.0071	mg/L	0.00080	11.22%
Na 330.237	297.8	0.1326	mg/L	0.03319	0.1326	mg/L	0.03319	25.03%
Cd 226.502	18.6	0.0001	mg/L	0.00000	0.0001	mg/L	0.00000	3.65%
Ti 334.940	223.9	0.0002	mg/L	0.00009	0.0002	mg/L	0.00009	56.61%
Ca 227.546	4.7	0.0069	mg/L	0.05096	0.0069	mg/L	0.05096	736.05%

Sequence No.: ~~12~~
Sample ID: ICSA0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/10/2003 4:42:13 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:14 AM,

Mean Data: ICSA0

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-13614.5	~~-0.0192~~	mg/L	0.00116	-0.0192	mg/L	0.00116	6.06%
Al 308.215	27916187.9	527.42	mg/L	2.286	527.42	mg/L	2.286	0.43%
As 188.979	-8.0	-0.0069	mg/L	0.01071	-0.0069	mg/L	0.01071	156.15%

ICSA0

Ba 233.527	506.7	-0.0047 mg/L	0.00021	-0.0047 mg/L	0.00021	4.57%
Be 313.107	1993.9	-0.0002 mg/L	0.00002	0.0002 mg/L	0.00002	7.10%
Co 228.616	-16.5	-0.0014 mg/L	0.00047	-0.0014 mg/L	0.00047	32.51%
Cr 267.716	-785.4	0.0001 mg/L	0.00027	0.0001 mg/L	0.00027	180.82%
Cu 324.752	-4191.5	0.0160 mg/L	0.00017	0.0160 mg/L	0.00017	1.08%
Fe 273.955	10115281.2	188.66 mg/L	0.742	188.66 mg/L	0.742	0.39%
Mg 279.077	24492814.6	519.24 mg/L	1.895	519.24 mg/L	1.895	0.36%
Mn 257.610	-1610.9	-0.0048 mg/L	0.00010	-0.0048 mg/L	0.00010	2.16%
Ni 231.604	37.7	0.0004 mg/L	0.00006	0.0004 mg/L	0.00006	14.30%
Pb 220.353	-645.9	0.0130 mg/L	0.00083	0.0130 mg/L	0.00083	6.39%
Sb 206.836	-43.1	-0.0001 mg/L	0.00084	-0.0001 mg/L	0.00084	>999.9%
Se 196.026	-130.6	-0.0135 mg/L	0.01874	-0.0135 mg/L	0.01874	138.75%
Tl 190.801	8.9	0.0047 mg/L	0.00433	0.0047 mg/L	0.00433	92.02%
V 292.402	196.2	-0.0011 mg/L	0.00003	-0.0011 mg/L	0.00003	2.38%
Zn 206.200	2615.8	-0.0003 mg/L	0.00000	-0.0003 mg/L	0.00000	0.54%
Na 330.237	941.2	0.1580 mg/L	0.13308	0.1580 mg/L	0.13308	84.23%
Cd 226.502	2818.0	0.0011 mg/L	0.00006	0.0011 mg/L	0.00006	4.91%
Ti 334.940	9912.0	0.0110 mg/L	0.00020	0.0110 mg/L	0.00020	1.81%
Ca 227.546	360280.3	548.97 mg/L	11.617	548.97 mg/L	11.617	2.12%

Sequence No.: 13
Sample ID: ICSAB0
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/10/2003 4:44:52 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:16 AM,

Mean Data: ICSAB0

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	54016.6	0.1911	mg/L	0.00123	0.1911	mg/L	0.00123	0.64%
Al 308.215	28152088.0	531.88	mg/L	0.171	531.88	mg/L	0.171	0.03%
As 188.979	209.7	0.0883	mg/L	0.00880	0.0883	mg/L	0.00880	9.96%
Ba 233.527	50210.6	0.5208	mg/L	0.00110	0.5208	mg/L	0.00110	0.21%
Be 313.107	4737325.0	0.5100	mg/L	0.00070	0.5100	mg/L	0.00070	0.14%
Co 228.616	18720.4	0.4703	mg/L	0.00124	0.4703	mg/L	0.00124	0.26%
Cr 267.716	172106.9	0.4892	mg/L	0.00065	0.4892	mg/L	0.00065	0.13%
Cu 324.752	265275.6	0.5558	mg/L	0.00112	0.5558	mg/L	0.00112	0.20%
Fe 273.955	10196383.9	190.17	mg/L	0.027	190.17	mg/L	0.027	0.01%
Mg 279.077	24662127.1	522.83	mg/L	0.029	522.83	mg/L	0.029	0.01%
Mn 257.610	233817.2	0.4928	mg/L	0.00053	0.4928	mg/L	0.00053	0.11%
Ni 231.604	79804.7	0.9247	mg/L	0.00012	0.9247	mg/L	0.00012	0.01%
Pb 220.353	10638.0	0.5044	mg/L	0.00038	0.5044	mg/L	0.00038	0.08%
Sb 206.836	2644.7	0.6963	mg/L	0.00116	0.6963	mg/L	0.00116	0.17%
Se 196.026	970.6	0.5223	mg/L	0.00509	0.5223	mg/L	0.00509	0.97%
Tl 190.801	261.8	0.1072	mg/L	0.00946	0.1072	mg/L	0.00946	8.82%
V 292.402	200166.1	0.5024	mg/L	0.00090	0.5024	mg/L	0.00090	0.18%
Zn 206.200	93656.8	0.9227	mg/L	0.00084	0.9227	mg/L	0.00084	0.09%
Na 330.237	63451.9	27.974	mg/L	0.0791	27.974	mg/L	0.0791	0.28%
Cd 226.502	318620.3	0.9522	mg/L	0.00112	0.9522	mg/L	0.00112	0.12%
Ti 334.940	10058.5	0.0111	mg/L	0.00008	0.0111	mg/L	0.00008	0.71%
Ca 227.546	365745.0	557.27	mg/L	0.998	557.27	mg/L	0.998	0.18%

Sequence No.: 14
Sample ID: MB-5552,5552
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 2/10/2003 4:47:36 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:22:19 AM,

5/6/03

Mean Data: MB-5552,5552

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	451.3	0.0014	mg/L	0.00006	0.0014	mg/L	0.00006	4.40%
Al 308.215	110.7	0.0021	mg/L	0.00365	0.0021	mg/L	0.00365	174.41%
As 188.979	-0.9	-0.0003	mg/L	0.00043	-0.0003	mg/L	0.00043	125.45%
Ba 233.527	3757.0	0.0396	mg/L	0.00279	0.0396	mg/L	0.00279	7.04%
Be 313.107	4162.7	0.0004	mg/L	0.00002	0.0004	mg/L	0.00002	3.96%
Co 228.616	60.8	0.0015	mg/L	0.00020	0.0015	mg/L	0.00020	12.80%

V 292.402	126225.0	0.3147 mg/L	0.00227	0.3147 mg/L	0.00227	0.72%
Zn 206.200	54755.2	0.5496 mg/L	0.00379	0.5496 mg/L	0.00379	0.69%
Na 330.237	1166.2	1.5757 mg/L	0.09967	1.5757 mg/L	0.09967	6.33%
Cd 226.502	2728.5	0.0027 mg/L	0.00021	0.0027 mg/L	0.00021	7.58%
Ti 334.940	4519451.1	3.2550 mg/L	0.05277	3.2550 mg/L	0.05277	1.62%
Ca 227.546	8853.1	12.354 mg/L	0.0514	12.354 mg/L	0.0514	0.42%

Sequence No.: 69
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 57
Date Collected: 2/10/2003 8:27:42 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:30 AM,

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1670.6	-0.0020	mg/L	0.00017	-0.0020	mg/L	0.00017	8.75%
Al 308.215	1569119.2	29.646	mg/L	0.0767	29.646	mg/L	0.0767	0.26%
As 188.979	41.5	0.0184	mg/L	0.00089	0.0184	mg/L	0.00089	4.87%
Ba 233.527	19144.8	0.2013	mg/L	0.00089	0.2013	mg/L	0.00089	0.44%
Be 313.107	20087.0	0.0030	mg/L	0.00001	0.0030	mg/L	0.00001	0.22%
Co 228.616	323.9	0.0069	mg/L	0.00002	0.0069	mg/L	0.00002	0.33%
Cr 267.716	13291.0	0.0378	mg/L	0.00038	0.0378	mg/L	0.00038	1.00%
Cu 324.752	3368.7	0.0084	mg/L	0.00042	0.0084	mg/L	0.00042	5.03%
Fe 273.955	928888.2	17.324	mg/L	0.0151	17.324	mg/L	0.0151	0.09%
Mg 279.077	81600.5	1.7304	mg/L	0.00199	1.7304	mg/L	0.00199	0.12%
Mn 257.610	43154.5	0.0917	mg/L	0.00024	0.0917	mg/L	0.00024	0.26%
Ni 231.604	1246.8	0.0142	mg/L	0.00016	0.0142	mg/L	0.00016	1.13%
Pb 220.353	388.5	0.0198	mg/L	0.00066	0.0198	mg/L	0.00066	3.31%
Sb 206.836	0.8	0.0018	mg/L	0.00050	0.0018	mg/L	0.00050	28.16%
Se 196.026	-9.7	-0.0006	mg/L	0.00098	-0.0006	mg/L	0.00098	175.33%
Tl 190.801	2.1	0.0025	mg/L	0.00014	0.0025	mg/L	0.00014	5.68%
V 292.402	20287.2	0.0505	mg/L	0.00008	0.0505	mg/L	0.00008	0.16%
Zn 206.200	2632.7	0.0257	mg/L	0.00010	0.0257	mg/L	0.00010	0.38%
Na 330.237	926.8	0.6498	mg/L	0.01607	0.6498	mg/L	0.01607	2.47%
Cd 226.502	147.9	-0.0002	mg/L	0.00000	-0.0002	mg/L	0.00000	1.48%
Ti 334.940	1118696.0	0.8057	mg/L	0.00102	0.8057	mg/L	0.00102	0.13%
Ca 227.546	564.7	0.7239	mg/L	0.01906	0.7239	mg/L	0.01906	2.63%

Sequence No.: 70
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/10/2003 8:31:43 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:31 AM,

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-14403.6	-0.0213	mg/L	0.00066	-0.0213	mg/L	0.00066	3.08%
Al 308.215	28226827.5	533.29	mg/L	2.004	533.29	mg/L	2.004	0.38%
As 188.979	-4.4	-0.0053	mg/L	0.00435	-0.0053	mg/L	0.00435	82.03%
Ba 233.527	163.5	-0.0085	mg/L	0.00008	-0.0085	mg/L	0.00008	0.92%
Be 313.107	-643.0	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	15.00%
Co 228.616	-21.6	-0.0016	mg/L	0.00036	-0.0016	mg/L	0.00036	22.37%
Cr 267.716	-817.6	0.0001	mg/L	0.00009	0.0001	mg/L	0.00009	92.03%
Cu 324.752	-10251.4	0.0043	mg/L	0.00007	0.0043	mg/L	0.00007	1.65%
Fe 273.955	10291223.6	191.94	mg/L	0.548	191.94	mg/L	0.548	0.29%
Mg 279.077	24847893.9	526.77	mg/L	1.493	526.77	mg/L	1.493	0.28%
Mn 257.610	-1512.6	-0.0046	mg/L	0.00010	-0.0046	mg/L	0.00010	2.17%
Ni 231.604	48.7	0.0006	mg/L	0.00022	0.0006	mg/L	0.00022	39.69%
Pb 220.353	-666.5	0.0126	mg/L	0.00067	0.0126	mg/L	0.00067	5.37%
Sb 206.836	-64.1	-0.0053	mg/L	0.00053	-0.0053	mg/L	0.00053	9.96%
Se 196.026	-105.2	-0.0003	mg/L	0.01366	-0.0003	mg/L	0.01366	>999.9%
Tl 190.801	10.4	0.0054	mg/L	0.01375	0.0054	mg/L	0.01375	256.69%
V 292.402	333.7	-0.0008	mg/L	0.00020	-0.0008	mg/L	0.00020	26.58%
Zn 206.200	2086.1	-0.0061	mg/L	0.00005	-0.0061	mg/L	0.00005	0.86%
Na 330.237	937.1	0.1484	mg/L	0.06855	0.1484	mg/L	0.06855	46.18%

ICSA1

Cd 226.502	2641.1	0.0005	mg/L	0.00014	0.0005	mg/L	0.00014 29.58%
Ti 334.940	10335.0	0.0114	mg/L	0.00010	0.0114	mg/L	0.00010 0.92%
Ca 227.546	368511.2	561.52	mg/L	0.256	561.52	mg/L	0.256 0.05%

Sequence No.: 71 **Autosampler Location: 6**
Sample ID: ICSAB1 **Date Collected: 2/10/2003 8:34:22 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Reprocessed on 2/11/2003 9:23:32 AM,**

Mean Data: ICSAB1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	51286.6	0.1831	mg/L	0.00051	0.1831	mg/L	0.00051	0.28%
Al 308.215	28451348.4	537.53	mg/L	4.687	537.53	mg/L	4.687	0.87%
As 188.979	239.4	0.1007	mg/L	0.00716	0.1007	mg/L	0.00716	7.11%
Ba 233.527	50110.1	0.5196	mg/L	0.00226	0.5196	mg/L	0.00226	0.44%
Be 313.107	4752627.8	0.5117	mg/L	0.00429	0.5117	mg/L	0.00429	0.84%
Co 228.616	17949.9	0.4508	mg/L	0.00870	0.4508	mg/L	0.00870	1.93%
Cr 267.716	171396.2	0.4872	mg/L	0.00371	0.4872	mg/L	0.00371	0.76%
Cu 324.752	254945.3	0.5355	mg/L	0.00224	0.5355	mg/L	0.00224	0.42%
Fe 273.955	10358685.3	193.20	mg/L	1.354	193.20	mg/L	1.354	0.70%
Mg 279.077	24985922.2	529.70	mg/L	3.918	529.70	mg/L	3.918	0.74%
Mn 257.610	246484.7	0.5196	mg/L	0.00227	0.5196	mg/L	0.00227	0.44%
Ni 231.604	83226.7	0.9644	mg/L	0.00416	0.9644	mg/L	0.00416	0.43%
Pb 220.353	10723.9	0.5086	mg/L	0.00671	0.5086	mg/L	0.00671	1.32%
Sb 206.836	2712.8	0.7141	mg/L	0.00362	0.7141	mg/L	0.00362	0.51%
Se 196.026	950.0	0.5130	mg/L	0.00516	0.5130	mg/L	0.00516	1.01%
Tl 190.801	249.2	0.1023	mg/L	0.00404	0.1023	mg/L	0.00404	3.95%
V 292.402	202376.0	0.5079	mg/L	0.00429	0.5079	mg/L	0.00429	0.85%
Zn 206.200	91756.0	0.9031	mg/L	0.00532	0.9031	mg/L	0.00532	0.59%
Na 330.237	63714.8	28.091	mg/L	0.0317	28.091	mg/L	0.0317	0.11%
Cd 226.502	316696.4	0.9463	mg/L	0.00564	0.9463	mg/L	0.00564	0.60%
Ti 334.940	10010.5	0.0111	mg/L	0.00010	0.0111	mg/L	0.00010	0.88%
Ca 227.546	368387.0	561.28	mg/L	5.708	561.28	mg/L	5.708	1.02%

Sequence No.: 72 **Autosampler Location: 3**
Sample ID: CCV5 **Date Collected: 2/10/2003 8:37:06 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Reprocessed on 2/11/2003 9:23:34 AM,**

Mean Data: CCV5

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	360106.1	1.1199	mg/L	0.00247	1.1199	mg/L	0.00247	0.22%
Al 308.215	525357.0	9.9256	mg/L	0.04092	9.9256	mg/L	0.04092	0.41%
As 188.979	1256.0	0.5319	mg/L	0.00345	0.5319	mg/L	0.00345	0.65%
Ba 233.527	1027470.1	10.845	mg/L	0.0502	10.845	mg/L	0.0502	0.46%
Be 313.107	2349501.7	0.2530	mg/L	0.00092	0.2530	mg/L	0.00092	0.36%
Co 228.616	98476.7	2.4795	mg/L	0.01128	2.4795	mg/L	0.01128	0.45%
Cr 267.716	355478.5	1.0055	mg/L	0.00349	1.0055	mg/L	0.00349	0.35%
Cu 324.752	627398.8	1.2550	mg/L	0.00498	1.2550	mg/L	0.00498	0.40%
Fe 273.955	279476.7	5.2124	mg/L	0.01416	5.2124	mg/L	0.01416	0.27%
Mg 279.077	1214657.9	25.764	mg/L	0.0975	25.764	mg/L	0.0975	0.38%
Mn 257.610	1281935.7	2.7093	mg/L	0.01403	2.7093	mg/L	0.01403	0.52%
Ni 231.604	230778.4	2.6739	mg/L	0.02222	2.6739	mg/L	0.02222	0.83%
Pb 220.353	11780.3	0.5138	mg/L	0.00305	0.5138	mg/L	0.00305	0.59%
Sb 206.836	2308.7	0.6015	mg/L	0.00642	0.6015	mg/L	0.00642	1.07%
Se 196.026	1003.7	0.4870	mg/L	0.00084	0.4870	mg/L	0.00084	0.17%
Tl 190.801	1260.4	0.5121	mg/L	0.00357	0.5121	mg/L	0.00357	0.70%
V 292.402	1012953.2	2.5472	mg/L	0.01258	2.5472	mg/L	0.01258	0.49%
Zn 206.200	249801.5	2.5310	mg/L	0.01409	2.5310	mg/L	0.01409	0.56%
Na 330.237	54779.8	24.343	mg/L	0.1128	24.343	mg/L	0.1128	0.46%
Cd 226.502	83460.3	0.2517	mg/L	0.00056	0.2517	mg/L	0.00056	0.22%
Ti 334.940	2263.6	0.0016	mg/L	0.00007	0.0016	mg/L	0.00007	4.39%
Ca 227.546	16225.4	24.604	mg/L	0.1612	24.604	mg/L	0.1612	0.66%

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	-1492.2	-0.0290	mg/L	0.00070	-0.0290	mg/L	0.00070	2.43%
Cr 267.716	-2.7	0.0000	mg/L	0.00024	0.0000	mg/L	0.00024	>999.9%
Cu 324.752	13036.3	0.0256	mg/L	0.00370	0.0256	mg/L	0.00370	14.42%
Fe 273.955	-103.6	-0.0021	mg/L	0.00200	-0.0021	mg/L	0.00200	96.72%
Mg 279.077	-401.2	-0.0091	mg/L	0.00157	-0.0091	mg/L	0.00157	17.32%
Mn 257.610	69.4	0.0002	mg/L	0.00004	0.0002	mg/L	0.00004	19.51%
Ni 231.604	22.0	0.0003	mg/L	0.00009	0.0003	mg/L	0.00009	28.42%
Sb 206.836	19.4	0.0058	mg/L	0.00089	0.0058	mg/L	0.00089	15.16%
Tl 190.801	-2.4	-0.0010	mg/L	0.00034	-0.0010	mg/L	0.00034	35.28%
V 292.402	170.5	0.0005	mg/L	0.00021	0.0005	mg/L	0.00021	43.64%
Ti 334.940	-598.2	-0.0006	mg/L	0.00010	-0.0006	mg/L	0.00010	17.89%
Ca 227.546	22.0	0.0334	mg/L	0.02310	0.0334	mg/L	0.02310	69.07%

Analysis Begun

Start Time: 2/11/2003 8:42:46 AM
Logged In Analyst: optima2
Spectrometer Model: Optima 3100 XL
Plasma On Time: 2/10/2003 2:41:51 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: D:\pe\optima2\Sample Information\KMG.sif
Results Data Set: A021101
Results Library: D:\pe\optima2\Results\Results.mdb

Sequence No.: 9
Sample ID: ICSA0
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/2003 8:42:46 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA0

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	27708754.5	538.02	mg/L	4.468	538.02	mg/L	4.468	0.83%
Cr 267.716	-771.1	0.0002	mg/L	0.00022	0.0002	mg/L	0.00022	121.25%
Cu 324.752	478.2	0.0258	mg/L	0.00007	0.0258	mg/L	0.00007	0.26%
Fe 273.955	9626092.2	191.98	mg/L	1.306	191.98	mg/L	1.306	0.68%
Mg 279.077	23447457.5	531.22	mg/L	3.404	531.22	mg/L	3.404	0.64%
Mn 257.610	-2382.9	0.0097	mg/L	0.00013	0.0097	mg/L	0.00013	1.34%
Ni 231.604	14.8	0.0112	mg/L	0.00018	0.0112	mg/L	0.00018	1.62%
Sb 206.836	-37.3	0.0000	mg/L	0.00346	0.0000	mg/L	0.00346	>999.9%
Tl 190.801	-9.0	0.0129	mg/L	0.00039	0.0129	mg/L	0.00039	3.03%
V 292.402	-208.3	-0.0022	mg/L	0.00016	-0.0022	mg/L	0.00016	7.39%
Ti 334.940	8684.5	0.0120	mg/L	0.00015	0.0120	mg/L	0.00015	1.26%
Ca 227.546	361824.3	554.56	mg/L	8.900	554.56	mg/L	8.900	1.60%

Analysis Begun

Start Time: 2/11/2003 8:45:00 AM
Logged In Analyst: optima2
Spectrometer Model: Optima 3100 XL
Plasma On Time: 2/10/2003 2:41:51 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: D:\pe\optima2\Sample Information\KMG.sif
Results Data Set: A021101
Results Library: D:\pe\optima2\Results\Results.mdb

Sequence No.: 10
Sample ID: ICSAB0
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/2003 8:45:00 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-08A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	7631462.7	148.18	mg/L	0.283	148.18	mg/L	0.283	0.19%
Cr 267.716	71243.9	0.2072	mg/L	0.00046	0.2072	mg/L	0.00046	0.22%
Cu 324.752	50588.2	0.1119	mg/L	0.00011	0.1119	mg/L	0.00011	0.10%
Fe 273.955	6955704.2	138.72	mg/L	0.231	138.72	mg/L	0.231	0.17%
Mg 279.077	666192.4	15.109	mg/L	0.2297	15.109	mg/L	0.2297	1.52%
Mn 257.610	1074775.4	3.0678	mg/L	0.05940	3.0678	mg/L	0.05940	1.94%
Ni 231.604	7518.9	0.1193	mg/L	0.00113	0.1193	mg/L	0.00113	0.95%
Sb 206.836	5.0	0.0113	mg/L	0.00308	0.0113	mg/L	0.00308	27.26%
Tl 190.801	-42.9	0.0071	mg/L	0.01308	0.0071	mg/L	0.01308	184.64%
V 292.402	112757.6	0.3100	mg/L	0.00036	0.3100	mg/L	0.00036	0.12%
Ti 334.940	3920365.7	3.6350	mg/L	0.00514	3.6350	mg/L	0.00514	0.14%
Ca 227.546	8876.2	12.491	mg/L	0.0966	12.491	mg/L	0.0966	0.77%

Sequence No.: 65
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 57
Date Collected: 2/11/2003 11:31:20 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	1517559.1	29.467	mg/L	0.7210	29.467	mg/L	0.7210	2.45%
Cr 267.716	12737.7	0.0370	mg/L	0.00022	0.0370	mg/L	0.00022	0.59%
Cu 324.752	3817.3	0.0090	mg/L	0.00037	0.0090	mg/L	0.00037	4.16%
Fe 273.955	863761.2	17.227	mg/L	0.3554	17.227	mg/L	0.3554	2.06%
Mg 279.077	74311.9	1.6841	mg/L	0.03275	1.6841	mg/L	0.03275	1.94%
Mn 257.610	33154.0	0.0951	mg/L	0.00156	0.0951	mg/L	0.00156	1.64%
Ni 231.604	989.1	0.0155	mg/L	0.00073	0.0155	mg/L	0.00073	4.71%
Sb 206.836	-0.1	0.0016	mg/L	0.00181	0.0016	mg/L	0.00181	111.78%
Tl 190.801	-16.9	-0.0042	mg/L	0.00377	-0.0042	mg/L	0.00377	90.70%
V 292.402	18198.2	0.0499	mg/L	0.00040	0.0499	mg/L	0.00040	0.80%
Ti 334.940	982333.8	0.9108	mg/L	0.01934	0.9108	mg/L	0.01934	2.12%
Ca 227.546	572.1	0.7411	mg/L	0.09008	0.7411	mg/L	0.09008	12.15%

Sequence No.: 66
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/2003 11:33:42 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	28051819.6	544.68	mg/L	0.503	544.68	mg/L	0.503	0.09%
Cr 267.716	-758.7	0.0003	mg/L	0.00011	0.0003	mg/L	0.00011	43.42%
Cu 324.752	-10779.3	0.0041	mg/L	0.00033	0.0041	mg/L	0.00033	8.02%
Fe 273.955	9784957.6	195.15	mg/L	0.062	195.15	mg/L	0.062	0.03%
Mg 279.077	23824919.5	539.77	mg/L	0.152	539.77	mg/L	0.152	0.03%
Mn 257.610	-2213.2	0.0104	mg/L	0.00017	0.0104	mg/L	0.00017	1.61%
Ni 231.604	-34.8	0.0106	mg/L	0.00052	0.0106	mg/L	0.00052	4.88%
Sb 206.836	-69.6	-0.0095	mg/L	0.01866	-0.0095	mg/L	0.01866	195.61%
Tl 190.801	4.1	0.0184	mg/L	0.00604	0.0184	mg/L	0.00604	32.77%
V 292.402	-6.3	-0.0016	mg/L	0.00010	-0.0016	mg/L	0.00010	6.20%
Ti 334.940	8441.5	0.0117	mg/L	0.00014	0.0117	mg/L	0.00014	1.17%
Ca 227.546	358456.4	549.36	mg/L	8.246	549.36	mg/L	8.246	1.50%

Sequence No.: 67
Sample ID: ICSAB1
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/2003 11:36:20 AM
Sample Prep Volume:
Data Type: Original

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
K 766.490	3	Lin Thru 0	0.0	2241	0.00000	0.999957	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/11/03 11:33:11 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	112657.9	50.280	mg/L	0.4176	50.280	mg/L	0.4176	0.83%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 11:35:28 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	56823.0	25.360	mg/L	0.1204	25.360	mg/L	0.1204	0.47%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 11:37:45 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	1120.1	0.4999	mg/L	0.04495	0.4999	mg/L	0.04495	8.99%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 11:40:04 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	556.6	0.2484	mg/L	0.00096	0.2484	mg/L	0.00096	0.39%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 11:42:23 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	58528.4	26.122	mg/L	0.1216	26.122	mg/L	0.1216	0.47%

Sequence No.: 21
Sample ID: B0221-05A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 53
Date Collected: 2/11/03 12:10:01 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-05A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	3475.7	1.5512	mg/L	0.03416	1.5512	mg/L	0.03416	2.20%

Sequence No.: 22
Sample ID: B0221-06A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 54
Date Collected: 2/11/03 12:12:18 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-06A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	16774.4	7.4865	mg/L	0.00782	7.4865	mg/L	0.00782	0.10%

Sequence No.: 23
Sample ID: B0221-07A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 55
Date Collected: 2/11/03 12:14:35 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-07A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	6242.0	2.7858	mg/L	0.02404	2.7858	mg/L	0.02404	0.86%

Sequence No.: 24
Sample ID: B0221-08A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 56
Date Collected: 2/11/03 12:16:52 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-08A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	14786.5	6.5993	mg/L	0.06079	6.5993	mg/L	0.06079	0.92%

Sequence No.: 25
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 57
Date Collected: 2/11/03 12:19:11 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	2926.3	1.3060	mg/L	0.05437	1.3060	mg/L	0.05437	4.16%

Sequence No.: 26
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 12:21:30 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	-62.3	-0.0278	mg/L	0.03670	-0.0278	mg/L	0.03670	131.96%

Sequence No.: 27
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 12:23:49 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	60128.8	26.836	mg/L	0.0545	26.836	mg/L	0.0545	0.20%

Sequence No.: 28
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 12:26:10 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	55935.4	24.964	mg/L	0.0861	24.964	mg/L	0.0861	0.34%

Sequence No.: 29
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 12:28:27 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	582.3	0.2599	mg/L	0.06433	0.2599	mg/L	0.06433	24.75%

GZM

Sequence No.: 30
Sample ID: MB-5555,5555
Analyst:
Sample Wt:
Dilution:
~~Autosampler Location: 58~~
Date Collected: 2/11/03 12:30:46 PM
Sample Prep Volume:
Data Type: Original

Mean Data: MB-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	358.5	0.1600	mg/L	0.02014	0.1600	mg/L	0.02014	12.59%

Sequence No.: 31
Sample ID: LCS-5555,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 59
Date Collected: 2/11/03 12:33:05 PM
Sample Prep Volume:
Data Type: Original

MK 2/26/03

Mean Data: LCS-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	49837.6	22.243	mg/L	0.2298	22.243	mg/L	0.2298	1.03%

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Na 589.592	3	Lin Thru 0	0.0	6604	0.00000	0.999950	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/11/03 1:25:51 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	335207.9	50.758	mg/L	0.2840	50.758	mg/L	0.2840	0.56%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 1:28:09 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	166236.8	25.172	mg/L	0.0694	25.172	mg/L	0.0694	0.28%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 1:30:27 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1406.4	0.2130	mg/L	0.01704	0.2130	mg/L	0.01704	8.00%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 1:32:46 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	976.7	0.1479	mg/L	0.00285	0.1479	mg/L	0.00285	1.92%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 1:35:05 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	178793.2	27.073	mg/L	0.0061	27.073	mg/L	0.0061	0.02%

Sequence No.: 21
Sample ID: B0221-05A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 53
Date Collected: 2/11/03 2:02:44 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-05A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-655.1	-0.0992	mg/L	0.00358	-0.0992	mg/L	0.00358	3.61%

Sequence No.: 22
Sample ID: B0221-06A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 54
Date Collected: 2/11/03 2:05:01 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-06A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	774.0	0.1172	mg/L	0.01516	0.1172	mg/L	0.01516	12.94%

Sequence No.: 23
Sample ID: B0221-07A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 55
Date Collected: 2/11/03 2:07:18 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-07A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	651.2	0.0986	mg/L	0.01378	0.0986	mg/L	0.01378	13.98%

Sequence No.: 24
Sample ID: B0221-08A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 56
Date Collected: 2/11/03 2:09:35 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-08A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	634.1	0.0960	mg/L	0.00905	0.0960	mg/L	0.00905	9.43%

Sequence No.: 25
Sample ID: B0221-09A,5553
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 57
Date Collected: 2/11/03 2:11:53 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0221-09A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-987.0	-0.1494	mg/L	0.00761	-0.1494	mg/L	0.00761	5.09%

Sequence No.: 26
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/11/03 2:14:12 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-1146.8	-0.1737	mg/L	0.00189	-0.1737	mg/L	0.00189	1.09%

Sequence No.: 27
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/11/03 2:16:31 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	177722.6	26.911	mg/L	0.4699	26.911	mg/L	0.4699	1.75%

Sequence No.: 28
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/11/03 2:18:53 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	167431.4	25.353	mg/L	0.1471	25.353	mg/L	0.1471	0.58%

Sequence No.: 29
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/11/03 2:21:11 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-833.4	-0.1262	mg/L	0.00485	-0.1262	mg/L	0.00485	3.84%

EOM

Sequence No.: 30
Sample ID: MB-5555,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 58
Date Collected: 2/11/03 2:23:30 PM
Sample Prep Volume:
Data Type: Original

Mean Data: MB-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-1238.0	-0.1875	mg/L	0.00865	-0.1875	mg/L	0.00865	4.61%

Sequence No.: 31
Sample ID: LCS-5555,5555
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 59
Date Collected: 2/11/03 2:25:49 PM
Sample Prep Volume:
Data Type: Original

Mean Data: LCS-5555,5555

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	148563.9	22.496	mg/L	0.4157	22.496	mg/L	0.4157	1.85%

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

W0DSS101S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	14.3310		0.2776	B	26.76	52.5	N	P
Arsenic	75-125	28.1144		2.1333		26.76	97.1		P
Barium	75-125	437.3110		24.9693		535.29	77.0		P
Beryllium	75-125	10.1043		0.3154		13.35	73.3	N	P
Cadmium	75-125	12.6055		0.0442	B	13.35	94.1		P
Calcium									NR
Chromium	75-125	46.2145		6.0106		53.53	75.1		P
Cobalt	75-125	97.8534		1.7848	B	133.53	71.9	N	P
Copper	75-125	54.3173		4.9054	B	66.47	74.3	N	P
Iron									NR
Lead	75-125	39.6304		11.1129		26.76	106.6		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.7988		0.0379	B	0.87	87.5		CV
Nickel	75-125	104.8727		3.6215	B	133.53	75.8		P
Potassium									NR
Selenium	75-125	22.3594		0.5294	U	26.76	83.6		P
Silver	75-125	44.5462		0.1176	U	66.47	67.0	N	P
Sodium									NR
Thallium	75-125	25.2591		0.1765	U	26.76	94.4		P
Vanadium	75-125	108.9969		11.6291	B	133.53	72.9	N	P
Zinc	75-125	114.0243		19.8694		133.53	70.5	N	P
Cyanide									NR

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

W0DSS101A

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		468.40		4.72	B	455.0	101.9		P
Arsenic									NR
Barium									NR
Beryllium		213.64		5.36		227.0	91.8		P
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt		2099.76		30.34	B	2270.0	91.2		P
Copper		1139.17		83.39	B	1130.0	93.4		P
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver		1034.36		2.00	U	1130.0	91.5		P
Sodium									NR
Thallium									NR
Vanadium		2260.23		197.69	B	2270.0	90.9		P
Zinc		2389.05		337.78		2270.0	90.4		P
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

W0DSS101D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 85.0 % Solids for Duplicate: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		5717.0724		5976.5766		4.4		P
Antimony		0.2776	B	0.4790	B	53.2	OK *	P
Arsenic	0.8824	2.1333		2.2829		6.8		P
Barium	11.7647	24.9693		26.9108		7.5		P
Beryllium	0.2941	0.3154		0.3320		5.1		P
Cadmium		0.0442	B	0.0412	U	200.0	OK *	P
Calcium		433.7767	B	449.2277	B	3.5		P
Chromium	2.3529	6.0106		6.3833		6.0		P
Cobalt		1.7848	B	1.8211	B	2.0		P
Copper		4.9054	B	3.5203	B	32.9	OK *	P
Iron		5423.2244		5680.1504		4.6		P
Lead	2.3529	11.1129		10.5291		5.4		P
Magnesium		534.4964	B	554.0917	B	3.6		P
Manganese		83.2678		86.2391		3.5		P
Mercury		0.0379	B	0.0437	B	14.2		CV
Nickel		3.6215	B	3.8498	B	6.1		P
Potassium		339.2076	B	303.3177	B	11.2		P
Selenium		0.5294	U	0.5294	U			P
Silver		0.1176	U	0.1176	U			P
Sodium		14.7794	B	8.4636	B	54.3	OK *	P
Thallium		0.1765	U	0.1765	U			P
Vanadium		11.6291	B	12.2561		5.3		P
Zinc	14.1176	19.8694		16.8481		16.5		P
Cyanide								NR

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0221__

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		800	17.0	P
Antimony	206.83		60 30	3.0	P
Arsenic	188.98		15	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		20000	240.0	P
Chromium	267.72		40	0.6	P
Cobalt	228.62		200	0.9	P
Copper	324.75		100 50	4.0	P
Iron	273.96		400	26.0	P
Lead	220.35		40	4.0	P
Magnesium	279.08		20000	8.0	P
Manganese	257.61		60	0.8	P
Mercury			0.6		NR
Nickel	231.60		160	0.8	P
Potassium			20000		NR
Selenium	196.03		140	9.0	P
Silver	328.07		40	2.0	P
Sodium			20000 1000		NR
Thallium	190.80		40	3.0	P
Vanadium	292.40		200	0.7	P
Zinc	206.20		240	7.0	P
Cyanide			10		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		800	17.0	P
Antimony	206.83		60	3.0	P
Arsenic	188.98		15	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			20000		NR
Chromium	267.72		40	0.6	P
Cobalt	228.62		200	0.9	P
Copper	324.75		100	4.0	P
Iron	273.96		400	26.0	P
Lead	220.35		40	4.0	P
Magnesium	279.08		20000	8.0	P
Manganese	257.61		60	0.8	P
Mercury			0.6		NR
Nickel	231.60		160	0.8	P
Potassium	766.49		20000	78.0	P
Selenium			140		NR
Silver			40		NR
Sodium	589.59		20000	83.0	P
Thallium			40		NR
Vanadium			200		NR
Zinc			240		NR
Cyanide			10		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0221___

ICP ID Number: _____ Date: 02/01/03___

Flame AA ID Number: COMM_FIMS___

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			800		NR
Antimony			60		NR
Arsenic			15		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			20000		NR
Chromium			40		NR
Cobalt			200		NR
Copper			100		NR
Iron			400		NR
Lead			40		NR
Magnesium			20000		NR
Manganese			60		NR
Mercury	253.70		0.6	0.1	CV
Nickel			160		NR
Potassium			20000		NR
Selenium			140		NR
Silver			40		NR
Sodium			20000		NR
Thallium			40		NR
Vanadium			200		NR
Zinc			240		NR
Cyanide			10		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/10/03		50
PBW	02/10/03		50
RB-020603	02/10/03		50

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13
PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/10/03	0.50	50
PBS	02/10/03	1.00	50
SV1011315	02/10/03	1.21	50
SV1021517	02/10/03	1.14	50
SV1031113	02/10/03	1.13	50
SV1041012	02/10/03	1.20	50
W0DSS101	02/10/03	1.00	50
W0DSS101D	02/10/03	1.00	50
W0DSS101S	02/10/03	1.00	50
W0DSS102	02/10/03	1.11	50
W0DSS103	02/10/03	1.10	50
W0DSS104	02/10/03	1.11	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/10/03		100
PBW	02/10/03		100
RB-020603	02/10/03		130

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/10/03	0.60	100
PBS	02/10/03	0.60	100
SV1011315	02/10/03	0.68	100
SV1021517	02/10/03	0.72	100
SV1031113	02/10/03	0.67	100
SV1041012	02/10/03	0.63	100
W0DSS101	02/10/03	0.68	100
W0DSS101D	02/10/03	0.68	100
W0DSS101S	02/10/03	0.68	100
W0DSS102	02/10/03	0.60	100
W0DSS103	02/10/03	0.75	100
W0DSS104	02/10/03	0.64	100

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/10/03 End Date: 02/10/03

EPA Sample No.	D/F	Time	%R	Analytes																						
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1559		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1603		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1607		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1611		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1615																								
ZZZZZZ	1.00	1619																								
ZZZZZZ	1.00	1621																								
ZZZZZZ	1.00	1625																								
ZZZZZZ	1.00	1630																								
ICV	1.00	1635		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1639		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1643		X						X				X		X										
ICSAB	1.00	1646		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1648																								
ZZZZZZ	1.00	1652																								
ZZZZZZ	1.00	1657																								
ZZZZZZ	1.00	1701																								
ZZZZZZ	1.00	1705																								
ZZZZZZ	1.00	1709																								
ZZZZZZ	1.00	1713																								
CCV	1.00	1718		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1722		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1726																								
ZZZZZZ	1.00	1730																								
ZZZZZZ	1.00	1734																								
ZZZZZZ	1.00	1738																								
ZZZZZZ	1.00	1742																								
ZZZZZZ	1.00	1746																								
ZZZZZZ	1.00	1751																								
ZZZZZZ	1.00	1753																								
CCV	1.00	1756		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1800		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/10/03 End Date: 02/10/03

EPA Sample No.	D/F	Time	%R	Analytes
ZZZZZZ	1.00	1804		
ZZZZZZ	1.00	1808		
ZZZZZZ	1.00	1812		
ZZZZZZ	1.00	1816		
ZZZZZZ	1.00	1821		
ZZZZZZ	1.00	1825		
ZZZZZZ	1.00	1829		
ZZZZZZ	1.00	1833		
CCV	1.00	1837		X X X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA 2A Method: P

Start Date: 02/10/03 End Date: 02/10/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN				
SV1021517	1.00	2012		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
W0DSS103	1.00	2016		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1031113	1.00	2020		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
W0DSS104	1.00	2024		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
SV1041012	1.00	2028		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICSA	1.00	2033		X						X				X			X													
ICSAB	1.00	2035		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCV	1.00	2038		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCB	1.00	2042		X		X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALB	SBS	AAE	BAR	BCR	CCO	CDU	CAE	FBG	MGN	MNI	HGI	NK	SE	AG	NAL	TL	VN	ZN	CN
S0	1.00	0817			X																		
S1	1.00	0821			X																		
S2	1.00	0824			X																		
S3	1.00	0828			X																		
ZZZZZZ	1.00	0831																					
ZZZZZZ	1.00	0834																					
ICV	1.00	0837			X																		
ICB	1.00	0841			X																		
ICSA	1.00	0844																					
ICSAB	1.00	0846			X																		
ZZZZZZ	1.00	0849																					
ZZZZZZ	1.00	0852																					
ZZZZZZ	1.00	0858																					
ZZZZZZ	1.00	0901																					
ZZZZZZ	1.00	0904																					
ZZZZZZ	1.00	0906																					
ZZZZZZ	1.00	0909																					
CCV	1.00	0912			X																		
CCB	1.00	0916			X																		
ZZZZZZ	1.00	0919																					
ZZZZZZ	1.00	0922																					
ZZZZZZ	1.00	0924																					
ZZZZZZ	1.00	0927																					
ZZZZZZ	1.00	0929																					
ZZZZZZ	1.00	0932																					
ZZZZZZ	1.00	0935																					
ZZZZZZ	1.00	0937																					
CCV	1.00	0940			X																		
CCB	1.00	0944			X																		
ZZZZZZ	1.00	0947																					
ZZZZZZ	1.00	0950																					
ZZZZZZ	1.00	0952																					

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes
ZZZZZZ	1.00	0955		
ZZZZZZ	1.00	0957		
ZZZZZZ	1.00	1000		
ZZZZZZ	1.00	1002		
ZZZZZZ	1.00	1006		
CCV	1.00	1010		X
CCB	1.00	1014		X
ZZZZZZ	1.00	1017		
PBS	1.00	1020		X
LCSS	1.00	1024		X
ZZZZZZ	1.00	1028		
ZZZZZZ	1.00	1030		
ZZZZZZ	1.00	1033		
ICSA	1.00	1035		
ICSAB	1.00	1038		X
CCV	1.00	1041		X
CCB	1.00	1045		X
ZZZZZZ	1.00	1048		
ZZZZZZ	1.00	1051		
ZZZZZZ	1.00	1053		
ZZZZZZ	1.00	1056		
W0DSS101	1.00	1058		X
W0DSS101D	1.00	1101		X
W0DSS101S	1.00	1103		X
W0DSS101A	1.00	1106		X
CCV	1.00	1109		X
CCB	1.00	1114		X
SV1011315	1.00	1117		X
W0DSS102	1.00	1120		X
SV1021517	1.00	1122		X
W0DSS103	1.00	1125		X
SV1031113	1.00	1127		X

Analytes: ALBS, ASBA, BBE, CCD, CCAR, CCOU, CFE, PBG, MGN, MHGI, NK, SEG, ANAL, TL, VN, ZCN

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA 2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes
W0DSS104	1.00	1130		X
SV1041012	1.00	1132		X
ICSA	1.00	1135		
ICSAB	1.00	1137		X
CCV	1.00	1141		X
CCB	1.00	1145		X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	% R	Analytes: AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	AL	TL	V	ZN	CN
S0	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1220		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1224		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1228		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1232																									
ICV	1.00	1235		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1239		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1243		X						X				X		X											
ICSAB	1.00	1246		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1248		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1253		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
RB-020603	1.00	1257		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1301																									
ZZZZZZ	1.00	1305																									
ZZZZZZ	1.00	1309																									
ICSA	1.00	1313		X						X				X		X											
ICSAB	1.00	1316		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1318		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1322		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes
				ALBS SBS ABA BED CDA CAR CRO CUE FEB PBG MGN MNG HGI KSE SEG AGA NAL TAL VZN CCN
S0	1.00	1125		X
S1	1.00	1127		X
S2	1.00	1129		X
S3	1.00	1132		X
ZZZZZZ	1.00	1134		
ICV	1.00	1136		X
ICB	1.00	1138		X
ICSA	1.00	1141		
ICSAB	1.00	1143		X
PBW	1.00	1145		X
LCSW	1.00	1148		X
RB-020603	1.00	1150		X
PBS	1.00	1152		X
LCSS	1.00	1155		X
W0DSS101	1.00	1157		X
W0DSS101D	1.00	1159		X
CCV	1.00	1202		X
CCB	1.00	1204		X
SV1011315	1.00	1206		X
W0DSS102	1.00	1208		X
SV1021517	1.00	1211		X
W0DSS103	1.00	1213		X
SV1031113	1.00	1215		X
W0DSS104	1.00	1218		X
SV1041012	1.00	1220		X
ICSA	1.00	1222		
ICSAB	1.00	1224		X
CCV	1.00	1227		X
CCB	1.00	1229		X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALL	SB	SAS	BAE	BED	CDA	CAR	CRO	CUE	FEB	PBG	MGN	MNG	IGI	NI	K	SE	AG	NAL	TL	V	ZN	CN
S0	1.00	1317																				X				
S1	1.00	1320																				X				
S2	1.00	1322																				X				
S3	1.00	1324																				X				
ZZZZZZ	1.00	1326																								
ICV	1.00	1329																				X				
ICB	1.00	1331																				X				
ICSA	1.00	1333																								
ICSAB	1.00	1336																				X				
PBW	1.00	1338																				X				
LCSW	1.00	1340																				X				
RB-020603	1.00	1343																				X				
PBS	1.00	1345																				X				
LCSS	1.00	1347																				X				
W0DSS101	1.00	1350																				X				
W0DSS101D	1.00	1352																				X				
CCV	1.00	1354																				X				
CCB	1.00	1357																				X				
SV1011315	1.00	1359																				X				
W0DSS102	1.00	1401																				X				
SV1021517	1.00	1403																				X				
W0DSS103	1.00	1406																				X				
SV1031113	1.00	1408																				X				
W0DSS104	1.00	1410																				X				
SV1041012	1.00	1413																				X				
ICSA	1.00	1415																								
ICSAB	1.00	1417																				X				
CCV	1.00	1420																				X				
CCB	1.00	1422																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALSB	ASAS	ABAE	BECD	CCAR	CCOU	CFEB	PBMG	MMNG	HGI	NIK	SE	AGAA	NTL	V	ZN	CN
S0	1.00	1104											X							
S0.2	1.00	1106											X							
S1	1.00	1107											X							
S2	1.00	1108											X							
S5	1.00	1110											X							
S10	1.00	1111											X							
ICV	1.00	1112											X							
ICB	1.00	1114											X							
PBW	1.00	1115											X							
LCSW	1.00	1116											X							
ZZZZZZ	1.00	1118																		
ZZZZZZ	1.00	1119																		
ZZZZZZ	1.00	1120																		
ZZZZZZ	1.00	1122																		
ZZZZZZ	1.00	1123																		
ZZZZZZ	1.00	1124																		
CCV	1.00	1126											X							
CCB	1.00	1127											X							
ZZZZZZ	1.00	1128																		
ZZZZZZ	1.00	1130																		
ZZZZZZ	1.00	1131																		
ZZZZZZ	1.00	1132																		
ZZZZZZ	1.00	1134																		
ZZZZZZ	1.00	1135																		
ZZZZZZ	1.00	1136																		
ZZZZZZ	1.00	1137																		
CCV	1.00	1139											X							
CCB	1.00	1140											X							
ZZZZZZ	1.00	1142																		
ZZZZZZ	1.00	1143																		
RB-020603	1.00	1144											X							
PBS	1.00	1146											X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/11/03 End Date: 02/11/03

EPA Sample No.	D/F	Time	%R	Analytes: ALL BS AS BA BE CD CA CR CO CU EE PB MG MN HG NI KE SE AG NA TL VN ZN CN
LCSS	1.00	1147		X
W0DSS101	1.00	1148		X
W0DSS101D	1.00	1149		X
W0DSS101S	1.00	1151		X
CCV	1.00	1152		X
CCB	1.00	1154		X
SV1011315	1.00	1155		X
W0DSS102	1.00	1156		X
SV1021517	1.00	1158		X
W0DSS103	1.00	1159		X
SV1031113	1.00	1200		X
W0DSS104	1.00	1202		X
SV1041012	1.00	1203		X
ZZZZZZ	1.00	1204		
CCV	1.00	1205		X
CCB	1.00	1207		X

Sb 206.836	-31.3	0.0049 mg/L	0.00191	0.0049 mg/L	0.00191	39.11%
Se 196.026	-128.7	-0.0169 mg/L	0.00311	-0.0169 mg/L	0.00311	18.40%
Tl 190.801	-58.7	-0.0018 mg/L	0.00119	-0.0018 mg/L	0.00119	64.64%
V 292.402	136211.1	0.3390 mg/L	0.00232	0.3390 mg/L	0.00232	0.68%
Zn 206.200	30852.5	0.3062 mg/L	0.00089	0.3062 mg/L	0.00089	0.29%
Na 330.237	-43.2	1.3260 mg/L	0.00861	1.3260 mg/L	0.00861	0.65%
Cd 226.502	2627.3	0.0003 mg/L	0.00002	0.0003 mg/L	0.00002	6.83%
Ti 334.940	5540762.7	3.9905 mg/L	0.01343	3.9905 mg/L	0.01343	0.34%
Ca 227.546	5094.9	6.1825 mg/L	0.00268	6.1825 mg/L	0.00268	0.04%

Sequence No.: 67
Sample ID: B0221-07A,5553
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 55
Date Collected: 2/10/2003 8:19:29 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:27 AM,

Mean Data: B0221-07A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3301.5	-0.0024	mg/L	0.00043	-0.0024	mg/L	0.00043	18.11%
Al 308.215	3422109.5	64.654	mg/L	0.5008	64.654	mg/L	0.5008	0.77%
As 188.979	50.0	0.0233	mg/L	0.00006	0.0233	mg/L	0.00006	0.27%
Ba 233.527	23952.9	0.2509	mg/L	0.00050	0.2509	mg/L	0.00050	0.20%
Be 313.107	23680.6	0.0040	mg/L	0.00001	0.0040	mg/L	0.00001	0.23%
Co 228.616	1733.0	0.0413	mg/L	0.00006	0.0413	mg/L	0.00006	0.14%
Cr 267.716	21881.1	0.0623	mg/L	0.00005	0.0623	mg/L	0.00005	0.08%
Cu 324.752	10462.0	0.0245	mg/L	0.00025	0.0245	mg/L	0.00025	1.01%
Fe 273.955	2276705.5	42.462	mg/L	0.3416	42.462	mg/L	0.3416	0.80%
Mg 279.077	224066.9	4.7548	mg/L	0.00226	4.7548	mg/L	0.00226	0.05%
Mn 257.610	428006.1	0.9058	mg/L	0.00221	0.9058	mg/L	0.00221	0.24%
Ni 231.604	3618.8	0.0414	mg/L	0.00009	0.0414	mg/L	0.00009	0.23%
Pb 220.353	509.7	0.0283	mg/L	0.00027	0.0283	mg/L	0.00027	0.95%
Sb 206.836	-4.8	0.0020	mg/L	0.00166	0.0020	mg/L	0.00166	81.17%
Se 196.026	-23.1	-0.0015	mg/L	0.00059	-0.0015	mg/L	0.00059	38.78%
Tl 190.801	-12.2	0.0014	mg/L	0.00001	0.0014	mg/L	0.00001	0.38%
V 292.402	35908.5	0.0892	mg/L	0.00014	0.0892	mg/L	0.00014	0.16%
Zn 206.200	7067.0	0.0696	mg/L	0.00026	0.0696	mg/L	0.00026	0.37%
Na 330.237	1041.7	0.9027	mg/L	0.04890	0.9027	mg/L	0.04890	5.42%
Cd 226.502	398.6	-0.0004	mg/L	0.00005	-0.0004	mg/L	0.00005	11.01%
Ti 334.940	1990251.1	1.4334	mg/L	0.00709	1.4334	mg/L	0.00709	0.49%
Ca 227.546	613.4	0.5945	mg/L	0.00220	0.5945	mg/L	0.00220	0.37%

Sequence No.: 68
Sample ID: B0221-08A,5553
Analyst:
Sample Wt:
Dilution: Sample: WOD-SS-104

Autosampler Location: 56
Date Collected: 2/10/2003 8:23:33 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/11/2003 9:23:29 AM,

65% solid
1.11 g
50 mL

Mean Data: B0221-08A,5553

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-10570.2	-0.0068	mg/L	0.00063	-0.0068	mg/L	0.00063	9.24%
Al 308.215	7984039.1	150.84	mg/L	3.065	150.84	mg/L	3.065	2.03%
As 188.979	320.2	0.1434	mg/L	0.00019	0.1434	mg/L	0.00019	0.13%
Ba 233.527	146397.7	1.5386	mg/L	0.01335	1.5386	mg/L	0.01335	0.87%
Be 313.107	57893.2	0.0096	mg/L	0.00009	0.0096	mg/L	0.00009	0.92%
Co 228.616	2053.2	0.0457	mg/L	0.00024	0.0457	mg/L	0.00024	0.53%
Cr 267.716	73959.5	0.2104	mg/L	0.00164	0.2104	mg/L	0.00164	0.78%
Cu 324.752	50522.2	0.1144	mg/L	0.00041	0.1144	mg/L	0.00041	0.36%
Fe 273.955	7576853.7	141.31	mg/L	2.497	141.31	mg/L	2.497	1.77%
Mg 279.077	739504.2	15.693	mg/L	0.1536	15.693	mg/L	0.1536	0.98%
Mn 257.610	1439534.4	3.0458	mg/L	0.02400	3.0458	mg/L	0.02400	0.79%
Ni 231.604	9585.0	0.1099	mg/L	0.00021	0.1099	mg/L	0.00021	0.19%
Pb 220.353	10344.7	0.4650	mg/L	0.00012	0.4650	mg/L	0.00012	0.03%
Sb 206.836	-7.4	0.0077	mg/L	0.00094	0.0077	mg/L	0.00094	12.14%
Se 196.026	-92.9	-0.0127	mg/L	0.00061	-0.0127	mg/L	0.00061	4.81%
Tl 190.801	-56.4	-0.0032	mg/L	0.00093	-0.0032	mg/L	0.00093	29.05%

$1.5386\ mg/L \times \frac{50\ mL}{1.11\ g} = \frac{69.306}{0.85} = 81.5\ mg/kg$ ✓

001125

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**JUNE 5, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC/SVOC/PCB CTO 848, NASA WALLOPS ISLAND SDG B0221**		
SAMPLES:	2/Aqueous		
	RB020603	TB020603*	
	8/Soil		
	WOD-SS-101	WOD-SS-102	WOD-SS-103
	WOD-SS-104	WOD-SU-101-1315	WOD-SU-102-1517
	WOD-SU-103-1113	WOD-SU-104-1012	

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0221 consists of one (1) rinsate blank, one (1) trip blank, and eight (8) soil samples. The soil samples and rinse blank were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on February 6, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- The percent recovery of internal standard 1,4-dichlorobenzene-d4 was <10% in sample WOD-SU-104-1012. Sample WOD-SU-104-1012 was re-analyzed with similar results. All non-detected results for 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene were rejected (UR) in sample WOD-SU-104-1012.

Minor

- Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated (J).

- All

- The following compound was detected in the solid method blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	2.0 ug/kg	20 ug/kg
Acetone	5.0 ug/kg	50 ug/kg
2-Hexanone	3.0 ug/kg	15 ug/kg

  Sample aliquot, and dilution factors were taken into consideration when applying the blank action levels. Positive results for methylene chloride and acetone below the blank action level were qualified as non-detected, (B).

- The percent recoveries of all internal standards were below the -50% quality control criteria in the volatile fraction of samples WOD-SS-103 and two out of three in WOD-SU-104-1012. The percent recovery of internal standard 1,4-dichlorobenzene-d4 was <10% in sample WOD-SU-104-1012. Sample WOD-SU-104-1012 was re-analyzed with similar results. The original analysis of sample WOD-SU-104-1012 was used for validation. All non-detected results except for acetone, methylene chloride, 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene were qualified as estimated (UJ) in sample WOD-SU-104-1012. Sample WOD-SS-103 was not successfully re-analyzed due to sample matrix causing the purge needle to clog. All positive and non-detected results in the volatiles fraction of sample WOD-SS-103 were qualified as estimated (J, UJ).

- The percent recovery of internal standard 1,4-dichlorobenzene-d4 were below the -50% quality control criteria in sample WOD-SS-104. All non-detected results for 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene were qualified as estimated (UJ) in sample WOD-SS-104.

- The aqueous semivolatile continuing calibration performed on February 19 at 14:31 exceeded the 25% (and was >50%) difference quality control criteria for hexachlorocyclopentadiene. The result for hexachlorocyclopentadiene in sample RB020603 was qualified as estimated (UJ).

- The aqueous semivolatile continuing calibration performed on March 3 at 00:20 exceeded the 25% (and was >50%) difference quality control criteria for hexachlorocyclopentadiene. The non-detected results for hexachlorocyclopentadiene were qualified as estimated (UJ) in samples WOD-SS-101, WOD-SS-103, and WOD-SS-104.

- The aqueous semivolatile continuing calibration performed on March 4 at 14:10 exceeded the 25% (and was >50%) difference quality control criteria for hexachlorocyclopentadiene. The non-detected results for hexachlorocyclopentadiene were qualified as estimated (UJ) in samples WOD-SU-101-1315, WOD-SU-102-1517, and WOD-SU-104-1012.

- The semivolatile internal standard perylene-d12 was below the -50% recovery quality control criteria in sample WOD-SS-104. The non-detected results for di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene in sample WOD-SS-104 were qualified as estimated (UJ).

- The semivolatile surrogates 2-fluorobiphenyl, terphenyl-d14, phenol-d5, and 1,2-dichlorobenzene-d4 were below the percent recovery quality control criteria in samples WOD-SU-103-1113, WOD-SS-101, and WOD-SS-103. The samples were re-extracted outside of holding time and re-analyzed with compliant results. The original analyses of the aforementioned samples were used for validation due to holding time non-compliance. All

results in the base/neutral fraction of the aforementioned samples were qualified as estimated (UJ).

Notes

The volatile blank spike (V1SLCS) was below the laboratory's percent recovery quality control criteria for MTBE. No qualifications were made on this basis.

The percent recovery of volatile surrogate bromofluorobenzene was below the laboratory's quality control criteria in the re-analysis of sample WOD-SU-104-1012. No qualifications were made on this basis because the initial analysis was used for validation.

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The aqueous semivolatile initial calibration performed on February 14 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for 2,4-dinitrophenol. No qualifications were made on this basis because the associated results were non-detected.

The aqueous semivolatile continuing calibration performed on February 19 at 14:31 exceeded the 25% (but was <50%) difference quality control criteria for 2,4-dinitrophenol and 4-nitrophenol. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile initial calibration performed on February 26 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for hexachlorocyclopentadiene and 2,4-dinitrophenol. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile continuing calibration performed on February 28 at 16:29 exceeded the 25% (but was <50%) difference quality control criteria for hexachlorocyclopentadiene, 2,4-dinitrophenol, carbazole, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, benzo(g,h,i)perylene, and 4-nitrophenol. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile continuing calibration performed on March 2 at 13:23 exceeded the 25% (but was <50%) difference quality control criteria for hexachlorocyclopentadiene, carbazole, and 4-nitroaniline. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile continuing calibration performed on March 3 at 00:20 exceeded the 25% (but was <50%) difference quality control criteria for 4-nitrophenol, 4-nitroaniline, and carbazole. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile continuing calibration performed on March 4 at 14:10 exceeded the 25% (but was <50%) difference quality control criteria for indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene. No qualifications were made on this basis because the associated results were non-detected.

The soil semivolatile initial calibration performed on March 8 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for hexachlorocyclopentadiene. No qualifications were made on this basis because the associated results were non-detected.

The semivolatile blank spike (S2FLCS) exceeded the laboratory's percent recovery quality control criteria for carbazole and 4-nitroaniline. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile blank spike (S2PLCS) was below the laboratory's percent recovery quality control criteria for di-n-octylphthalate. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances, method blank contamination, internal standard non-compliances, and surrogate recovery non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0221 MEDIA: WATER DATA FRACTION:

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1		
BROMOMETHANE	1	U	
CARBON DISULFIDE	2		
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	1	J	P
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-020603
samp_date	2/6/2003
lab_id	B0221-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	2		
BROMOMETHANE	1	U	
CARBON DISULFIDE	2		
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1		

PROJ_NO: 4740

SDG: B0221 MEDIA: WATER DATA FRACTION:

nsample	TB-020603
samp_date	2/6/2003
lab_id	B0221-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	1	J	P
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-101	nsample	WOD-SS-101	nsample	WOD-SS-102
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-02C	lab_id	B0221-02C	lab_id	B0221-04C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	53	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	2	J	P
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	8	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	13	U	
1,1,2,2-TETRACHLOROETHANE	13	U	
1,1,2-TRICHLOROETHANE	13	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	13	U	
1,1-DICHLOROETHANE	13	U	
1,1-DICHLOROETHENE	13	U	
1,2,4-TRICHLOROBENZENE	13	U	
1,2,4-TRIMETHYLBENZENE	13	U	
1,2-DIBROMO-3-CHLOROPROPANE	13	U	
1,2-DIBROMOETHANE	13	U	
1,2-DICHLOROBENZENE	13	U	
1,2-DICHLOROETHANE	13	U	
1,2-DICHLOROPROPANE	13	U	
1,3,5-TRIMETHYLBENZENE	13	U	
1,3-DICHLOROBENZENE	13	U	
1,4-DICHLOROBENZENE	13	U	
2-BUTANONE	13	U	
2-HEXANONE	13	U	
4-METHYL-2-PENTANONE	13	U	
ACETONE	21	B	A
BENZENE	13	U	
BROMODICHLOROMETHANE	13	U	
BROMOFORM	13	U	
BROMOMETHANE	13	U	
CARBON DISULFIDE	13	U	
CARBON TETRACHLORIDE	13	U	
CHLOROBENZENE	13	U	
CHLORODIBROMOMETHANE	13	U	
CHLOROETHANE	13	U	
CHLOROFORM	13	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-102	nsample	WOD-SS-103	nsample	WOD-SS-103
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-04C	lab_id	B0221-06C	lab_id	B0221-06C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	87	Pct_Solids	87
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	13	U	
CIS-1,2-DICHLOROETHENE	13	U	
CIS-1,3-DICHLOROPROPENE	13	U	
CYCLOHEXANE	13	U	
DICHLORODIFLUOROMETHANE	13	U	
ETHYLBENZENE	13	U	
ISOPROPYLBENZENE	13	U	
M+P-XYLENES	13	U	
METHYL ACETATE	3	J	P
METHYL CYCLOHEXANE	13	U	
METHYL TERT-BUTYL ETHER	13	U	
METHYLENE CHLORIDE	5	B	A
O-XYLENE	13	U	
STYRENE	13	U	
TETRACHLOROETHENE	13	U	
TOLUENE	13	U	
TOTAL XYLENES	13	U	
TRANS-1,2-DICHLOROETHENE	13	U	
TRANS-1,3-DICHLOROPROPENE	13	U	
TRICHLOROETHENE	13	U	
TRICHLOROFLUOROMETHANE	13	U	
VINYL CHLORIDE	13	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	UJ	N
1,1,2,2-TETRACHLOROETHANE	11	UJ	N
1,1,2-TRICHLOROETHANE	11	UJ	N
1,1,2-TRICHLOROTRIFLUOROETHANE	11	UJ	N
1,1-DICHLOROETHANE	11	UJ	N
1,1-DICHLOROETHENE	11	UJ	N
1,2,4-TRICHLOROBENZENE	11	UJ	N
1,2,4-TRIMETHYLBENZENE	1	J	NP
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	N
1,2-DIBROMOETHANE	11	UJ	N
1,2-DICHLOROBENZENE	11	UJ	N
1,2-DICHLOROETHANE	11	UJ	N
1,2-DICHLOROPROPANE	11	UJ	N
1,3,5-TRIMETHYLBENZENE	2	J	NP
1,3-DICHLOROBENZENE	11	UJ	N
1,4-DICHLOROBENZENE	11	UJ	N
2-BUTANONE	11	UJ	N
2-HEXANONE	11	UJ	N
4-METHYL-2-PENTANONE	11	UJ	N
ACETONE	44	B	A
BENZENE	11	UJ	N
BROMODICHLOROMETHANE	11	UJ	N
BROMOFORM	11	UJ	N
BROMOMETHANE	11	UJ	N
CARBON DISULFIDE	11	UJ	N
CARBON TETRACHLORIDE	11	UJ	N
CHLOROBENZENE	11	UJ	N
CHLORODIBROMOMETHANE	11	UJ	N
CHLOROETHANE	11	UJ	N
CHLOROFORM	11	UJ	N

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	UJ	N
CIS-1,2-DICHLOROETHENE	11	UJ	N
CIS-1,3-DICHLOROPROPENE	11	UJ	N
CYCLOHEXANE	11	UJ	N
DICHLORODIFLUOROMETHANE	11	UJ	N
ETHYLBENZENE	11	UJ	N
ISOPROPYLBENZENE	11	UJ	N
M+P-XYLENES	11	UJ	N
METHYL ACETATE	6	J	NP
METHYL CYCLOHEXANE	11	UJ	N
METHYL TERT-BUTYL ETHER	11	UJ	N
METHYLENE CHLORIDE	4	B	A
O-XYLENE	11	UJ	N
STYRENE	11	UJ	N
TETRACHLOROETHENE	11	UJ	N
TOLUENE	11	UJ	N
TOTAL XYLENES	11	UJ	N
TRANS-1,2-DICHLOROETHENE	11	UJ	N
TRANS-1,3-DICHLOROPROPENE	11	UJ	N
TRICHLOROETHENE	11	UJ	N
TRICHLOROFLUOROMETHANE	11	UJ	N
VINYL CHLORIDE	11	UJ	N

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-104	nsample	WOD-SS-104	nsample	WOD-SU-101-1315
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-08C	lab_id	B0221-08C	lab_id	B0221-03B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	UJ	N
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	UJ	N
1,3-DICHLOROBENZENE	10	UJ	N
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	30	B	A
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	11		
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	A
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	15	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

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SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-101-1315	nsample	WOD-SU-102-1517	nsample	WOD-SU-102-1517
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-03B	lab_id	B0221-05B	lab_id	B0221-05B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	96	Pct_Solids	96
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	4	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	42		
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	93		
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	15	B	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	13		
CHLOROFORM	11	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	10	J	P
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	8	B	A
O-XYLENE	9	J	P
STYRENE	11	U	
TETRACHLOROETHENE	3	J	P
TOLUENE	11	U	
TOTAL XYLENES	20		
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

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SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-103-1113	nsample	WOD-SU-103-1113	nsample	WOD-SU-104-1012
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-07B	lab_id	B0221-07B	lab_id	B0221-09B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	95
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	12	B	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	3	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	UJ	N
1,1,2,2-TETRACHLOROETHANE	11	UR	N
1,1,2-TRICHLOROETHANE	11	UJ	N
1,1,2-TRICHLOROTRIFLUOROETHANE	11	UJ	N
1,1-DICHLOROETHANE	11	UJ	N
1,1-DICHLOROETHENE	11	UJ	N
1,2,4-TRICHLOROBENZENE	11	UR	N
1,2,4-TRIMETHYLBENZENE	11	UR	N
1,2-DIBROMO-3-CHLOROPROPANE	11	UR	N
1,2-DIBROMOETHANE	11	UJ	N
1,2-DICHLOROBENZENE	11	UR	N
1,2-DICHLOROETHANE	11	UJ	N
1,2-DICHLOROPROPANE	11	UJ	N
1,3,5-TRIMETHYLBENZENE	11	UR	N
1,3-DICHLOROBENZENE	11	UR	N
1,4-DICHLOROBENZENE	11	UR	N
2-BUTANONE	11	UJ	N
2-HEXANONE	11	UJ	N
4-METHYL-2-PENTANONE	11	UJ	N
ACETONE	18	B	A
BENZENE	11	UJ	N
BROMODICHLOROMETHANE	11	UJ	N
BROMOFORM	11	UJ	N
BROMOMETHANE	11	UJ	N
CARBON DISULFIDE	11	UJ	N
CARBON TETRACHLORIDE	11	UJ	N
CHLOROBENZENE	11	UJ	N
CHLORODIBROMOMETHANE	11	UJ	N
CHLOROETHANE	11	UJ	N
CHLOROFORM	11	UJ	N

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SDG: B0221 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-104-1012
samp_date	2/6/2003
lab_id	B0221-09B
qc_type	NM
units	UG/KG
Pct_Solids	95
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	UJ	N
CIS-1,2-DICHLOROETHENE	11	UJ	N
CIS-1,3-DICHLOROPROPENE	11	UJ	N
CYCLOHEXANE	11	UJ	N
DICHLORODIFLUOROMETHANE	11	UJ	N
ETHYLBENZENE	11	UJ	N
ISOPROPYLBENZENE	11	UJ	N
M+P-XYLENES	11	UJ	N
METHYL ACETATE	11	UJ	N
METHYL CYCLOHEXANE	11	UJ	N
METHYL TERT-BUTYL ETHER	11	UJ	N
METHYLENE CHLORIDE	5	B	A
O-XYLENE	11	UJ	N
STYRENE	11	UJ	N
TETRACHLOROETHENE	11	UJ	N
TOLUENE	11	UJ	N
TOTAL XYLENES	11	UJ	N
TRANS-1,2-DICHLOROETHENE	11	UJ	N
TRANS-1,3-DICHLOROPROPENE	11	UJ	N
TRICHLOROETHENE	11	UJ	N
TRICHLOROFLUOROMETHANE	11	UJ	N
VINYL CHLORIDE	11	UJ	N

PROJ_NO: 4740

SDG: B0221 MEDIA: WATER DATA FRACTION:

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	10	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	10	U	
2,4-DICHLOROPHENOL	10	U	
2,4-DIMETHYLPHENOL	10	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	10	U	
2,6-DINITROTOLUENE	10	U	
2-CHLORONAPHTHALENE	10	U	
2-CHLOROPHENOL	10	U	
2-METHYLNAPHTHALENE	10	U	
2-METHYLPHENOL	10	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	10	U	
3,3'-DICHLOROBENZIDINE	10	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	10	U	
4-CHLORO-3-METHYLPHENOL	10	U	
4-CHLOROANILINE	10	U	
4-CHLOROPHENYL PHENYL ETHER	10	U	
4-METHYLPHENOL	10	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	10	U	
ACENAPHTHYLENE	10	U	

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	10	U	
BENZO(A)ANTHRACENE	10	U	
BENZO(A)PYRENE	10	U	
BENZO(B)FLUORANTHENE	10	U	
BENZO(G,H,I)PERYLENE	10	U	
BENZO(K)FLUORANTHENE	10	U	
BIS(2-CHLOROETHOXY)METHANE	10	U	
BIS(2-CHLOROETHYL)ETHER	10	U	
BIS(2-ETHYLHEXYL)PHTHALATE	10	U	
BUTYL BENZYL PHTHALATE	10	U	
CARBAZOLE	20	U	
CHRYSENE	10	U	
DIBENZO(A,H)ANTHRACENE	10	U	
DIBENZOFURAN	10	U	
DIETHYL PHTHALATE	10	U	
DIMETHYL PHTHALATE	10	U	
DI-N-BUTYL PHTHALATE	10	U	
DI-N-OCTYL PHTHALATE	10	U	
FLUORANTHENE	10	U	
FLUORENE	10	U	
HEXACHLOROBENZENE	10	U	
HEXACHLOROBUTADIENE	10	U	
HEXACHLOROCYCLOPENTADIENE	10	UJ	C
HEXACHLOROETHANE	10	U	
INDENO(1,2,3-CD)PYRENE	10	U	
ISOPHORONE	10	U	
NAPHTHALENE	10	U	
NITROBENZENE	10	U	
N-NITROSO-DI-N-PROPYLAMINE	10	U	
N-NITROSODIPHENYLAMINE	10	U	

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	10	U	
PHENOL	10	U	
PYRENE	10	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-101	nsample	WOD-SS-101	nsample	WOD-SS-101
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-02A	lab_id	B0221-02A	lab_id	B0221-02A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	380	UJ	R
1,2-DICHLOROBENZENE	380	UJ	R
1,3-DICHLOROBENZENE	380	UJ	R
1,4-DICHLOROBENZENE	380	UJ	R
2,2'-OXYBIS(1-CHLOROPROPANE)	380	UJ	R
2,4,5-TRICHLOROPHENOL	770	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	770	U	
2,4-DINITROTOLUENE	380	UJ	R
2,6-DINITROTOLUENE	380	UJ	R
2-CHLORONAPHTHALENE	380	UJ	R
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	UJ	R
2-METHYLPHENOL	380	U	
2-NITROANILINE	770	UJ	R
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	UJ	R
3-NITROANILINE	770	UJ	R
4,6-DINITRO-2-METHYLPHENOL	770	U	
4-BROMOPHENYL PHENYL ETHER	380	UJ	R
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	UJ	R
4-CHLOROPHENYL PHENYL ETHER	380	UJ	R
4-METHYLPHENOL	380	U	
4-NITROANILINE	770	UJ	R
4-NITROPHENOL	770	U	
ACENAPHTHENE	380	UJ	R
ACENAPHTHYLENE	380	UJ	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	380	UJ	R
BENZO(A)ANTHRACENE	140	J	PR
BENZO(A)PYRENE	150	J	PR
BENZO(B)FLUORANTHENE	190	J	PR
BENZO(G,H,I)PERYLENE	95	J	PR
BENZO(K)FLUORANTHENE	100	J	PR
BIS(2-CHLOROETHOXY)METHANE	380	UJ	R
BIS(2-CHLOROETHYL)ETHER	380	UJ	R
BIS(2-ETHYLHEXYL)PHTHALATE	380	UJ	R
BUTYL BENZYL PHTHALATE	380	UJ	R
CARBAZOLE	380	UJ	R
CHRYSENE	150	J	PR
DIBENZO(A,H)ANTHRACENE	380	UJ	R
DIBENZOFURAN	380	UJ	R
DIETHYL PHTHALATE	380	UJ	R
DIMETHYL PHTHALATE	380	UJ	R
DI-N-BUTYL PHTHALATE	380	UJ	R
DI-N-OCTYL PHTHALATE	380	UJ	R
FLUORANTHENE	260	J	PR
FLUORENE	380	UJ	R
HEXACHLOROBENZENE	380	UJ	R
HEXACHLOROBUTADIENE	380	UJ	R
HEXACHLOROCYCLOPENTADIENE	380	UJ	CR
HEXACHLOROETHANE	380	UJ	R
INDENO(1,2,3-CD)PYRENE	82	J	PR
ISOPHORONE	380	UJ	R
NAPHTHALENE	380	UJ	R
NITROBENZENE	380	UJ	R
N-NITROSO-DI-N-PROPYLAMINE	380	UJ	R
N-NITROSODIPHENYLAMINE	380	UJ	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	770	U	
PHENANTHRENE	380	UJ	R
PHENOL	380	U	
PYRENE	260	J	PR

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-102	nsample	WOD-SS-102	nsample	WOD-SS-102
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-04A	lab_id	B0221-04A	lab_id	B0221-04A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	730	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	730	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	730	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	730	U	
4,6-DINITRO-2-METHYLPHENOL	730	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	730	U	
4-NITROPHENOL	730	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	730	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-103	nsample	WOD-SS-103	nsample	WOD-SS-103
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-06A	lab_id	B0221-06A	lab_id	B0221-06A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	87	Pct_Solids	87	Pct_Solids	87
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	380	UJ	R
1,2-DICHLOROBENZENE	380	UJ	R
1,3-DICHLOROBENZENE	380	UJ	R
1,4-DICHLOROBENZENE	380	UJ	R
2,2'-OXYBIS(1-CHLOROPROPANE)	380	UJ	R
2,4,5-TRICHLOROPHENOL	760	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	760	U	
2,4-DINITROTOLUENE	380	UJ	R
2,6-DINITROTOLUENE	380	UJ	R
2-CHLORONAPHTHALENE	380	UJ	R
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	UJ	R
2-METHYLPHENOL	380	U	
2-NITROANILINE	760	UJ	R
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	UJ	R
3-NITROANILINE	760	UJ	R
4,6-DINITRO-2-METHYLPHENOL	760	U	
4-BROMOPHENYL PHENYL ETHER	380	UJ	R
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	UJ	R
4-CHLOROPHENYL PHENYL ETHER	380	UJ	R
4-METHYLPHENOL	380	U	
4-NITROANILINE	760	UJ	R
4-NITROPHENOL	760	U	
ACENAPHTHENE	380	UJ	R
ACENAPHTHYLENE	380	UJ	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	380	UJ	R
BENZO(A)ANTHRACENE	380	UJ	R
BENZO(A)PYRENE	380	UJ	R
BENZO(B)FLUORANTHENE	380	UJ	R
BENZO(G,H,I)PERYLENE	380	UJ	R
BENZO(K)FLUORANTHENE	380	UJ	R
BIS(2-CHLOROETHOXY)METHANE	380	UJ	R
BIS(2-CHLOROETHYL)ETHER	380	UJ	R
BIS(2-ETHYLHEXYL)PHTHALATE	380	UJ	R
BUTYL BENZYL PHTHALATE	380	UJ	R
CARBAZOLE	380	UJ	R
CHRYSENE	380	UJ	R
DIBENZO(A,H)ANTHRACENE	380	UJ	R
DIBENZOFURAN	380	UJ	R
DIETHYL PHTHALATE	380	UJ	R
DIMETHYL PHTHALATE	380	UJ	R
DI-N-BUTYL PHTHALATE	380	UJ	R
DI-N-OCTYL PHTHALATE	380	UJ	R
FLUORANTHENE	380	UJ	R
FLUORENE	380	UJ	R
HEXACHLOROBENZENE	380	UJ	R
HEXACHLOROBUTADIENE	380	UJ	R
HEXACHLOROCYCLOPENTADIENE	380	UJ	CR
HEXACHLOROETHANE	380	UJ	R
INDENO(1,2,3-CD)PYRENE	380	UJ	R
ISOPHORONE	380	UJ	R
NAPHTHALENE	380	UJ	R
NITROBENZENE	380	UJ	R
N-NITROSO-DI-N-PROPYLAMINE	380	UJ	R
N-NITROSODIPHENYLAMINE	380	UJ	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	760	U	
PHENANTHRENE	380	UJ	R
PHENOL	380	U	
PYRENE	380	UJ	R

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-104	nsample	WOD-SS-104	nsample	WOD-SS-104
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-08A	lab_id	B0221-08A	lab_id	B0221-08A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	380	U	
1,2-DICHLOROBENZENE	380	U	
1,3-DICHLOROBENZENE	380	U	
1,4-DICHLOROBENZENE	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	770	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	770	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	770	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	770	U	
4,6-DINITRO-2-METHYLPHENOL	770	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	770	U	
4-NITROPHENOL	770	U	
ACENAPHTHENE	380	U	
ACENAPHTHYLENE	380	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	380	U	
BENZO(A)ANTHRACENE	380	U	
BENZO(A)PYRENE	380	UJ	N
BENZO(B)FLUORANTHENE	380	UJ	N
BENZO(G,H,I)PERYLENE	380	UJ	N
BENZO(K)FLUORANTHENE	380	UJ	N
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	J	P
BUTYL BENZYL PHTHALATE	380	U	
CARBAZOLE	380	U	
CHRYSENE	380	U	
DIBENZO(A,H)ANTHRACENE	380	UJ	N
DIBENZOFURAN	380	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	UJ	N
FLUORANTHENE	380	U	
FLUORENE	380	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	UJ	C
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	380	UJ	N
ISOPHORONE	380	U	
NAPHTHALENE	380	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	
N-NITROSODIPHENYLAMINE	380	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	770	U	
PHENANTHRENE	380	U	
PHENOL	380	U	
PYRENE	380	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-101-1315	nsample	WOD-SU-101-1315	nsample	WOD-SU-101-1315
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-03A	lab_id	B0221-03A	lab_id	B0221-03A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	U	
1,2-DICHLOROBENZENE	360	U	
1,3-DICHLOROBENZENE	360	U	
1,4-DICHLOROBENZENE	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	740	U	
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	U	
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	UJ	C
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	
N-NITROSODIPHENYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-102-1517	nsample	WOD-SU-102-1517	nsample	WOD-SU-102-1517
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-05A	lab_id	B0221-05A	lab_id	B0221-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	96	Pct_Solids	96	Pct_Solids	96
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	330	U	
1,2-DICHLOROBENZENE	330	U	
1,3-DICHLOROBENZENE	330	U	
1,4-DICHLOROBENZENE	330	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	330	U	
2,4,5-TRICHLOROPHENOL	680	U	
2,4,6-TRICHLOROPHENOL	330	U	
2,4-DICHLOROPHENOL	330	U	
2,4-DIMETHYLPHENOL	330	U	
2,4-DINITROPHENOL	680	U	
2,4-DINITROTOLUENE	330	U	
2,6-DINITROTOLUENE	330	U	
2-CHLORONAPHTHALENE	330	U	
2-CHLOROPHENOL	330	U	
2-METHYLNAPHTHALENE	330	U	
2-METHYLPHENOL	330	U	
2-NITROANILINE	680	U	
2-NITROPHENOL	330	U	
3,3'-DICHLOROBENZIDINE	330	U	
3-NITROANILINE	680	U	
4,6-DINITRO-2-METHYLPHENOL	680	U	
4-BROMOPHENYL PHENYL ETHER	330	U	
4-CHLORO-3-METHYLPHENOL	330	U	
4-CHLOROANILINE	330	U	
4-CHLOROPHENYL PHENYL ETHER	330	U	
4-METHYLPHENOL	330	U	
4-NITROANILINE	680	U	
4-NITROPHENOL	680	U	
ACENAPHTHENE	330	U	
ACENAPHTHYLENE	330	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	330	U	
BENZO(A)ANTHRACENE	330	U	
BENZO(A)PYRENE	330	U	
BENZO(B)FLUORANTHENE	330	U	
BENZO(G,H,I)PERYLENE	330	U	
BENZO(K)FLUORANTHENE	330	U	
BIS(2-CHLOROETHOXY)METHANE	330	U	
BIS(2-CHLOROETHYL)ETHER	330	U	
BIS(2-ETHYLHEXYL)PHTHALATE	330	U	
BUTYL BENZYL PHTHALATE	330	U	
CARBAZOLE	330	U	
CHRYSENE	330	U	
DIBENZO(A,H)ANTHRACENE	330	U	
DIBENZOFURAN	330	U	
DIETHYL PHTHALATE	330	U	
DIMETHYL PHTHALATE	330	U	
DI-N-BUTYL PHTHALATE	330	U	
DI-N-OCTYL PHTHALATE	330	U	
FLUORANTHENE	330	U	
FLUORENE	330	U	
HEXACHLOROBENZENE	330	U	
HEXACHLOROBUTADIENE	330	U	
HEXACHLOROCYCLOPENTADIENE	330	UJ	C
HEXACHLOROETHANE	330	U	
INDENO(1,2,3-CD)PYRENE	330	U	
ISOPHORONE	330	U	
NAPHTHALENE	330	U	
NITROBENZENE	330	U	
N-NITROSO-DI-N-PROPYLAMINE	330	U	
N-NITROSODIPHENYLAMINE	330	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	680	U	
PHENANTHRENE	330	U	
PHENOL	330	U	
PYRENE	330	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-103-1113	nsample	WOD-SU-103-1113	nsample	WOD-SU-103-1113
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-07A	lab_id	B0221-07A	lab_id	B0221-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	360	UJ	R
1,2-DICHLOROBENZENE	360	UJ	R
1,3-DICHLOROBENZENE	360	UJ	R
1,4-DICHLOROBENZENE	360	UJ	R
2,2'-OXYBIS(1-CHLOROPROPANE)	360	UJ	R
2,4,5-TRICHLOROPHENOL	740	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	740	U	
2,4-DINITROTOLUENE	360	UJ	R
2,6-DINITROTOLUENE	360	UJ	R
2-CHLORONAPHTHALENE	360	UJ	R
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	UJ	R
2-METHYLPHENOL	360	U	
2-NITROANILINE	740	UJ	R
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	UJ	R
3-NITROANILINE	740	UJ	R
4,6-DINITRO-2-METHYLPHENOL	740	U	
4-BROMOPHENYL PHENYL ETHER	360	UJ	R
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	UJ	R
4-CHLOROPHENYL PHENYL ETHER	360	UJ	R
4-METHYLPHENOL	360	U	
4-NITROANILINE	740	UJ	R
4-NITROPHENOL	740	U	
ACENAPHTHENE	360	UJ	R
ACENAPHTHYLENE	360	UJ	R

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	360	UJ	R
BENZO(A)ANTHRACENE	360	UJ	R
BENZO(A)PYRENE	360	UJ	R
BENZO(B)FLUORANTHENE	360	UJ	R
BENZO(G,H,I)PERYLENE	360	UJ	R
BENZO(K)FLUORANTHENE	360	UJ	R
BIS(2-CHLOROETHOXY)METHANE	360	UJ	R
BIS(2-CHLOROETHYL)ETHER	360	UJ	R
BIS(2-ETHYLHEXYL)PHTHALATE	360	UJ	R
BUTYL BENZYL PHTHALATE	360	UJ	R
CARBAZOLE	360	UJ	R
CHRYSENE	360	UJ	R
DIBENZO(A,H)ANTHRACENE	360	UJ	R
DIBENZOFURAN	360	UJ	R
DIETHYL PHTHALATE	360	UJ	R
DIMETHYL PHTHALATE	360	UJ	R
DI-N-BUTYL PHTHALATE	360	UJ	R
DI-N-OCTYL PHTHALATE	360	UJ	R
FLUORANTHENE	360	UJ	R
FLUORENE	360	UJ	R
HEXACHLOROBENZENE	360	UJ	R
HEXACHLOROBUTADIENE	360	UJ	R
HEXACHLOROCYCLOPENTADIENE	360	UJ	R
HEXACHLOROETHANE	360	UJ	R
INDENO(1,2,3-CD)PYRENE	360	UJ	R
ISOPHORONE	360	UJ	R
NAPHTHALENE	360	UJ	R
NITROBENZENE	360	UJ	R
N-NITROSO-DI-N-PROPYLAMINE	360	UJ	R
N-NITROSODIPHENYLAMINE	360	UJ	R

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	740	U	
PHENANTHRENE	360	UJ	R
PHENOL	360	U	
PYRENE	360	UJ	R

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-104-1012	nsample	WOD-SU-104-1012	nsample	WOD-SU-104-1012
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-09A	lab_id	B0221-09A	lab_id	B0221-09A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	95	Pct_Solids	95	Pct_Solids	95
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,2,4-TRICHLOROBENZENE	340	U	
1,2-DICHLOROBENZENE	340	U	
1,3-DICHLOROBENZENE	340	U	
1,4-DICHLOROBENZENE	340	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	340	U	
2,4,5-TRICHLOROPHENOL	690	U	
2,4,6-TRICHLOROPHENOL	340	U	
2,4-DICHLOROPHENOL	340	U	
2,4-DIMETHYLPHENOL	340	U	
2,4-DINITROPHENOL	690	U	
2,4-DINITROTOLUENE	340	U	
2,6-DINITROTOLUENE	340	U	
2-CHLORONAPHTHALENE	340	U	
2-CHLOROPHENOL	340	U	
2-METHYLNAPHTHALENE	340	U	
2-METHYLPHENOL	340	U	
2-NITROANILINE	690	U	
2-NITROPHENOL	340	U	
3,3'-DICHLOROBENZIDINE	340	U	
3-NITROANILINE	690	U	
4,6-DINITRO-2-METHYLPHENOL	690	U	
4-BROMOPHENYL PHENYL ETHER	340	U	
4-CHLORO-3-METHYLPHENOL	340	U	
4-CHLOROANILINE	340	U	
4-CHLOROPHENYL PHENYL ETHER	340	U	
4-METHYLPHENOL	340	U	
4-NITROANILINE	690	U	
4-NITROPHENOL	690	U	
ACENAPHTHENE	340	U	
ACENAPHTHYLENE	340	U	

Parameter	Result	Val Qual	Qual Code
ANTHRACENE	340	U	
BENZO(A)ANTHRACENE	340	U	
BENZO(A)PYRENE	340	U	
BENZO(B)FLUORANTHENE	340	U	
BENZO(G,H,I)PERYLENE	340	U	
BENZO(K)FLUORANTHENE	340	U	
BIS(2-CHLOROETHOXY)METHANE	340	U	
BIS(2-CHLOROETHYL)ETHER	340	U	
BIS(2-ETHYLHEXYL)PHTHALATE	37	J	P
BUTYL BENZYL PHTHALATE	340	U	
CARBAZOLE	340	U	
CHRYSENE	340	U	
DIBENZO(A,H)ANTHRACENE	340	U	
DIBENZOFURAN	340	U	
DIETHYL PHTHALATE	340	U	
DIMETHYL PHTHALATE	340	U	
DI-N-BUTYL PHTHALATE	340	U	
DI-N-OCTYL PHTHALATE	340	U	
FLUORANTHENE	340	U	
FLUORENE	340	U	
HEXACHLOROBENZENE	340	U	
HEXACHLOROBUTADIENE	340	U	
HEXACHLOROCYCLOPENTADIENE	340	UJ	C
HEXACHLOROETHANE	340	U	
INDENO(1,2,3-CD)PYRENE	340	U	
ISOPHORONE	340	U	
NAPHTHALENE	340	U	
NITROBENZENE	340	U	
N-NITROSO-DI-N-PROPYLAMINE	340	U	
N-NITROSODIPHENYLAMINE	340	U	

Parameter	Result	Val Qual	Qual Code
PENTACHLOROPHENOL	690	U	
PHENANTHRENE	340	U	
PHENOL	340	U	
PYRENE	340	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	WOD-SS-101	nsample	WOD-SS-102	nsample	WOD-SS-103
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-02A	lab_id	B0221-04A	lab_id	B0221-06A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	90	Pct_Solids	87
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	WOD-SS-104	nsample	WOD-SU-101-1315	nsample	WOD-SU-102-1517
samp_date	2/6/2003	samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-08A	lab_id	B0221-03A	lab_id	B0221-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	89	Pct_Solids	96
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	34	U	
AROCLOR-1221	34	U	
AROCLOR-1232	34	U	
AROCLOR-1242	34	U	
AROCLOR-1248	34	U	
AROCLOR-1254	34	U	
AROCLOR-1260	34	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	WOD-SU-103-1113	nsample	WOD-SU-104-1012
samp_date	2/6/2003	samp_date	2/6/2003
lab_id	B0221-07A	lab_id	B0221-09A
qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	95
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

PROJ_NO: 4740

SDG: B0221 MEDIA: WATER DATA FRACTION: P

nsample	RB-020603
samp_date	2/6/2003
lab_id	B0221-10C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Appendix B

Results as Reported by the Laboratory

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2533

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	2	
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2533

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2533

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2532

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	2	
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2532

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	2	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2532

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3842

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	53	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	8	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3842

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	2	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W0DSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02C

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3842

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04C

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3844

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	21	
75-15-0	Carbon Disulfide	13	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04C

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3844

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	13	U
79-20-9	Methyl Acetate	3	J
110-81-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W0DSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04C

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3844

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3846

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 13 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	44	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3846

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 13 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	2	J
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	6	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W0DSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06C

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3846

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 13 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	14.20	39	J
2.		BRANCHED ALKANE	14.34	120	J
3.		UNKNOWN	14.69	54	J
4.		UNKNOWN	14.82	58	J
5.		UNKNOWN	14.86	51	J
6.		UNKNOWN	14.91	26	J
7.		UNKNOWN	15.01	34	J
8.		UNKNOWN	15.09	270	J
9.		UNKNOWN	15.19	54	J
10.		UNKNOWN	15.56	58	J
11.		UNKNOWN	15.65	67	J
12.		UNKNOWN	15.69	73	J
13.		UNKNOWN	15.86	110	J
14.		UNKNOWN	15.93	49	J
15.		UNKNOWN	16.00	84	J
16.		UNKNOWN	16.10	100	J
17.		UNKNOWN	16.24	50	J
18.		UNKNOWN	16.31	210	J
19.		UNKNOWN	16.39	81	J
20.		UNKNOWN	16.47	60	J
21.		UNKNOWN	16.57	52	J
22.		UNKNOWN	16.64	80	J
23.		UNKNOWN	16.75	50	J
24.	21693-51-6	NAPHTHALENE, 1,2,3,4-TETRAHY	16.83	46	NJ
25.		UNKNOWN	16.92	40	J
26.	6682-06-0	1H-INDENE, 2,3-DIHYDRO-4,5,7	17.10	82	NJ
27.	0-00-0	DECAHYDRO-4,4,8,9,10-PENTAME	17.37	52	NJ
28.		UNKNOWN	17.64	26	J
29.		UNKNOWN	17.73	38	J
30.		UNKNOWN	17.85	32	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3848

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	30	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W0DSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3848

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	11	
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

W0DSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3848

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	64-17-5	ETHANOL	3.01	15	NJ
2.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.07	10	NJ
3.		UNKNOWN	14.35	12	J
4.		UNKNOWN	14.46	7	J
5.		UNKNOWN	14.85	5	J
6.		UNKNOWN	15.09	22	J
7.		UNKNOWN	16.31	20	J
8.		UNKNOWN	16.57	7	J
9.		UNKNOWN	16.64	7	J
10.		UNKNOWN	17.09	6	J
11.		UNKNOWN	17.13	11	J
12.					
13.					
14.					
15.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3843

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3843

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3843

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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9.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3845

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 4 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	13	
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	8	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	3	J
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3845

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 4 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	J
95-47-6	o-Xylene	9	J
1330-20-7	Xylene (Total)	20	
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	93	
95-63-6	1,2,4-Trimethylbenzene	42	
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3845

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 4 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.40	400	J
2.		UNKNOWN	10.85	270	J
3.		UNKNOWN	11.08	110	J
4.		UNKNOWN	11.40	110	J
5.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.59	94	NJ
6.		UNKNOWN	11.78	180	J
7.		UNKNOWN	11.92	72	J
8.		UNKNOWN	12.07	100	J
9.		UNKNOWN	12.14	76	J
10.		UNKNOWN	12.26	77	J
11.		UNKNOWN	12.36	73	J
12.		CYCLIC ALKANE	12.43	130	J
13.	934-74-7	BENZENE, 1-ETHYL-3,5-DIMETHY	12.67	270	NJ
14.		UNKNOWN	12.91	220	J
15.		UNKNOWN	13.07	240	J
16.		UNKNOWN	13.16	73	J
17.		UNKNOWN	13.23	210	J
18.		UNKNOWN	13.46	240	J
19.		UNKNOWN	13.58	240	J
20.		UNKNOWN	13.73	230	J
21.		UNKNOWN	13.81	120	J
22.		UNKNOWN	13.96	79	J
23.		UNKNOWN	14.07	140	J
24.		UNKNOWN	14.13	94	J
25.		UNKNOWN	14.21	240	J
26.		BRANCHED ALKANE	14.35	120	J
27.		UNKNOWN	14.40	360	J
28.		UNKNOWN	14.86	75	J
29.		UNKNOWN	15.02	100	J
30.		UNKNOWN	15.22	76	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3897

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3897

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-07B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3897

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.06	14	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3849

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3849

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3849

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 18 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	6	J
2.		UNKNOWN	12.35	6	J
3.		UNKNOWN	14.18	5	J
4.		UNKNOWN	14.34	19	J
5.		UNKNOWN	14.45	7	J
6.		UNKNOWN	14.85	13	J
7.		UNKNOWN	14.91	5	J
8.		UNKNOWN	15.09	29	J
9.		UNKNOWN	15.19	6	J
10.		UNKNOWN	15.56	11	J
11.		UNKNOWN	15.65	9	J
12.		UNKNOWN	16.01	6	J
13.		UNKNOWN	16.09	6	J
14.		UNKNOWN	16.16	8	J
15.		UNKNOWN	16.23	7	J
16.		UNKNOWN	16.30	22	J
17.		UNKNOWN	17.13	8	J
18.		UNKNOWN	17.38	6	J
19.					
20.					
21.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-09BRE

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3898

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	11	U
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	11	U
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-09BRE

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3898

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1041012RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0211-09BRE

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3898

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 5 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.41	8	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1912

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)Ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitroso-di-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-Methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	10	U
208-96-8	Acenaphthylene	10	U
606-20-2	2,6-Dinitrotoluene	10	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1912

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl-phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	10	U
101-55-3	4-Bromophenyl-phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	20	U
84-74-2	Di-n-butylphthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	10	U
56-55-3	Benzo(a)anthracene	10	U
218-01-9	Chrysene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
117-84-0	Di-n-octylphthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenzo(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1912

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	260	J
129-00-0	Pyrene	260	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	190	J
207-08-9	Benzo(k)fluoranthene	100	J
50-32-8	Benzo(a)pyrene	150	J
193-39-5	Indeno(1,2,3-cd)pyrene	82	J
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	95	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted:02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.42	420	J
2.		UNKNOWN	27.29	1000	J
3.	1058-61-3	STIGMAST-4-EN-3-ONE	29.72	210	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2503

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	790	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	790	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	790	U
83-32-9	Acenaphthene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2503

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	790	U
100-02-7	4-Nitrophenol	790	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	790	U
534-52-1	4,6-Dinitro-2-methylphenol	790	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	790	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	250	J
129-00-0	Pyrene	340	J
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	160	J
218-01-9	Chrysene	160	J
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	240	J
207-08-9	Benzo(k)fluoranthene	120	J
50-32-8	Benzo(a)pyrene	170	J
193-39-5	Indeno(1,2,3-cd)pyrene	89	J
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	92	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS101RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2503

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	1117-52-8	5,9,13-PENTADECATRIEN-2-ONE,	17.11	250	NJ
2.		UNKNOWN	24.05	270	J
3.		UNKNOWN	26.67	1100	J
4.		UNKNOWN	27.40	550	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2238

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	730	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	730	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	730	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2238

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	730	U
100-02-7	4-Nitrophenol	730	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	730	U
534-52-1	4,6-Dinitro-2-methylphenol	730	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	730	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: S2D2238

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.89	180	J
2.		UNKNOWN	23.59	250	J
3.		UNKNOWN	27.50	320	J
4.		UNKNOWN	28.57	160	J
5.		UNKNOWN	28.89	570	J
6.		UNKNOWN	29.51	570	J
7.		UNKNOWN	29.76	570	J
8.		UNKNOWN	29.90	330	J
9.		UNKNOWN	30.29	180	J
10.		UNKNOWN	30.46	1400	J
11.					
12.					
13.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2242

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	760	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	760	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	760	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2242

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	760	U
100-02-7	4-Nitrophenol	760	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	760	U
534-52-1	4,6-Dinitro-2-methylphenol	760	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	760	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2242

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.59	350	J
2.		UNKNOWN	27.48	210	J
3.		UNKNOWN	27.56	210	J
4.		UNKNOWN	27.65	180	J
5.		UNKNOWN	28.31	420	J
6.		UNKNOWN	28.41	200	J
7.		UNKNOWN	28.57	210	J
8.		UNKNOWN	28.69	180	J
9.		UNKNOWN	28.89	720	J
10.		UNKNOWN	29.36	180	J
11.	1058-61-3	STIGMAST-4-EN-3-ONE	29.73	490	NJ
12.		UNKNOWN	30.44	360	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS103RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2502

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS103RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2502

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS103RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2502

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 13 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	24.01	360	J
2.		UNKNOWN	25.34	170	J
3.		UNKNOWN	26.56	410	J
4.		UNKNOWN	26.83	420	J
5.		UNKNOWN	27.40	620	J
6.		UNKNOWN	27.58	800	J
7.		UNKNOWN	27.67	170	J
8.		UNKNOWN	27.98	900	J
9.		UNKNOWN	28.10	910	J
10.		UNKNOWN	28.52	570	J
11.		UNKNOWN	28.89	630	J
12.		UNKNOWN	29.02	280	J
13.		UNKNOWN	29.50	1000	J
14.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2244

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2244

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	J
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2244

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.43	810	J
2.		UNKNOWN	22.33	240	J
3.		UNKNOWN	23.60	200	J
4.		UNKNOWN	24.44	260	J
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2295

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2295

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2295

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	112-53-8	1-DODECANOL	13.19	230	NJ
2.		UNKNOWN	23.50	230	J
3.					
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2296

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	680	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	680	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	680	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2296

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	680	U
100-02-7	4-Nitrophenol	680	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	680	U
534-52-1	4,6-Dinitro-2-methylphenol	680	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	680	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2296

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 4 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.38	1100	J
2.		UNKNOWN	10.68	790	J
3.		UNKNOWN	10.92	4100	J
4.		UNKNOWN	11.37	1300	J
5.		UNKNOWN	11.84	960	J
6.		UNKNOWN	12.14	3600	J
7.		UNKNOWN	12.50	910	J
8.		UNKNOWN	13.02	800	J
9.		UNKNOWN	13.31	1100	J
10.		UNKNOWN	13.94	1400	J
11.		UNKNOWN	14.03	1100	J
12.		UNKNOWN	14.14	1200	J
13.		UNKNOWN	14.98	3100	J
14.		UNKNOWN	15.16	690	J
15.		UNKNOWN	15.86	730	J
16.		UNKNOWN	16.77	800	J
17.					
18.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2235

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2235

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1031113

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2235

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/02/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.33	840	J
2.		UNKNOWN	22.45	870	J
3.		UNKNOWN	23.59	250	J
4.					
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8.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2498

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	740	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	740	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	740	U
83-32-9	Acenaphthene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1031113RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2498

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	740	U
100-02-7	4-Nitrophenol	740	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	740	U
534-52-1	4,6-Dinitro-2-methylphenol	740	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	740	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	44	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1031113RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07ARE

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2498

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 03/10/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2297

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	690	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	690	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	690	U
83-32-9	Acenaphthene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2297

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	690	U
100-02-7	4-Nitrophenol	690	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	690	U
534-52-1	4,6-Dinitro-2-methylphenol	690	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	690	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	37	J
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1041012

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2297

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 5 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.49	320	J
2.					
3.					
4.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-020603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: B0221-10C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9224F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

W0DSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9397F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

W0DSS102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9399F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

W0DSS103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9401F

% Moisture: 13 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

W0DSS104

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9409F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1011315

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-03A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9398F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: E1D9400F

% Moisture: 4 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	34	U
11104-28-2	Aroclor-1221	34	U
11141-16-5	Aroclor-1232	34	U
53469-21-9	Aroclor-1242	34	U
12672-29-6	Aroclor-1248	34	U
11097-69-1	Aroclor-1254	34	U
11096-82-5	Aroclor-1260	34	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1031113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-07A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9408F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1041012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9410F

% Moisture: 5 decanted: (Y/N) N Date Received: 02/07/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.

-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

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Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
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http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

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Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

FIELD DUPLICATE PRECISION

ANALYTE	NTCOU2GD20008	NTCOU2G18B08	RPD	DIFFERENCE
1,1,2-Trichloroethane	1.2	1.2	0.00	0
1,1-Dichloroethene	1.6	1.6	0.00	0
cis-1,2-Dichloroethene	163	135	18.79	28
Tetrachloroethene	74	80.1	7.92	6.1
Toluene	1.9	2	5.13	0.1
Trichloroethene	3550	2850	21.88	700
Vinyl chloride	37.1	42	12.39	4.9
ANALYTE	**NTCOU2GD50008**	**NTCOU2G33B08**	**RPD**	**DIFFERENCE**
Benzene	2.6	3	14.29	0.4
Chlorobenzene	1.7	1.8	5.71	0.1
cis-1,2-Dichloroethene	6.1	6.5	6.35	0.4
Tetrachloroethene	0.5U	0.5	#VALUE!	#VALUE!
Trichloroethene	67.4	76.3	12.39	8.9
Vinyl chloride	5.6	5.8	3.51	0.2

Spada, Bernie

From: Barton, Skip
Sent: Wednesday, April 30, 2003 4:15 PM
To: Lee, Ethan; Spada, Bernie
Cc: Campbell, Michael; Grayson, Teresa; McCoy, Steven
Subject: Duplicate/field pairs for NTC Orlando and other items

Hi,

Ethan, regarding alkalinity analysis: if the groundwater pH is below 5.0 at the time of sampling, we do not request alkalinity, so it is not marked on the COC.

Bernie, regarding charging to 4207 or 4206: you are correct, there is no gaseous matrix analysis specified in sampling for 4207 (as listed on the bottle order or the work release), but the TOM requested charges for the March '03 quarterly event be applied to 4207.

The duplicate pairs are listed below.

NTC02GD100023 NTC02G13C23

NTC08GD100024 NTC08G00624
NTC08GD200024 NTC08G01124
NTC08GD300024 NTC08G02824

NTC09GD100024 NTC09G00424
NTC09GD200024 NTC09G02624

NTCOU2GD100008 NTCOU2G03A08
NTCOU2GD200008 NTCOU2G18B08
NTCOU2GD300008 NTCOU2G22B08
NTCOU2GD400008 NTCOU2G33B08
NTCOU2GD500008 NTCOU2GP2B08 F17MH
NTCOU2SWD600008 NTCOU2SW3508

NTC52GD100023 NTC52G01223

Hope this helps,

Skip

Enoch "Skip" Barton, P.G.
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B0221

HOLDING TIME

04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0210LCSS	LCS	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
%	LCSW	0210LCSW	LCS	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	PBW	0210PBW	M_BLANK	B0221	HG	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020603	B0221-10B	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101	B0221-02A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101DUP	B0221-02ADUP	DUPLICATE	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
%	W0D-SS-101MS	B0221-02AMS	MS	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-102	B0221-04A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-103	B0221-06A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-104	B0221-08A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	HG	02/06/03	02/10/03	02/11/03	4	1	5
%	LCSS	0210LCSS	LCS	B0221	M	/ /	02/10/03	02/10/03	0	0	0
%	LCSW	0210LCSW	LCS	B0221	M	/ /	02/10/03	02/11/03	0	1	0
MG/KG	PBS	0210PBS	M_BLANK	B0221	M	/ /	02/10/03	02/10/03	0	0	0
UG/L	PBW	0210PBW	M_BLANK	B0221	M	/ /	02/10/03	02/11/03	0	1	0
UG/L	RB-020603	B0221-10B	NORMAL	B0221	M	02/06/03	02/10/03	02/11/03	4	1	5
MG/KG	W0D-SS-101	B0221-02A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-101DUP	B0221-02ADUP	DUPLICATE	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
%	W0D-SS-101MS	B0221-02AMS	MS	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-102	B0221-04A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	W0D-SS-103	B0221-06A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SS-104	B0221-08A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
MG/KG	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	M	02/06/03	02/10/03	02/10/03	4	0	4
%	RB-020603	B0221-10C	NORMAL	B0221	OS	02/06/03	02/12/03	02/19/03	6	7	13
%	SBLK2F	MB-5702	M_BLANK	B0221	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2FLCS	LCS-5702	LCS	B0221	OS	/ /	02/19/03	02/28/03	0	9	0
%	SBLK2P	MB-6006	M_BLANK	B0221	OS	/ /	03/10/03	03/11/03	0	1	0
%	SBLK2PLCS	LCS-6006	LCS	B0221	OS	/ /	03/10/03	03/11/03	0	1	0
UG/L	SBLK2R	MB-5612	M_BLANK	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCS	LCS-5612	LCS	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCSD	LCSD-5612	LCSD	B0221	OS	/ /	02/12/03	02/19/03	0	7	0
%	W0D-SS-101	B0221-02A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SS-101RE	B0221-02ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SS-102	B0221-04A	NORMAL	B0221	OS	02/06/03	02/19/03	03/02/03	13	11	24
%	W0D-SS-103	B0221-06A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SS-103RE	B0221-06ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SS-104	B0221-08A	NORMAL	B0221	OS	02/06/03	02/19/03	03/03/03	13	12	25
%	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
%	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
%	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	OS	02/06/03	02/19/03	03/02/03	13	11	24
%	W0D-SV-103-1113RE	B0221-07ARE	NORMAL	B0221	OS	02/06/03	03/10/03	03/11/03	32	1	33
%	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	OS	02/06/03	02/19/03	03/04/03	13	13	26
UG/L	RB-020603	B0221-10A	NORMAL	B0221	OV	02/06/03	02/19/03	02/19/03	13	0	13
UG/L	TB-020603	B0221-01A	NORMAL	B0221	OV	02/06/03	02/19/03	02/19/03	13	0	13

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	VBLK1S	V1B0218A	M_BLANK	B0221	OV	/ /	02/18/03	02/18/03	0	0	0
%	VBLK1SLCS	V1L0218A	LCS	B0221	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5T	V5B0212A	M_BLANK	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5TLCS	V5L0212A	LCS	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5TLCSD	V5L0212B	LCSD	B0221	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK5V	V5B0214A	M_BLANK	B0221	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK5VLCS	V5L0214A	LCS	B0221	OV	/ /	02/14/03	02/14/03	0	0	0
%	W0D-SS-101	B0221-02C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-102	B0221-04C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-103	B0221-06C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-104	B0221-08C	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-101-1315	B0221-03B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-102-1517	B0221-05B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-103-1113	B0221-07B	NORMAL	B0221	OV	02/06/03	02/14/03	02/14/03	8	0	8
%	W0D-SV-104-1012	B0221-09B	NORMAL	B0221	OV	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SV-104-1012RE	B0221-09BRE	NORMAL	B0221	OV	02/06/03	02/14/03	02/14/03	8	0	8
%	BBLK1A	MB-5587	M_BLANK	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1ALCS	LCS-5587	LCS	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1ALCSD	LCSD-5587	LCSD	B0221	PCB	/ /	02/12/03	02/12/03	0	0	0
%	BBLK1K	MB-5713	M_BLANK	B0221	PCB	/ /	02/19/03	02/21/03	0	2	0
%	BBLK1KLCS	LCS-5713	LCS	B0221	PCB	/ /	02/19/03	02/22/03	0	3	0
%	RB-020603	B0221-10C	NORMAL	B0221	PCB	02/06/03	02/12/03	02/12/03	6	0	6
%	W0D-SS-101	B0221-02A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-102	B0221-04A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-103	B0221-06A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SS-104	B0221-08A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-101-1315	B0221-03A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	W0D-SV-102-1517	B0221-05A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-103-1113	B0221-07A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
%	W0D-SV-104-1012	B0221-09A	NORMAL	B0221	PCB	02/06/03	02/19/03	02/22/03	13	3	16
S.U.	W0D-SS-101	B0221-02A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-102	B0221-04A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-103	B0221-06A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5
S.U.	W0D-SS-104	B0221-08A	NORMAL	B0221	PH	02/06/03	02/11/03	02/11/03	5	0	5

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and eight soil samples that were collected on February 6, 2003, and received at Mitkem on February 7, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of one surrogate in the reanalysis of sample SV1041012.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of methyl-t-butyl ether in the aqueous matrix LCS.

Sample analysis: due to sample matrix interference, internal standard areas were unusually low for both the initial and reanalysis of sample SV1041012. Internal standard areas were also low for sample WODSS103, due to matrix interference, as can be determined from the chromatogram. The two remaining aliquots for this sample were analyzed unsuccessfully, with one aliquot clogging the purge needle, such that no recovery of internal or surrogate standards was obtained, and the second aliquot being analyzed beyond the 12 hour time from the instrument tune. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Please note that the soil samples are reported using the analyte list specified for aqueous samples. There are five compounds on the analyte list for soils not in the aqueous analyte list. These five compounds will be determined and reported through library search TIC if present in the samples.

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of marginally low recovery of several surrogates in samples SV1031113, WODSS103 and WODSS101. The samples were re-extracted and analyzed with surrogate recoveries within the QC limits. Please note that the reextractions occurred beyond the method recommended holding time.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of 4-nitroaniline and carbazole in S2FLCS and high recovery of di-n-octylphthalate in S2PLCS.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: the method blank and lab control sample for the associated aqueous sample has a lower reporting limit. Samples in this batch from another analytical program required lower reporting limits. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WODSS101. Spike recoveries were outside of the QC limits for antimony, beryllium, cobalt, copper, silver, vanadium and zinc. A post digest spike was performed for all of these elements, with spike recoveries within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WODSS101. The relative percent difference between duplicate analyses for several elements exceeded the 20% QC limit. This does not affect the data as these concentrations did not exceed 5 times the nominal reporting limit. Please note that the QC limits are not applied where duplicate concentrations are less than 5 times the reporting limit. The "*" data qualifier for these metals have been crossed-off on the data sheets, indicating that these results do not require qualification.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/21/03

ALKANE NARRATIVE REPORT
Report date : 03/18/2003
SDG: B0221

Client Sample ID: W0DSS103	Lab Sample ID: B0221-06A	File ID: S2D2242	
Compound	RT	Est. Conc.	Q
Straight-chained Alkane	24.26	310	J
Straight-chained Alkane	25.62	340	J

Client Sample ID: W0DSS101	Lab Sample ID: B0221-02A	File ID: S2D2243	
Compound	RT	Est. Conc.	Q
Straight-chained Alkane	25.62	180	J

Client Sample ID: W0DSS104	Lab Sample ID: B0221-08A	File ID: S2D2244	
Compound	RT	Est. Conc.	Q
Straight-chained Alkane	24.26	570	J
Branched Alkane	25.63	1000	J

Client Sample ID: SV1021517	Lab Sample ID: B0221-05A	File ID: S2D2296	
Compound	RT	Est. Conc.	Q
Branched Alkane	11.45	1200	J
Straight-Chain Alkane	12.43	2200	J
Straight-Chain Alkane	13.09	2700	J
Branched Alkane	15.54	4000	J

Client Sample ID: WODSS103RE	Lab Sample ID: B0221-06ARE	File ID: S2D25	
Compound	RT	Est. Conc.	Q
Branched Alkane	23.94	380	J
Straight-chained Alkane	25.20	370	J

Client Sample ID: WODSS101RE	Lab Sample ID: B0221-02ARE	File ID: S2D25	
Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.93	180	J
Branched Alkane	25.19	270	J

Mitkem and Client Sample ID Summary Report*

Mitkem Workorder: B0221

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	Reported Client Sample ID	Full Client Sample ID
B0221-01A	TB-020603	TB-020603
B0221-02A	W0DSS101	W0D-SS-101
B0221-02B	W0DSS101	W0D-SS-101
B0221-02C	W0DSS101	W0D-SS-101
B0221-03A	SV1011315	W0D-SV-101-1315
B0221-03B	SV1011315	W0D-SV-101-1315
B0221-04A	W0DSS102	W0D-SS-102
B0221-04B	W0DSS102	W0D-SS-102
B0221-04C	W0DSS102	W0D-SS-102
B0221-05A	SV1021517	W0D-SV-102-1517
B0221-05B	SV1021517	W0D-SV-102-1517
B0221-06A	W0DSS103	W0D-SS-103
B0221-06B	W0DSS103	W0D-SS-103
B0221-06C	W0DSS103	W0D-SS-103
B0221-07A	SV1031113	W0D-SV-103-1113
B0221-07B	SV1031113	W0D-SV-103-1113
B0221-08A	W0DSS104	W0D-SS-104
B0221-08B	W0DSS104	W0D-SS-104
B0221-08C	W0DSS104	W0D-SS-104
B0221-09A	SV1041012	W0D-SV-104-1012
B0221-09B	SV1041012	W0D-SV-104-1012
B0221-10A	RB-020603	RB-020603
B0221-10B	RB-020603	RB-020603
B0221-10C	RB-020603	RB-020603

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

Mitkem Corporation

07/Feb/03 11:28

WorkOrder: B0221

Client ID: TETRA_NAVY
Project: Wallops Island
Location: CTO848
Comments: N/A

Case:
SDG:
PO: MA-01-102B-1298 28-847

Report Level: LEVEL 4
EDD: TTNUS
HC Due: 02/21/03
Fax Due:

Sample ID	Client Sample ID	Collection Date	Date Received	Matrix	Test Code	Test Code Comments	Hold	MS	SEL	Storage
							☐	☐	☐	VOA
B0221-01A	TB-020603	02/06/03 7:00	02/07/03	Aqueous	SW8260B_W					
							☐	☐	☐	A5
					E415_LK_TOC_S	not included in subcontract	☐	☐	☐	A5
B0221-02A	W0DSS101	02/06/03 8:08	02/07/03	Soil	PMoist		☐	☐	☑	A5
					SW6010B_S	TAL	☐	☐	☐	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
					SW9045C_S	not included subcontract	☐	☐	☐	A5
							☐	☐	☐	SUB
B0221-02B	W0DSS101	02/06/03 8:08	02/07/03	Soil	ASTMD422_S					
							☐	☐	☐	VOA
B0221-02C	W0DSS101	02/06/03 8:08	02/07/03	Soil	SW8260B_LOW_S					
							☐	☐	☐	A5
					PMoist		☐	☐	☑	A5
B0221-03A	SV1011315	02/06/03 8:40	02/07/03	Soil	SW6010B_S	TAL	☐	☐	☐	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S					

Client Rep: Benjamin F Dodge

000007

Mitkem Corporation

07/Feb/03 11:28

WorkOrder: B0221

Client ID: TETRA_NAVY
Project: Wallops Island
Location: CTO848
Comments: N/A

Case:
SDG:
PO: MA-01-102B-1298 28-847

Report Level: LEVEL 4
EDD: TTNUS
HC Due: 02/21/03
Fax Due:

Sample ID	Client Sample ID	Collection Date	Date Received	Matrix	Test Code	Test Code Comments	Hold	MS	SEL	Storage
							☐	☐	☐	VOA
B0221-03B	SV1011315	02/06/03 8:40	02/07/03	Soil	SW8260B_LOW_S					
					E415_LK_TOC_S	not included in subcontract	☐	☐	☐	A5
B0221-04A	W0DSS102	02/06/03 8:53	02/07/03	Soil	PMoist		☐	☐	☐	A5
					SW6010B_S	TAL	☐	☐	☑	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
					SW9045C_S	not included subcontract	☐	☐	☐	A5
							☐	☐	☐	SUB
B0221-04B	W0DSS102	02/06/03 8:53	02/07/03	Soil	ASTMD422_S					
							☐	☐	☐	VOA
B0221-04C	W0DSS102	02/06/03 8:53	02/07/03	Soil	SW8260B_LOW_S					
							☐	☐	☐	A5
B0221-05A	SV1021517	02/06/03 9:40	02/07/03	Soil	PMoist		☐	☐	☑	A5
					SW6010B_S	TAL	☐	☐	☐	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S					

Client Rep: Benjamin F Dodge

800008

Mitkem Corporation

07/Feb/03 11:28

WorkOrder: B0221

Client ID: TETRA_NAVY
Project: Wallops Island
Location: CTO848
Comments: N/A

Case:
SDG:
PO: MA-01-102B-1298 28-847

Report Level: LEVEL 4
EDD: TTNUS
HC Due: 02/21/03
Fax Due:

Sample ID	Client Sample ID	Collection Date	Date Received	Matrix	Test Code	Test Code Comments	Hold	MS	SEL	Storage
B0221-05A	SV1021517	02/06/03 9:40	02/07/03	Soil	SW8270C_S		☐	☐	☐	A5
							☐	☐	☐	VOA
B0221-05B	SV1021517	02/06/03 9:40	02/07/03	Soil	SW8260B_LOW_S		☐	☐	☐	A5
					E415_LK_TOC_S	not included in subcontract	☐	☐	☐	A5
B0221-06A	W0DSS103	02/06/03 9:55	02/07/03	Soil	PMoist		☐	☐	☑	A5
					SW6010B_S	TAL	☐	☐	☐	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
					SW9045C_S	not included subcontract				
							☐	☐	☐	SUB
B0221-06B	W0DSS103	02/06/03 9:55	02/07/03	Soil	ASTMD422_S		☐	☐	☐	VOA
							☐	☐	☐	A5
B0221-06C	W0DSS103	02/06/03 9:55	02/07/03	Soil	SW8260B_LOW_S		☐	☐	☑	A5
					PMoist		☐	☐	☐	A5
B0221-07A	SV1031113	02/06/03 10:55	02/07/03	Soil	SW6010B_S	TAL	☐	☐	☐	A5
					SW7471A	TAL				

Client Rep: Benjamin F Dodge

600000

Mitkem Corporation

07/Feb/03 11:28

WorkOrder: B0221

Client ID: TETRA_NAVY
Project: Wallops Island
Location: CTO848
Comments: N/A

Case:
SDG:
PO: MA-01-102B-1298 28-847

Report Level: LEVEL 4
EDD: TTNUS
HC Due: 02/21/03
Fax Due:

Sample ID	Client Sample ID	Collection Date	Date Received	Matrix	Test Code	Test Code Comments	Hold	MS	SEL	Storage
B0221-07A	SV1031113	02/06/03 10:55	02/07/03	Soil	SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
					SW8260B_LOW_S		☐	☐	☐	VOA
B0221-07B	SV1031113	02/06/03 10:55	02/07/03	Soil	E415_LK_TOC_S	not included in subcontract	☐	☐	☐	A5
B0221-08A	W0DSS104	02/06/03 11:45	02/07/03	Soil	PMoist		☐	☐	☐	A5
					SW6010B_S	TAL	☐	☐	☑	A5
					SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
					SW9045C_S	not included subcontract	☐	☐	☐	A5
					ASTMD422_S		☐	☐	☐	SUB
B0221-08B	W0DSS104	02/06/03 11:45	02/07/03	Soil	SW8260B_LOW_S		☐	☐	☐	VOA
B0221-08C	W0DSS104	02/06/03 11:45	02/07/03	Soil	PMoist		☐	☐	☐	A5
B0221-09A	SV1041012	02/06/03 12:27	02/07/03	Soil	SW6010B_S	TAL	☐	☐	☑	A5

Client Rep: Benjamin F Dodge

000010

Mitkem Corporation

07/Feb/03 11:28

WorkOrder: B0221

Client ID: TETRA_NAVY
Project: Wallops Island
Location: CTO848
Comments: N/A

Case:
SDG:
PO: MA-01-102B-1298 28-847

Report Level: LEVEL 4
EDD: TTNUS
HC Due: 02/21/03
Fax Due:

Sample ID	Client Sample ID	Collection Date	Date Received	Matrix	Test Code	Test Code Comments	Hold	MS	SEL	Storage
B0221-09A	SV1041012	02/06/03 12:27	02/07/03	Soil	SW7471A	TAL	☐	☐	☐	A5
					SW8082_S		☐	☐	☐	A5
					SW8270C_S		☐	☐	☐	A5
B0221-09B	SV1041012	02/06/03 12:27	02/07/03	Soil	SW8260B_LOW_S		☐	☐	☐	VOA
B0221-10A	RB-020603	02/06/03 14:45	02/07/03	Aqueous	SW8260B_W		☐	☐	☑	M2
B0221-10B	RB-020603	02/06/03 14:45	02/07/03	Aqueous	SW6010B_W	TAL	☐	☐	☐	M2
					SW7470A	TAL	☐	☐	☐	F1
B0221-10C	RB-020603	02/06/03 14:45	02/07/03	Aqueous	SW8082_W		☐	☐	☐	F1
					SW8270C_W					

Client Rep: Benjamin F Dodge

000011

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

March 21, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0221

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO

COMPANY: Tetra Tech NUS
PHONE: 610 491 9688
FAX: 610 491 9645
NAME: Garth Glenn
ADDRESS: 600 Clavic Avenue Suite 3
CITY/ST/ZIP: King of Prussia PA 19406

INVOICE TO

COMPANY: Tetra Tech NUS
PHONE:
FAX:
NAME:
ADDRESS: Foster Plaza VII 661 Andersen Drive
CITY/ST/ZIP: Pittsburgh PA

LAB PROJECT #: B0221
TURNAROUND TIME:

CLIENT PROJECT NAME: NASA WFF
CLIENT PROJECT #: CTO 848
CLIENT P.O.#:

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: HOLD VOA Vial HCl; TCL VOC; Sprum Enteric sample; TCL VOC; 40z Amber Glass; TCL SVOC + PCB; 40z Amber Glass; TAL Metals; 40z Amber Glass pH; TCL VOC + Moisture; 40z Amber Glass; Grain size; 40z Amber Glass; TAL Metals & moisture; 8 oz Amber Glass; TCL SVOC; 1 Liter Amber Glass; TCL PCB; 500 ml Poly HNO3; TAL Metals	COMMENTS
TB-020603	2/6/03 0700		X	X			01	2	2	
WOD-SS-101	2/6/03 0808		X		X		02		3 1 1 1 1	
WOD-SU-101-1315	2/6/03 0840		X		X		03		3 1 1	
WOD-SS-102	2/6/03 0853		X		X		04		3 1 1 1 1 1	
WOD-SB-102-1517	2/6/03 0940		X		X		05		3 1	
WOD-SS-103	2/6/03 0955		X		X		06		3 1 1 1 1	
WOD-SU-103-1113	2/6/03 1055		X		X		07		3 1	
WOD-SS-104	2/6/03 1145		X		X		08		3 1 1 1 1	
WOD-SU-104-1012	2/6/03 1227		X		X		09		3 1	
*12B-020603	2/6/03 1445		X	X			10	*7	X	X X X
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Wanda Mayer	2/6/03 1700	[signature]	2-7-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Shipped Via Federal Express Airbill No 8286 8470 7111

COOLER TEMP: 4c

000013

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

* SEE NOTES ON COC *

MITKEM CORPORATION

Sample Condition Form

Page __ of __

Received By:	Reviewed By:	Date:	MITKEM Project:
NJ	JD	2-7-03	B022

Client Project:

Client: TETRA TECH

1) Cooler Sealed YES / NO*
*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 4°c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 2-7-03

8)Time Received 0900

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B022101					H
02					E
03					E
04					E
05					E
06					E
07					E
08					E
09					E
B022110	C2				H

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

Sample Condition Notification

Mitkem Project#: 2221 **Date of Receipt:** 2-7-03
Client: TETRATECH **Received By:** ME
Client project #/name: NAS 14 WPIF

Unusual Occurance Description:

TIME 1057 TIME 1157
Sample # WOD-SU-103-1113 on 3 bottles WOD-SU-103-1013

No Sample WOD-SU-103-1013 on COC

Client Contacted:

Contacted via: Phone/Fax/E-mail
Date: 2-10-03 **Time:** 9:15
Contacted By: BFO
Name of person contacted: Garth Glenn

Client Response:

Responded via: Phone/Fax/E-mail
Date: 2-10-03
Name of person responding: Garth Glenn
Responding to: BFO

Sample should read WOD-SU-1113

Mitkem Action Taken:

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V1SLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		47	94	48-135
Chloromethane	50		49	98	60-118
Vinyl Chloride	50		46	92	65-113
Bromomethane	50		60	120	73-122
Chloroethane	50		49	98	72-118
Trichlorofluoromethane	50		49	98	68-129
1,1-Dichloroethene	50		48	96	67-121
Acetone	50		45	90	38-161
Carbon Disulfide	50		43	86	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		52	104	71-124
Methyl tert-butyl ether	50		34	68*	75-123
1,1-Dichloroethane	50		51	102	83-116
2-Butanone	50		46	92	64-139
cis-1,2-Dichloroethene	50		52	104	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		50	100	81-122
Carbon Tetrachloride	50		51	102	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		51	102	81-120
Trichloroethene	50		50	100	77-121
1,2-Dichloropropane	50		51	102	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		52	104	78-119
4-Methyl-2-pentanone	50		46	92	57-138
Toluene	50		51	102	81-121
trans-1,3-Dichloroprope	50		51	102	85-118
1,1,2-Trichloroethane	50		49	98	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V1SLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		49	98	73-121
2-Hexanone	50		45	90	53-145
Dibromochloromethane	50		50	100	80-124
1,2-Dibromoethane	50		49	98	80-124
Chlorobenzene	50		50	100	82-118
Ethylbenzene	50		50	100	80-122
Xylene (Total)	150		150	100	81-121
Styrene	50		52	104	77-128
Bromoform	50		48	96	77-130
Isopropylbenzene	50		50	100	58-148
1,1,2,2-Tetrachloroetha	50		47	94	76-125
1,3,5-Trimethylbenzene	50		50	100	76-116
1,2,4-Trimethylbenzene	50		50	100	77-117
1,3-Dichlorobenzene	50		50	100	80-116
1,4-Dichlorobenzene	50		49	98	80-114
1,2-Dichlorobenzene	50		49	98	81-116
1,2-Dibromo-3-chloropro	50		45	90	71-126
1,2,4-Trichlorobenzene	50		49	98	67-114
1,1,2-Trichlo-1,2,2-tri	50		43	86	70-130
Methyl Acetate	50		44	88	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		51	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: V5E3670 BFB Injection Date: 02/07/03

Instrument ID: V5 BFB Injection Time: 0942

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.6
75	30.0 - 60.0% of mass 95	48.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.7
175	5.0 - 9.0% of mass 174	5.9 (7.3)1
176	95.0 - 101.0% of mass 174	79.6 (97.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505K	V5S0207A	V5E3671	02/07/03	1037
02	VSTD2005K	V5S0207C	V5E3673	02/07/03	1147
03	VSTD1005K	V5S0207D	V5E3674	02/07/03	1216
04	VSTD0055K	V5S0207B	V5E3677	02/07/03	1434
05	VSTD0205K	V5S0207E	V5E3678	02/07/03	1509
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.275	0.287	0.289	0.277	0.259	0.277	4.3
Chloromethane	*	0.450	0.448	0.482	0.411	0.452	0.449	5.7*
Vinyl Chloride		0.391	0.415	0.428	0.409	0.406	0.410	3.3
Bromomethane		0.289	0.250	0.236	0.221	0.181	0.235	16.8
Chloroethane		0.208	0.219	0.224	0.205	0.175	0.206	9.1
Trichlorofluoromethane		0.284	0.343	0.354	0.368	0.337	0.337	9.4
1,1-Dichloroethene		0.275	0.293	0.288	0.296	0.290	0.288	2.9
Acetone		0.154	0.123	0.135	0.099	0.084	0.119	23.6
Carbon Disulfide		0.794	0.819	0.844	0.819	0.737	0.803	5.1
Methylene Chloride		0.370	0.416	0.394	0.376	0.364	0.384	5.5
trans-1,2-Dichloroethene		0.282	0.304	0.298	0.309	0.303	0.299	3.5
Methyl tert-butyl ether		0.790	0.850	0.843	0.931	0.816	0.846	6.3
1,1-Dichloroethane	*	0.559	0.590	0.590	0.608	0.607	0.591	3.3*
2-Butanone		0.153	0.183	0.191	0.178	0.155	0.172	9.9
cis-1,2-Dichloroethene		0.299	0.317	0.312	0.328	0.322	0.316	3.5
Chloroform		0.494	0.507	0.521	0.547	0.535	0.521	4.1
1,1,1-Trichloroethane		0.340	0.368	0.346	0.357	0.351	0.352	3.0
Carbon Tetrachloride		0.301	0.344	0.336	0.355	0.354	0.338	6.6
1,2-Dichloroethane		0.340	0.386	0.412	0.408	0.397	0.389	7.5
Benzene		1.203	1.223	1.222	1.294	1.262	1.241	3.0
Trichloroethene		0.298	0.319	0.311	0.336	0.330	0.319	4.7
1,2-Dichloropropane		0.313	0.333	0.347	0.351	0.337	0.336	4.4
Bromodichloromethane		0.338	0.372	0.418	0.417	0.412	0.391	9.1
cis-1,3-Dichloropropene		0.438	0.494	0.556	0.558	0.548	0.519	10.0
4-Methyl-2-pentanone		0.282	0.353	0.344	0.383	0.315	0.335	11.4
Toluene		1.139	1.195	1.208	1.254	1.236	1.206	3.7
trans-1,3-Dichloropropene		0.389	0.436	0.521	0.494	0.489	0.466	11.3
1,1,2-Trichloroethane		0.233	0.247	0.298	0.267	0.259	0.261	9.3
Tetrachloroethene		0.322	0.337	0.323	0.297	0.333	0.322	4.8
2-Hexanone		0.258	0.317	0.288	0.331	0.289	0.297	9.6
Dibromochloromethane		0.348	0.396	0.468	0.386	0.440	0.408	11.6
1,2-Dibromoethane		0.334	0.373	0.414	0.343	0.391	0.371	8.9
Chlorobenzene	*	1.048	1.072	1.176	0.957	1.104	1.071	7.5*
Ethylbenzene		0.509	0.533	0.565	0.490	0.551	0.530	5.7
m,p-Xylene		0.631	0.654	0.716	0.606	0.669	0.655	6.4
o-Xylene		0.595	0.646	0.718	0.603	0.671	0.647	7.8
Xylene (Total)		0.619	0.651	0.717	0.605	0.670	0.652	6.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene	0.963	1.072	1.273	1.048	1.143	1.100	10.6
Bromoform *	0.220	0.260	0.346	0.270	0.305	0.280	17.0*
Isopropylbenzene	1.491	1.591	1.801	1.522	1.707	1.622	8.0
1,1,2,2-Tetrachloroethane *	1.001	1.076	1.337	0.835	1.016	1.053	17.3*
1,3,5-Trimethylbenzene	2.785	2.848	3.316	2.309	2.835	2.819	12.7
1,2,4-Trimethylbenzene	2.811	2.821	3.415	2.382	2.886	2.863	12.9
1,3-Dichlorobenzene	1.608	1.645	1.960	1.396	1.698	1.661	12.2
1,4-Dichlorobenzene	1.661	1.657	1.973	1.416	1.706	1.683	11.8
1,2-Dichlorobenzene	1.524	1.538	1.919	1.322	1.569	1.574	13.7
1,2-Dibromo-3-chloropropane	0.117	0.155	0.210	0.136	0.170	0.158	22.3
1,2,4-Trichlorobenzene	0.667	0.779	1.062	0.823	1.013	0.869	19.0
1,1,2-Trichlo-1,2,2-trifluor	0.211	0.283	0.249	0.251	0.216	0.242	12.1
Methyl Acetate	0.286	0.327	0.327	0.320	0.275	0.307	7.9
Cyclohexane	0.486	0.515	0.507	0.510	0.462	0.496	4.4
Methylcyclohexane	0.462	0.508	0.489	0.521	0.462	0.488	5.5
Dibromofluoromethane	0.278	0.289	0.273	0.313	0.298	0.290	5.4
1,2-Dichloroethane-d4	0.048	0.061	0.057	0.065	0.061	0.058	10.7
Toluene-d8	1.208	1.229	1.117	1.133	1.253	1.188	5.0
Bromofluorobenzene	0.479	0.503	0.465	0.481	0.523	0.490	4.7

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: V5E3830 BFB Injection Date: 02/12/03

Instrument ID: V5 BFB Injection Time: 1108

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.6
75	30.0 - 60.0% of mass 95	44.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	87.4
175	5.0 - 9.0% of mass 174	6.1 (7.0)1
176	95.0 - 101.0% of mass 174	85.6 (97.9)1
177	5.0 - 9.0% of mass 176	5.5 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505T	V5S0212A	V5E3831	02/12/03	1125
02	VBLK5T	V5B0212A	V5E3832	02/12/03	1201
03	V5TLCS	V5L0212A	V5E3833	02/12/03	1233
04	V5TLCSD	V5L0212B	V5E3834	02/12/03	1303
05	W0DSS101	B0221-02C	V5E3842	02/12/03	1722
06	SV1011315	B0221-03B	V5E3843	02/12/03	1751
07	W0DSS102	B0221-04C	V5E3844	02/12/03	1820
08	SV1021517	B0221-05B	V5E3845	02/12/03	1849
09	W0DSS103	B0221-06C	V5E3846	02/12/03	1918
10	W0DSS104	B0221-08C	V5E3848	02/12/03	2017
11	SV1041012	B0221-09B	V5E3849	02/12/03	2046
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date: 02/12/03 Time: 1125

Lab File ID: V5E3831 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.277	0.233	0.01	15.9	20.0	
Chloromethane	0.449	0.365	0.1	18.7	20.0	
Vinyl Chloride	0.410	0.349	0.01	14.9	20.0	
Bromomethane	0.235	0.220	0.01	6.4	20.0	
Chloroethane	0.206	0.184	0.01	10.7	20.0	
Trichlorofluoromethane	0.337	0.296	0.01	12.2	20.0	
1,1-Dichloroethene	0.288	0.256	0.01	11.1	20.0	
Acetone	0.119	0.092	0.01	22.7	20.0	<-
Carbon Disulfide	0.803	0.731	0.01	9.0	20.0	
Methylene Chloride	0.384	0.356	0.01	7.3	20.0	
trans-1,2-Dichloroethene	0.299	0.277	0.01	7.4	20.0	
Methyl tert-butyl ether	0.846	0.820	0.01	3.1	20.0	
1,1-Dichloroethane	0.591	0.509	0.1	13.9	20.0	
2-Butanone	0.172	0.160	0.01	7.0	20.0	
cis-1,2-Dichloroethene	0.316	0.295	0.01	6.6	20.0	
Chloroform	0.521	0.477	0.01	8.4	20.0	
1,1,1-Trichloroethane	0.352	0.302	0.01	14.2	20.0	
Carbon Tetrachloride	0.338	0.299	0.01	11.5	20.0	
1,2-Dichloroethane	0.389	0.336	0.01	13.6	20.0	
Benzene	1.241	1.147	0.01	7.6	20.0	
Trichloroethene	0.319	0.310	0.01	2.8	20.0	
1,2-Dichloropropane	0.336	0.299	0.01	11.0	20.0	
Bromodichloromethane	0.391	0.364	0.01	6.9	20.0	
cis-1,3-Dichloropropene	0.519	0.489	0.01	5.8	20.0	
4-Methyl-2-pentanone	0.335	0.314	0.01	6.3	20.0	
Toluene	1.206	1.132	0.01	6.1	20.0	
trans-1,3-Dichloropropene	0.466	0.443	0.01	4.9	20.0	
1,1,2-Trichloroethane	0.261	0.248	0.01	5.0	20.0	
Tetrachloroethene	0.322	0.301	0.01	6.5	20.0	
2-Hexanone	0.297	0.289	0.01	2.7	20.0	
Dibromochloromethane	0.408	0.408	0.01	0.0	20.0	
1,2-Dibromoethane	0.371	0.354	0.01	4.6	20.0	
Chlorobenzene	1.071	1.006	0.3	6.1	20.0	
Ethylbenzene	0.530	0.502	0.01	5.3	20.0	
m,p-Xylene	0.655	0.609	0.01	7.0	20.0	
o-Xylene	0.647	0.615	0.01	4.9	20.0	
Xylene (Total)	0.652	0.611	0.01	6.3	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date: 02/12/03 Time: 1125

Lab File ID: V5E3831 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.070	0.01	2.7	20.0
Bromoform	0.280	0.296	0.1	5.7	20.0
Isopropylbenzene	1.622	1.510	0.01	6.9	20.0
1,1,2,2-Tetrachloroethane	1.053	1.051	0.3	0.2	20.0
1,3,5-Trimethylbenzene	2.819	2.552	0.01	9.5	20.0
1,2,4-Trimethylbenzene	2.863	2.636	0.01	7.9	20.0
1,3-Dichlorobenzene	1.661	1.641	0.01	1.2	20.0
1,4-Dichlorobenzene	1.683	1.658	0.01	1.5	20.0
1,2-Dichlorobenzene	1.574	1.586	0.01	0.8	20.0
1,2-Dibromo-3-chloropropane	0.158	0.171	0.01	8.2	20.0
1,2,4-Trichlorobenzene	0.869	0.959	0.01	10.4	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.216	0.01	10.7	20.0
Methyl Acetate	0.307	0.277	0.01	9.8	20.0
Cyclohexane	0.496	0.419	0.01	15.5	20.0
Methylcyclohexane	0.488	0.463	0.01	5.1	20.0
Dibromofluoromethane	0.290	0.287	0.01	1.0	20.0
1,2-Dichloroethane-d4	0.058	0.063	0.01	8.6	20.0
Toluene-d8	1.188	1.174	0.01	1.2	20.0
Bromofluorobenzene	0.490	0.487	0.01	0.6	20.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3832

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3832

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3832

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.98	6	NJ
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FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5TLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		40	80	63-120
Vinyl Chloride	50		42	84	61-134
Bromomethane	50		45	90	10-215
Chloroethane	50		44	88	55-146
Trichlorofluoromethane	50		45	90	63-126
1,1-Dichloroethene	50		43	86	67-127
Acetone	50		37	74	0-154
Carbon Disulfide	50		44	88	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		45	90	76-120
Methyl tert-butyl ether	50		48	96	52-130
1,1-Dichloroethane	50		42	84	74-118
2-Butanone	50		44	88	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		44	88	77-120
1,1,1-Trichloroethane	50		42	84	72-126
Carbon Tetrachloride	50		44	88	69-135
1,2-Dichloroethane	50		41	82	65-126
Benzene	50		45	90	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		42	84	78-117
Bromodichloromethane	50		45	90	75-118
cis-1,3-Dichloropropene	50		44	88	78-120
4-Methyl-2-pentanone	50		44	88	45-141
Toluene	50		45	90	80-126
trans-1,3-Dichloroprope	50		44	88	73-123
1,1,2-Trichloroethane	50		44	88	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5TLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		46	92	37-136
Dibromochloromethane	50		46	92	76-115
1,2-Dibromoethane	50		46	92	72-117
Chlorobenzene	50		45	90	78-117
Ethylbenzene	50		46	92	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		48	96	67-126
Isopropylbenzene	50		45	90	80-135
1,1,2,2-Tetrachloroetha	50		43	86	70-117
1,3,5-Trimethylbenzene	50		43	86	72-133
1,2,4-Trimethylbenzene	50		43	86	73-126
1,3-Dichlorobenzene	50		46	92	75-115
1,4-Dichlorobenzene	50		46	92	72-110
1,2-Dichlorobenzene	50		46	92	78-113
1,2-Dibromo-3-chloropro	50		43	86	52-128
1,2,4-Trichlorobenzene	50		46	92	49-126
1,1,2-Trichlo-1,2,2-tri	50		43	86	70-130
Methyl Acetate	50		45	90	70-130
Cyclohexane	50		42	84	70-130
Methylcyclohexane	50		46	92	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5TLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	43	86	2	40	58-131
Chloromethane	50	40	80	0	40	63-120
Vinyl Chloride	50	42	84	0	40	61-134
Bromomethane	50	44	88	2	40	10-215
Chloroethane	50	44	88	0	40	55-146
Trichlorofluoromethane	50	46	92	2	40	63-126
1,1-Dichloroethene	50	43	86	0	40	67-127
Acetone	50	36	72	3	40	0-154
Carbon Disulfide	50	45	90	2	40	63-126
Methylene Chloride	50	43	86	4	40	62-128
trans-1,2-Dichloroethen	50	45	90	0	40	76-120
Methyl tert-butyl ether	50	49	98	2	40	52-130
1,1-Dichloroethane	50	42	84	0	40	74-118
2-Butanone	50	46	92	4	40	14-154
cis-1,2-Dichloroethene	50	47	94	2	40	83-115
Chloroform	50	44	88	0	40	77-120
1,1,1-Trichloroethane	50	43	86	2	40	72-126
Carbon Tetrachloride	50	44	88	0	40	69-135
1,2-Dichloroethane	50	42	84	2	40	65-126
Benzene	50	45	90	0	40	78-121
Trichloroethene	50	48	96	2	40	75-125
1,2-Dichloropropane	50	43	86	2	40	78-117
Bromodichloromethane	50	44	88	2	40	75-118
cis-1,3-Dichloropropene	50	46	92	4	40	78-120
4-Methyl-2-pentanone	50	47	94	6	40	45-141
Toluene	50	46	92	2	40	80-126
trans-1,3-Dichloroprope	50	45	90	2	40	73-123
1,1,2-Trichloroethane	50	45	90	2	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5TLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	46	92	0	40	65-134
2-Hexanone	50	51	102	10	40	37-136
Dibromochloromethane	50	48	96	4	40	76-115
1,2-Dibromoethane	50	47	94	2	40	72-117
Chlorobenzene	50	46	92	2	40	78-117
Ethylbenzene	50	47	94	2	40	79-129
Xylene (Total)	150	140	93	0	40	83-125
Styrene	50	47	94	2	40	83-122
Bromoform	50	49	98	2	40	67-126
Isopropylbenzene	50	46	92	2	40	80-135
1,1,2,2-Tetrachloroetha	50	44	88	2	40	70-117
1,3,5-Trimethylbenzene	50	44	88	2	40	72-133
1,2,4-Trimethylbenzene	50	45	90	4	40	73-126
1,3-Dichlorobenzene	50	47	94	2	40	75-115
1,4-Dichlorobenzene	50	47	94	2	40	72-110
1,2-Dichlorobenzene	50	48	96	4	40	78-113
1,2-Dibromo-3-chloropro	50	45	90	4	40	52-128
1,2,4-Trichlorobenzene	50	50	100	8	40	49-126
1,1,2-Trichlo-1,2,2-tri	50	46	92	7	40	70-130
Methyl Acetate	50	46	92	2	40	70-130
Cyclohexane	50	43	86	2	40	70-130
Methylcyclohexane	50	48	96	4	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: V5E3890 BFB Injection Date: 02/14/03

Instrument ID: V5 BFB Injection Time: 0933

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.3
75	30.0 - 60.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.6
175	5.0 - 9.0% of mass 174	5.6 (6.9)1
176	95.0 - 101.0% of mass 174	78.7 (96.5)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505V	V5S0214A	V5E3891	02/14/03	0950
02	VBLK5V	V5B0214A	V5E3892	02/14/03	1021
03	V5VLCS	V5L0214A	V5E3893	02/14/03	1054
04	SV1031113	B0211-07B	V5E3897	02/14/03	1252
05	SV1041012RE	B0211-09BRE	V5E3898	02/14/03	1321
06					
07					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date: 02/14/03 Time: 0950

Lab File ID: V5E3891 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.254	0.01	8.3	20.0
Chloromethane	0.449	0.426	0.1	5.1	20.0
Vinyl Chloride	0.410	0.390	0.01	4.9	20.0
Bromomethane	0.235	0.226	0.01	3.8	20.0
Chloroethane	0.206	0.210	0.01	1.9	20.0
Trichlorofluoromethane	0.337	0.356	0.01	5.6	20.0
1,1-Dichloroethene	0.288	0.265	0.01	8.0	20.0
Acetone	0.119	0.112	0.01	5.9	20.0
Carbon Disulfide	0.803	0.853	0.01	6.2	20.0
Methylene Chloride	0.384	0.356	0.01	7.3	20.0
trans-1,2-Dichloroethene	0.299	0.277	0.01	7.4	20.0
Methyl tert-butyl ether	0.846	0.818	0.01	3.3	20.0
1,1-Dichloroethane	0.591	0.526	0.1	11.0	20.0
2-Butanone	0.172	0.179	0.01	4.1	20.0
cis-1,2-Dichloroethene	0.316	0.289	0.01	8.5	20.0
Chloroform	0.521	0.469	0.01	10.0	20.0
1,1,1-Trichloroethane	0.352	0.324	0.01	8.0	20.0
Carbon Tetrachloride	0.338	0.304	0.01	10.0	20.0
1,2-Dichloroethane	0.389	0.356	0.01	8.5	20.0
Benzene	1.241	1.125	0.01	9.3	20.0
Trichloroethene	0.319	0.292	0.01	8.5	20.0
1,2-Dichloropropane	0.336	0.305	0.01	9.2	20.0
Bromodichloromethane	0.391	0.358	0.01	8.4	20.0
cis-1,3-Dichloropropene	0.519	0.486	0.01	6.4	20.0
4-Methyl-2-pentanone	0.335	0.345	0.01	3.0	20.0
Toluene	1.206	1.113	0.01	7.7	20.0
trans-1,3-Dichloropropene	0.466	0.433	0.01	7.1	20.0
1,1,2-Trichloroethane	0.261	0.236	0.01	9.6	20.0
Tetrachloroethene	0.322	0.282	0.01	12.4	20.0
2-Hexanone	0.297	0.312	0.01	5.0	20.0
Dibromochloromethane	0.408	0.384	0.01	5.9	20.0
1,2-Dibromoethane	0.371	0.350	0.01	5.7	20.0
Chlorobenzene	1.071	0.989	0.3	7.6	20.0
Ethylbenzene	0.530	0.487	0.01	8.1	20.0
m,p-Xylene	0.655	0.612	0.01	6.6	20.0
o-Xylene	0.647	0.604	0.01	6.6	20.0
Xylene (Total)	0.652	0.610	0.01	6.4	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: V5 Calibration Date: 02/14/03 Time: 0950

Lab File ID: V5E3891 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.050	0.01	4.5	20.0
Bromoform	0.280	0.263	0.1	6.1	20.0
Isopropylbenzene	1.622	1.501	0.01	7.4	20.0
1,1,2,2-Tetrachloroethane	1.053	0.990	0.3	6.0	20.0
1,3,5-Trimethylbenzene	2.819	2.596	0.01	7.9	20.0
1,2,4-Trimethylbenzene	2.863	2.675	0.01	6.6	20.0
1,3-Dichlorobenzene	1.661	1.528	0.01	8.0	20.0
1,4-Dichlorobenzene	1.683	1.536	0.01	8.7	20.0
1,2-Dichlorobenzene	1.574	1.458	0.01	7.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.148	0.01	6.3	20.0
1,2,4-Trichlorobenzene	0.869	0.816	0.01	6.1	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.246	0.01	1.6	20.0
Methyl Acetate	0.307	0.313	0.01	2.0	20.0
Cyclohexane	0.496	0.491	0.01	1.0	20.0
Methylcyclohexane	0.488	0.473	0.01	3.1	20.0
Dibromofluoromethane	0.290	0.282	0.01	2.8	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.01	3.4	20.0
Toluene-d8	1.188	1.163	0.01	2.1	20.0
Bromofluorobenzene	0.490	0.493	0.01	0.6	20.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	12	NJ
2.					
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FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5VLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		44	88	58-131
Chloromethane	50		46	92	63-120
Vinyl Chloride	50		48	96	61-134
Bromomethane	50		47	94	10-215
Chloroethane	50		50	100	55-146
Trichlorofluoromethane	50		49	98	63-126
1,1-Dichloroethene	50		45	90	67-127
Acetone	50		40	80	0-154
Carbon Disulfide	50		50	100	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		50	100	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		48	96	14-154
cis-1,2-Dichloroethene	50		47	94	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		44	88	72-126
Carbon Tetrachloride	50		44	88	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		45	90	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		45	90	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		45	90	73-123
1,1,2-Trichloroethane	50		44	88	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: V5VLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		45	90	65-134
2-Hexanone	50		51	102	37-136
Dibromochloromethane	50		47	94	76-115
1,2-Dibromoethane	50		47	94	72-117
Chlorobenzene	50		47	94	78-117
Ethylbenzene	50		47	94	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		48	96	83-122
Bromoform	50		47	94	67-126
Isopropylbenzene	50		46	92	80-135
1,1,2,2-Tetrachloroetha	50		46	92	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		46	92	73-126
1,3-Dichlorobenzene	50		47	94	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		47	94	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		51	102	70-130
Methyl Acetate	50		49	98	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		50	100	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID (Standard): V5E3891 Date Analyzed: 02/14/03

Instrument ID: V5 Time Analyzed: 0950

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	905820	6.25	698497	9.47	368112	12.21
	UPPER LIMIT	1811640	6.75	1396994	9.97	736224	12.71
	LOWER LIMIT	452910	5.75	349249	8.97	184056	11.71
	EPA SAMPLE NO.						
01	VBLK5V	940256	6.25	711882	9.47	326455	12.21
02	V5VLCS	871829	6.25	658759	9.47	347757	12.22
03	SV1031113	812109	6.25	641750	9.48	288877	12.21
04	SV1041012RE	32180*	6.25	15306*	9.47	2644*	12.22
05							
06							
07							
08							
09							
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12							
13							
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17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID (Standard): V5E3831 Date Analyzed: 02/12/03

Instrument ID: V5 Time Analyzed: 1125

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	876660	6.25	693751	9.47	375564	12.21
	UPPER LIMIT	1753320	6.75	1387502	9.97	751128	12.71
	LOWER LIMIT	438330	5.75	346876	8.97	187782	11.71
	EPA SAMPLE NO.						
01	VBLK5T	935889	6.25	724834	9.47	357326	12.22
02	V5TLCS	908895	6.26	710368	9.48	385067	12.21
03	V5TLCSD	914109	6.25	715662	9.47	390057	12.22
04	W0DSS101	836409	6.25	592767	9.47	197922	12.22
05	SV1011315	844768	6.25	678240	9.47	318012	12.22
06	W0DSS102	812115	6.25	589527	9.48	218012	12.21
07	SV1021517	802708	6.26	554145	9.48	233340	12.21
08	W0DSS103	383796*	6.25	260507*	9.47	85544*	12.21
09	W0DSS104	730793	6.25	469669	9.47	140902*	12.22
10	SV1041012	124833*	6.25	77265*	9.47	17161*	12.21
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5T	95	104	99	112	0
02	V5TLCS	96	103	96	99	0
03	V5TLCSD	96	103	98	97	0
04	W0DSS101	108	123	108	87	0
05	SV1011315	103	119	97	98	0
06	W0DSS102	105	117	104	91	0
07	SV1021517	104	116	104	113	0
08	W0DSS103	100	112	110	85	0
09	W0DSS104	102	116	113	79	0
10	SV1041012	83	91	113	70	0
11	VBLK5V	100	105	101	101	0
12	V5VLCS	95	100	98	101	0
13	SV1031113	105	121	99	101	0
14	SV1041012RE	64	109	140	39*	1
15						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0221	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 1-May-03

Sample WOD-SV-102-1517 1,3,5-Trimethylbenzene = 93 ug/kg

$$1,3,5\text{-trimethylbenzene} = \frac{(1103110)(50\ ng/\mu L)(5\ mL)}{(233340)(2.819)(4.7\ g)(0.96)} = 92.9\ ng/g = ug/kg$$

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3845

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 4 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	13	
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	8	BJ
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	3	J
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1021517

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3845

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: not dec. 4 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	J
95-47-6	o-Xylene	9	J
1330-20-7	Xylene (Total)	20	
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	93	
95-63-6	1,2,4-Trimethylbenzene	42	
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030212.B\V5E3845.D
Report Date: 26-Feb-2003 09:45

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030212.B\V5E3845.D
Lab Smp Id: B0221-05B Client Smp ID: SV1021517
Inj Date : 12-FEB-2003 18:49
Operator : AN Inst ID: v5.i
Smp Info : TETRA,B0221-05B,SV1021517,V2B0212A,,B0221
Misc Info : 07-FEB-03,,,,,,,4.7,,4
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030212.B\v58260H.m
Meth Date : 25-Feb-2003 16:41 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	4.700	Weight of sample (g)
M	4.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
	5 Chloroethane	64	2.571	2.581	(0.411)	39053	11.8009	13
	9 Acetone	43	3.399	3.399	(0.543)	26290	13.7421	15
	14 Methylene Chloride	84	3.842	3.842	(0.614)	42348	6.86658	8(a)
$	30 Dibromofluoromethane	113	5.575	5.575	(0.891)	241858	51.8910	58
$	35 1,2-Dichloroethane-d4	102	5.910	5.910	(0.945)	54683	58.2051	64
*	38 Fluorobenzene	96	6.255	6.245	(1.000)	802708	50.0000	
$	47 Toluene-d8	98	7.880	7.880	(0.832)	685275	52.0415	58
	53 Tetrachloroethene	164	8.560	8.560	(0.903)	9148	2.55857	3(aQ)
*	57 Chlorobenzene-d5	117	9.476	9.466	(1.000)	554145	50.0000	
	61 m,p-Xylene	106	9.752	9.761	(1.029)	68749	9.46503	10(a)
	62 o-Xylene	106	10.215	10.215	(1.078)	59295	8.27562	9(a)
$	68 Bromofluorobenzene	95	10.825	10.825	(1.142)	306783	56.4688	62
	74 1,3,5-Trimethylbenzene	105	11.347	11.347	(0.929)	1103110	83.8630	93
	77 1,2,4-Trimethylbenzene	105	11.800	11.790	(0.966)	510463	38.2040	42
*	81 1,4-Dichlorobenzene-d4	152	12.214	12.214	(1.000)	233340	50.0000	(Q)

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D1732 DFTPP Injection Date: 02/14/03

Instrument ID: S2 DFTPP Injection Time: 1250

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	46.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	22.7
365	Greater than 1.0% of mass 198	2.49
441	Present, but less than mass 443	12.2
442	40.0 - 99.9% of mass 198	73.1
443	17.0 - 23.0% of mass 442	14.2 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502L	SS0214A	S2D1733	02/14/03	1311
02	SSTD1602L	SS0214B	S2D1734	02/14/03	1358
03	SSTD0102L	SS0214C	S2D1735	02/14/03	1441
04	SSTD0202L	SS0214D	S2D1736	02/14/03	1527
05	SSTD0802L	SS0214E	S2D1737	02/14/03	1614
06	SSTD1202L	SS0214F	S2D1738	02/14/03	1658
07					
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF160=S2D1734

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.662					1.728	3.1*
bis(2-Chloroethyl)Ether	* 1.245					1.317	5.5*
2-Chlorophenol	* 1.243					1.310	4.3*
1,3-Dichlorobenzene	* 1.265					1.349	5.3*
1,4-Dichlorobenzene	* 1.309					1.416	5.8*
1,2-Dichlorobenzene	* 1.169					1.276	6.2*
2-Methylphenol	* 1.068					1.172	6.2*
2,2'-oxybis(1-Chloropropane)	* 1.731					1.869	7.3*
4-Methylphenol	* 1.176					1.228	4.6*
N-Nitroso-di-n-propylamine	* 0.468					0.714	20.1*
Hexachloroethane	* 0.483					0.517	5.3*
Nitrobenzene	* 0.398					0.405	3.6*
Isophorone	* 0.693					0.707	2.7*
2-Nitrophenol	* 0.233					0.231	2.6*
2,4-Dimethylphenol	* 0.363					0.348	4.1*
2,4-Dichlorophenol	* 0.304					0.311	2.3*
1,2,4-Trichlorobenzene	* 0.310					0.318	3.5*
Naphthalene	* 0.956					1.021	5.0*
4-Chloroaniline	* 0.393					0.404	5.2*
bis(2-Chloroethoxy)methane	* 0.434					0.448	4.0*
Hexachlorobutadiene	* 0.159					0.166	3.3*
4-Chloro-3-Methylphenol	* 0.330					0.329	2.6*
2-Methylnaphthalene	* 0.644					0.689	4.8*
Hexachlorocyclopentadiene	* 0.274					0.234	22.1*
2,4,6-Trichlorophenol	* 0.391					0.380	3.6*
2,4,5-Trichlorophenol	* 0.398					0.422	4.1*
2-Chloronaphthalene	* 1.102					1.124	3.1*
2-Nitroaniline	* 0.387					0.389	2.5*
Dimethylphthalate	* 1.320					1.365	2.7*
Acenaphthylene	* 1.750					1.832	4.1*
2,6-Dinitrotoluene	* 0.354					0.354	3.1*
3-Nitroaniline	* 0.362					0.371	2.6*
Acenaphthene	* 1.063					1.119	4.2*
2,4-Dinitrophenol	* 0.173					0.139	47.2*
4-Nitrophenol	* 0.159					0.159	6.7*
Dibenzofuran	* 1.510					1.604	4.3*
2,4-Dinitrotoluene	* 0.409					0.438	5.0*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF160=S2D1734

COMPOUND	RRF160								$\overline{RRF}$	% RSD
Diethylphthalate	*	1.229							1.321	4.6*
4-Chlorophenyl-phenylether	*	0.530							0.588	6.1*
Fluorene	*	1.070							1.212	7.7*
4-Nitroaniline	*	0.337							0.365	6.7*
4,6-Dinitro-2-methylphenol	*	0.171							0.146	27.0*
N-Nitrosodiphenylamine (1)	*	0.561							0.549	2.7*
4-Bromophenyl-phenylether	*	0.226							0.224	2.6*
Hexachlorobenzene	*	0.233							0.234	2.6*
Pentachlorophenol	*	0.148							0.124	24.2*
Phenanthrene	*	1.020							1.046	3.9*
Anthracene	*	1.012							1.046	5.2*
Carbazole	*	0.902							0.921	4.7*
Di-n-butylphthalate	*	1.268							1.364	5.5*
Fluoranthene	*	1.022							1.079	4.5*
Pyrene	*	1.223							1.273	4.9*
Butylbenzylphthalate	*	0.643							0.652	2.9*
3,3'-Dichlorobenzidine	*	0.432							0.426	3.4*
Benzo(a)anthracene	*	1.078							1.094	3.9*
Chrysene	*	0.955							0.982	3.7*
bis(2-Ethylhexyl)phthalate	*	0.854							0.899	4.5*
Di-n-octylphthalate	*	2.176							2.313	5.3*
Benzo(b)fluoranthene	*	1.612							1.596	1.7*
Benzo(k)fluoranthene	*	1.368							1.401	4.9*
Benzo(a)pyrene	*	1.411							1.398	3.3*
Indeno(1,2,3-cd)pyrene	*	1.547							1.502	4.8*
Dibenzo(a,h)anthracene	*	1.451							1.389	3.9*
Benzo(g,h,i)perylene	*	1.439							1.373	4.0*
Nitrobenzene-d5		0.418							0.418	2.7*
2-Fluorobiphenyl	*	1.281							1.317	3.2*
Terphenyl-d14	*	0.836							0.864	3.5*
Phenol-d5	*	1.538							1.578	2.7*
2-Fluorophenol	*	1.204							1.225	3.6*
2,4,6-Tribromophenol	*	0.116							0.113	3.4*
2-Chlorophenol-d4	*	1.259							1.284	3.2*
1,2-Dichlorobenzene-d4	*	0.777							0.826	4.4*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D1906 DFTPP Injection Date: 02/19/03

Instrument ID: S2 DFTPP Injection Time: 1410

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	49.0
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	44.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	23.4
365	Greater than 1.0% of mass 198	2.65
441	Present, but less than mass 443	4.6
442	40.0 - 99.9% of mass 198	71.7
443	17.0 - 23.0% of mass 442	13.7 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502U	SS0219B	S2D1907	02/19/03	1431
02	SBLK2R	MB-5612	S2D1908	02/19/03	1514
03	S2RLCS	LCS-5612	S2D1909	02/19/03	1557
04	S2RLCSD	LCSD-5612	S2D1910	02/19/03	1640
05	RB-020603	B0221-10C	S2D1912	02/19/03	1804
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 02/19/03 Time: 1431

Lab File ID: S2D1907 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.728	1.841	0.050	6.5	20.0
bis(2-Chloroethyl)Ether	1.317	1.327	0.050	0.8	100
2-Chlorophenol	1.310	1.374	0.050	4.9	100
1,3-Dichlorobenzene	1.349	1.417	0.050	5.0	100
1,4-Dichlorobenzene	1.416	1.498	0.050	5.8	20.0
1,2-Dichlorobenzene	1.276	1.361	0.050	6.7	100
2-Methylphenol	1.172	1.264	0.050	7.8	100
2,2'-oxybis(1-Chloropropane)	1.869	1.775	0.050	-5.0	100
4-Methylphenol	1.228	1.319	0.050	7.4	100
N-Nitroso-di-n-propylamine	0.714	0.755	0.050	5.7	100
Hexachloroethane	0.517	0.538	0.050	4.1	100
Nitrobenzene	0.405	0.422	0.050	4.2	100
Isophorone	0.707	0.734	0.050	3.8	100
2-Nitrophenol	0.231	0.240	0.050	3.9	20.0
2,4-Dimethylphenol	0.348	0.365	0.050	4.9	100
2,4-Dichlorophenol	0.311	0.337	0.050	8.4	20.0
1,2,4-Trichlorobenzene	0.318	0.341	0.050	7.2	100
Naphthalene	1.021	1.096	0.050	7.3	100
4-Chloroaniline	0.404	0.413	0.050	2.2	100
bis(2-Chloroethoxy)methane	0.448	0.450	0.050	0.4	100
Hexachlorobutadiene	0.166	0.186	0.050	12.0	20.0
4-Chloro-3-Methylphenol	0.329	0.370	0.050	12.5	20.0
2-Methylnaphthalene	0.689	0.761	0.050	10.4	100
Hexachlorocyclopentadiene	0.234	0.093	0.050	-60.2	100
2,4,6-Trichlorophenol	0.380	0.396	0.050	4.2	100
2,4,5-Trichlorophenol	0.422	0.441	0.050	4.5	100
2-Chloronaphthalene	1.124	1.151	0.050	2.4	100
2-Nitroaniline	0.389	0.395	0.050	1.5	100
Dimethylphthalate	1.365	1.469	0.050	7.6	100
Acenaphthylene	1.832	1.872	0.050	2.2	100
2,6-Dinitrotoluene	0.354	0.376	0.050	6.2	100
3-Nitroaniline	0.371	0.374	0.050	0.8	100
Acenaphthene	1.119	1.170	0.050	4.6	20.0
2,4-Dinitrophenol	0.139	0.179	0.050	28.8	100
4-Nitrophenol	0.159	0.199	0.050	25.2	100
Dibenzofuran	1.604	1.730	0.050	7.8	100
2,4-Dinitrotoluene	0.438	0.503	0.050	14.8	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 02/19/03 Time: 1431

Lab File ID: S2D1907 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.321	1.456	0.050	10.2	100
4-Chlorophenyl-phenylether	0.588	0.670	0.050	13.9	100
Fluorene	1.212	1.383	0.050	14.1	100
4-Nitroaniline	0.365	0.368	0.050	0.8	100
4,6-Dinitro-2-methylphenol	0.146	0.162	0.050	11.0	100
N-Nitrosodiphenylamine(1)	0.549	0.545	0.050	-0.7	20.0
4-Bromophenyl-phenylether	0.224	0.228	0.050	1.8	100
Hexachlorobenzene	0.234	0.248	0.050	6.0	100
Pentachlorophenol	0.124	0.133	0.050	7.2	20.0
Phenanthrene	1.046	1.100	0.050	5.2	100
Anthracene	1.046	1.098	0.050	5.0	100
Carbazole	0.921	0.963	0.050	4.6	100
Di-n-butylphthalate	1.364	1.471	0.050	7.8	100
Fluoranthene	1.079	1.242	0.050	15.1	20.0
Pyrene	1.273	1.240	0.050	-2.6	100
Butylbenzylphthalate	0.652	0.633	0.050	-2.9	100
3,3'-Dichlorobenzidine	0.426	0.431	0.050	1.2	100
Benzo(a)anthracene	1.094	1.152	0.050	5.3	100
Chrysene	0.982	1.042	0.050	6.1	100
bis(2-Ethylhexyl)phthalate	0.899	0.918	0.050	2.1	100
Di-n-octylphthalate	2.313	2.565	0.050	10.9	20.0
Benzo(b)fluoranthene	1.596	1.842	0.050	15.4	100
Benzo(k)fluoranthene	1.401	1.605	0.050	14.6	100
Benzo(a)pyrene	1.398	1.638	0.050	17.2	20.0
Indeno(1,2,3-cd)pyrene	1.502	1.745	0.050	16.2	100
Dibenzo(a,h)anthracene	1.389	1.673	0.050	20.4	100
Benzo(g,h,i)perylene	1.373	1.616	0.050	17.7	100
Nitrobenzene-d5	0.418	0.434	0.050	3.8	100
2-Fluorobiphenyl	1.317	1.361	0.050	3.3	100
Terphenyl-d14	0.864	0.853	0.050	-1.3	100
Phenol-d5	1.578	1.631	0.050	3.4	100
2-Fluorophenol	1.225	1.216	0.050	-0.7	100
2,4,6-Tribromophenol	0.113	0.120	0.050	6.2	100
2-Chlorophenol-d4	1.284	1.364	0.050	6.2	100
1,2-Dichlorobenzene-d4	0.826	0.885	0.050	7.1	100

(1) Cannot be separated from Diphenylamine

All other compounds must meet a minimum RRF of 0.010.

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		7	28	0-127
bis(2-Chloroethyl)Ether	25		17	68	46-109
2-Chlorophenol	25		17	68	22-117
1,3-Dichlorobenzene	25		17	68	28-103
1,4-Dichlorobenzene	25		17	68	28-104
1,2-Dichlorobenzene	25		18	72	29-107
2-Methylphenol	25		14	56	40-104
2,2'-oxybis(1-Chloropro	25		16	64	10-134
4-Methylphenol	25		14	56	35-106
N-Nitroso-di-n-prop.(1)	25		22	88	44-122
Hexachloroethane	25		17	68	24-104
Nitrobenzene	25		18	72	47-112
Isophorone	25		20	80	48-118
2-Nitrophenol	25		18	72	29-122
2,4-Dimethylphenol	25		9	36	14-109
2,4-Dichlorophenol	25		19	76	31-122
1,2,4-Trichlorobenzene	25		18	72	33-108
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		6	24	0-152
bis(2-Chloroethoxy)meth	25		19	76	49-112
Hexachlorobutadiene	25		18	72	28-109
4-Chloro-3-Methylphenol	25		20	80	48-117
2-Methylnaphthalene	25		19	76	43-113
Hexachlorocyclopentadie	25		10	40	34-103
2,4,6-Trichlorophenol	25		18	72	34-127
2,4,5-Trichlorophenol	25		19	76	32-131
2-Chloronaphthalene	25		19	76	47-116
2-Nitroaniline	25		20	80	51-120

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	25		22	88	53-124
Acenaphthylene	25		20	80	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		19	76	47-115
Acenaphthene	25		20	80	50-121
2,4-Dinitrophenol	25		14	56	0-144
4-Nitrophenol	25		9	36	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		24	96	52-126
Diethylphthalate	25		23	92	53-126
4-Chlorophenyl-phenylet	25		22	88	50-124
Fluorene	25		22	88	52-125
4-Nitroaniline	25		20	80	47-117
4,6-Dinitro-2-methylphe	25		20	80	3-151
N-Nitrosodiphenylamine	25		24	96	50-150
4-Bromophenyl-phenyleth	25		20	80	51-124
Hexachlorobenzene	25		22	88	52-124
Pentachlorophenol	25		16	64	5-125
Phenanthrene	25		22	88	52-128
Anthracene	25		22	88	52-127
Carbazole	25		23	92	54-126
Di-n-butylphthalate	25		23	92	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		21	84	53-131
Butylbenzylphthalate	25		22	88	54-128
3,3'-Dichlorobenzidine	25		16	64	41-117
Benzo(a)anthracene	25		22	88	56-124
Chrysene	25		22	88	53-123

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
bis(2-Ethylhexyl)phthal	25		21	84	56-127
Di-n-octylphthalate	25		21	84	59-138
Benzo(b)fluoranthene	25		22	88	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121
Indeno(1,2,3-cd)pyrene	25		22	88	23-152
Dibenzo(a,h)anthracene	25		23	92	60-122
Benzo(g,h,i)perylene	25		23	92	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	7	28	0	40	0-127
bis(2-Chloroethyl)Ether	25	19	76	11	40	46-109
2-Chlorophenol	25	18	72	6	40	22-117
1,3-Dichlorobenzene	25	19	76	11	40	28-103
1,4-Dichlorobenzene	25	19	76	11	40	28-104
1,2-Dichlorobenzene	25	20	80	10	40	29-107
2-Methylphenol	25	14	56	0	40	40-104
2,2'-oxybis(1-Chloropro	25	18	72	12	40	10-134
4-Methylphenol	25	14	56	0	40	35-106
N-Nitroso-di-n-prop.(1)	25	23	92	4	40	44-122
Hexachloroethane	25	19	76	11	40	24-104
Nitrobenzene	25	20	80	10	40	47-112
Isophorone	25	22	88	10	40	48-118
2-Nitrophenol	25	19	76	5	40	29-122
2,4-Dimethylphenol	25	8	32	12	40	14-109
2,4-Dichlorophenol	25	20	80	5	40	31-122
1,2,4-Trichlorobenzene	25	20	80	10	40	33-108
Naphthalene	25	20	80	10	40	38-117
4-Chloroaniline	25	5	20	18	40	0-152
bis(2-Chloroethoxy)meth	25	20	80	5	40	49-112
Hexachlorobutadiene	25	19	76	5	40	28-109
4-Chloro-3-Methylphenol	25	21	84	5	40	48-117
2-Methylnaphthalene	25	20	80	5	40	43-113
Hexachlorocyclopentadie	25	12	48	18	40	34-103
2,4,6-Trichlorophenol	25	19	76	5	40	34-127
2,4,5-Trichlorophenol	25	20	80	5	40	32-131
2-Chloronaphthalene	25	20	80	5	40	47-116
2-Nitroaniline	25	20	80	0	40	51-120

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dimethylphthalate	25	22	88	0	40	53-124
Acenaphthylene	25	21	84	5	40	50-119
2,6-Dinitrotoluene	25	22	88	0	40	52-122
3-Nitroaniline	25	18	72	5	40	47-115
Acenaphthene	25	21	84	5	40	50-121
2,4-Dinitrophenol	25	15	60	7	40	0-144
4-Nitrophenol	25	8	32	12	40	0-160
Dibenzofuran	25	22	88	10	40	51-122
2,4-Dinitrotoluene	25	24	96	0	40	52-126
Diethylphthalate	25	23	92	0	40	53-126
4-Chlorophenyl-phenylet	25	23	92	4	40	50-124
Fluorene	25	22	88	0	40	52-125
4-Nitroaniline	25	20	80	0	40	47-117
4,6-Dinitro-2-methylphe	25	20	80	0	40	3-151
N-Nitrosodiphenylamine	25	23	92	4	40	50-150
4-Bromophenyl-phenyleth	25	20	80	0	40	51-124
Hexachlorobenzene	25	22	88	0	40	52-124
Pentachlorophenol	25	17	68	6	40	5-125
Phenanthrene	25	22	88	0	40	52-128
Anthracene	25	22	88	0	40	52-127
Carbazole	25	23	92	0	40	54-126
Di-n-butylphthalate	25	23	92	0	40	56-132
Fluoranthene	25	24	96	4	40	53-130
Pyrene	25	21	84	0	40	53-131
Butylbenzylphthalate	25	22	88	0	40	54-128
3,3'-Dichlorobenzidine	25	15	60	6	40	41-117
Benzo(a)anthracene	25	22	88	0	40	56-124
Chrysene	25	22	88	0	40	53-123

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
bis(2-Ethylhexyl)phthal	25	21	84	0	40	56-127
Di-n-octylphthalate	25	20	80	5	40	59-138
Benzo(b)fluoranthene	25	22	88	0	40	58-126
Benzo(k)fluoranthene	25	25	100	4	40	60-124
Benzo(a)pyrene	25	22	88	0	40	61-121
Indeno(1,2,3-cd)pyrene	25	22	88	0	40	23-152
Dibenzo(a,h)anthracene	25	22	88	4	40	60-122
Benzo(g,h,i)perylene	25	22	88	4	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 64 outside limits
Spike Recovery: 0 out of 128 outside limits

COMMENTS: _____

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2100 DFTPP Injection Date: 02/26/03

Instrument ID: S2 DFTPP Injection Time: 2041

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.3
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	43.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	29.6
365	Greater than 1.0% of mass 198	4.16
441	Present, but less than mass 443	15.6
442	40.0 - 99.9% of mass 198	86.9
443	17.0 - 23.0% of mass 442	16.4 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502H	SS0226B	S2D2101	02/26/03	2058
02	SSTD1602H	SS0226C	S2D2102	02/26/03	2137
03	SSTD0102H	SS0226D	S2D2103	02/26/03	2217
04	SSTD1202H	SS0226E	S2D2104	02/26/03	2256
05	SSTD0202H	SS0226F	S2D2105	02/26/03	2336
06	SSTD0802H	SS0226G	S2D2106	02/27/03	0015
07					
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 02/26/03 02/27/03

Calibration Time(s): 2058 0015

LAB FILE ID: RRF160=S2D2102

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.581					1.505	5.7*
bis(2-Chloroethyl)Ether	* 1.010					0.993	2.5*
2-Chlorophenol	* 1.297					1.269	3.7*
1,3-Dichlorobenzene	* 1.479					1.429	4.0*
1,4-Dichlorobenzene	* 1.629					1.537	5.0*
1,2-Dichlorobenzene	* 1.582					1.434	7.6*
2-Methylphenol	* 1.000					0.983	6.0*
2,2'-oxybis(1-Chloropropane)	* 1.219					1.232	1.7*
4-Methylphenol	* 1.100					1.061	6.3*
N-Nitroso-di-n-propylamine	* 0.729					0.756	4.5*
Hexachloroethane	* 0.548					0.554	1.7*
Nitrobenzene	* 0.451					0.425	5.3*
Isophorone	* 0.621					0.636	2.6*
2-Nitrophenol	* 0.240					0.228	6.4*
2,4-Dimethylphenol	* 0.393					0.365	11.8*
2,4-Dichlorophenol	* 0.388					0.343	11.3*
1,2,4-Trichlorobenzene	* 0.427					0.387	9.1*
Naphthalene	* 1.254					1.130	9.5*
4-Chloroaniline	* 0.365					0.363	6.7*
bis(2-Chloroethoxy)methane	* 0.388					0.364	5.9*
Hexachlorobutadiene	* 0.304					0.276	8.2*
4-Chloro-3-Methylphenol	* 0.367					0.342	8.6*
2-Methylnaphthalene	* 0.894					0.799	10.9*
Hexachlorocyclopentadiene	* 0.384					0.303	30.7*
2,4,6-Trichlorophenol	* 0.483					0.438	10.5*
2,4,5-Trichlorophenol	* 0.526					0.478	10.6*
2-Chloronaphthalene	* 1.339					1.230	8.5*
2-Nitroaniline	* 0.402					0.402	2.2*
Dimethylphthalate	* 1.537					1.506	4.9*
Acenaphthylene	* 2.039					1.930	6.4*
2,6-Dinitrotoluene	* 0.365					0.350	5.8*
3-Nitroaniline	* 0.314					0.294	5.7*
Acenaphthene	* 1.349					1.244	9.2*
2,4-Dinitrophenol	* 0.184					0.150	30.4*
4-Nitrophenol	* 0.221					0.198	15.9*
Dibenzofuran	* 1.977					1.811	10.0*
2,4-Dinitrotoluene	* 0.471					0.460	6.8*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 02/26/03 02/27/03

Calibration Time(s): 2058 0015

LAB FILE ID: RRF160=S2D2102

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Diethylphthalate	* 1.603					1.567	4.9*
4-Chlorophenyl-phenylether	* 0.918					0.824	11.1*
Fluorene	* 1.657					1.481	12.1*
4-Nitroaniline	* 0.224					0.222	6.7*
4,6-Dinitro-2-methylphenol	* 0.188					0.167	15.2*
N-Nitrosodiphenylamine (1)	* 0.558					0.520	5.6*
4-Bromophenyl-phenylether	* 0.356					0.319	9.5*
Hexachlorobenzene	* 0.382					0.351	7.5*
Pentachlorophenol	* 0.168					0.129	28.2*
Phenanthrene	* 1.274					1.129	10.2*
Anthracene	* 1.228					1.095	9.1*
Carbazole	* 0.707					0.603	12.9*
Di-n-butylphthalate	* 1.526					1.425	5.7*
Fluoranthene	* 1.358					1.243	7.8*
Pyrene	* 1.228					1.169	3.6*
Butylbenzylphthalate	* 0.533					0.521	2.9*
3,3'-Dichlorobenzidine	* 0.466					0.408	11.8*
Benzo(a)anthracene	* 1.216					1.152	4.5*
Chrysene	* 1.019					0.976	3.9*
bis(2-Ethylhexyl)phthalate	* 0.799					0.732	6.5*
Di-n-octylphthalate	* 2.427					2.243	9.7*
Benzo(b)fluoranthene	* 1.953					1.833	8.5*
Benzo(k)fluoranthene	* 1.806					1.640	9.6*
Benzo(a)pyrene	* 1.598					1.493	7.8*
Indeno(1,2,3-cd)pyrene	* 1.371					1.352	7.9*
Dibenzo(a,h)anthracene	* 1.436					1.288	11.7*
Benzo(g,h,i)perylene	* 1.184					1.136	8.0*
Nitrobenzene-d5	0.444					0.433	3.7*
2-Fluorobiphenyl	* 1.712					1.558	10.1*
Terphenyl-d14	* 0.968					0.934	3.3*
Phenol-d5	* 1.294					1.260	3.9*
2-Fluorophenol	* 0.998					0.974	4.6*
2,4,6-Tribromophenol	* 0.177					0.158	10.5*
2-Chlorophenol-d4	* 1.287					1.255	3.0*
1,2-Dichlorobenzene-d4	* 1.017					0.955	6.3*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK2F	84	73	85	88	88	90	89	72	0
02	S2FLCS	82	76	81	85	85	97	85	73	0
03	SV1031113	50	46*	53*	42*	46	50	46	40*	4
04	WODSS102	53	55	72	50	54	74	56	47	0
05	WODSS103	46	50*	55*	42*	46	59	48	41*	4
06	WODSS101	47	46*	57*	44*	46	63	47	43*	4
07	WODSS104	64	65	83	58	63	82	66	56	0
08	SV1011315	64	64	77	60	63	78	64	55	0
09	SV1021517	53	69	86	58	60	75	63	51	0
10	SV1041012	66	61	87	62	65	88	69	59	0
11	SBLK2P	67	69	97	73	77	97	75	62	0
12	S2PLCS	68	70	90	70	76	100	72	62	0
13	SV1031113RE	66	70	95	66	71	99	72	60	0
14	WODSS103RE	54	62	88	59	62	96	62	51	0
15	WODSS101RE	57	67	89	64	64	103	66	54	0
16										
17										
18										
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28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(61-113)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2156 DFTPP Injection Date: 02/28/03

Instrument ID: S2 DFTPP Injection Time: 1606

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	54.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	66.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	48.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	25.5
365	Greater than 1.0% of mass 198	2.75
441	Present, but less than mass 443	9.4
442	40.0 - 99.9% of mass 198	51.5
443	17.0 - 23.0% of mass 442	10.1 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502K	SS0228B	S2D2157	02/28/03	1629
02	SBLK2F	MB-5702	S2D2158	02/28/03	1714
03	S2FLCS	LCS-5702	S2D2159	02/28/03	1754
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 02/28/03 Time: 1629

Lab File ID: S2D2157 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.558	0.050	3.5	20.0
bis(2-Chloroethyl)Ether	0.993	1.004	0.050	1.1	100
2-Chlorophenol	1.269	1.277	0.050	0.6	100
1,3-Dichlorobenzene	1.429	1.421	0.050	-0.6	100
1,4-Dichlorobenzene	1.537	1.491	0.050	-3.0	20.0
1,2-Dichlorobenzene	1.434	1.371	0.050	-4.4	100
2-Methylphenol	0.983	1.073	0.050	9.2	100
2,2'-oxybis(1-Chloropropane)	1.232	1.259	0.050	2.2	100
4-Methylphenol	1.061	1.126	0.050	6.1	100
N-Nitroso-di-n-propylamine	0.695	0.731	0.050	5.2	100
Hexachloroethane	0.554	0.565	0.050	2.0	100
Nitrobenzene	0.425	0.429	0.050	0.9	100
Isophorone	0.636	0.685	0.050	7.7	100
2-Nitrophenol	0.228	0.233	0.050	2.2	20.0
2,4-Dimethylphenol	0.365	0.388	0.050	6.3	100
2,4-Dichlorophenol	0.343	0.351	0.050	2.3	20.0
1,2,4-Trichlorobenzene	0.387	0.374	0.050	-3.4	100
Naphthalene	1.130	1.099	0.050	-2.7	100
4-Chloroaniline	0.363	0.416	0.050	14.6	100
bis(2-Chloroethoxy)methane	0.364	0.366	0.050	0.5	100
Hexachlorobutadiene	0.276	0.270	0.050	-2.2	20.0
4-Chloro-3-Methylphenol	0.342	0.370	0.050	8.2	20.0
2-Methylnaphthalene	0.799	0.803	0.050	0.5	100
Hexachlorocyclopentadiene	0.303	0.164	0.050	-45.9	100
2,4,6-Trichlorophenol	0.438	0.440	0.050	0.4	100
2,4,5-Trichlorophenol	0.478	0.489	0.050	2.3	100
2-Chloronaphthalene	1.230	1.174	0.050	-4.6	100
2-Nitroaniline	0.402	0.434	0.050	8.0	100
Dimethylphthalate	1.506	1.556	0.050	3.3	100
Acenaphthylene	1.930	1.921	0.050	-0.5	100
2,6-Dinitrotoluene	0.350	0.376	0.050	7.4	100
3-Nitroaniline	0.294	0.356	0.050	21.1	100
Acenaphthene	1.244	1.222	0.050	-1.8	20.0
2,4-Dinitrophenol	0.150	0.198	0.050	32.0	100
4-Nitrophenol	0.198	0.275	0.050	38.9	100
Dibenzofuran	1.811	1.848	0.050	2.0	100
2,4-Dinitrotoluene	0.460	0.531	0.050	15.4	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 02/28/03 Time: 1629

Lab File ID: S2D2157 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.683	0.050	7.4	100
4-Chlorophenyl-phenylether	0.824	0.818	0.050	-0.7	100
Fluorene	1.481	1.470	0.050	-0.7	100
4-Nitroaniline	0.222	0.341	0.050	53.6	100
4,6-Dinitro-2-methylphenol	0.167	0.179	0.050	7.2	100
N-Nitrosodiphenylamine(1)	0.520	0.508	0.050	-2.3	20.0
4-Bromophenyl-phenylether	0.319	0.303	0.050	-5.0	100
Hexachlorobenzene	0.351	0.343	0.050	-2.3	100
Pentachlorophenol	0.129	0.143	0.050	10.8	20.0
Phenanthrene	1.129	1.075	0.050	-4.8	100
Anthracene	1.095	1.072	0.050	-2.1	100
Carbazole	0.603	0.852	0.050	41.3	100
Di-n-butylphthalate	1.425	1.434	0.050	0.6	100
Fluoranthene	1.243	1.354	0.050	8.9	20.0
Pyrene	1.169	1.049	0.050	-10.3	100
Butylbenzylphthalate	0.521	0.470	0.050	-9.8	100
3,3'-Dichlorobenzidine	0.408	0.474	0.050	16.2	100
Benzo(a)anthracene	1.152	1.130	0.050	-1.9	100
Chrysene	0.976	0.992	0.050	1.6	100
bis(2-Ethylhexyl)phthalate	0.732	0.668	0.050	-8.7	100
Di-n-octylphthalate	2.243	1.906	0.050	-15.0	20.0
Benzo(b)fluoranthene	1.833	1.817	0.050	-0.9	100
Benzo(k)fluoranthene	1.640	1.625	0.050	-0.9	100
Benzo(a)pyrene	1.493	1.579	0.050	5.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.066	0.050	36.3	100
Dibenzo(a,h)anthracene	1.288	1.794	0.050	39.3	100
Benzo(g,h,i)perylene	1.136	1.640	0.050	44.4	100
Nitrobenzene-d5	0.433	0.448	0.050	3.5	100
2-Fluorobiphenyl	1.558	1.467	0.050	-5.8	100
Terphenyl-d14	0.934	0.856	0.050	-8.4	100
Phenol-d5	1.260	1.300	0.050	3.2	100
2-Fluorophenol	0.974	0.994	0.050	2.0	100
2,4,6-Tribromophenol	0.158	0.163	0.050	3.2	100
2-Chlorophenol-d4	1.255	1.273	0.050	1.4	100
1,2-Dichlorobenzene-d4	0.955	0.911	0.050	-4.6	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
541-73-1	1,3-Dichlorobenzene	330	U
106-46-7	1,4-Dichlorobenzene	330	U
95-50-1	1,2-Dichlorobenzene	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
120-82-1	1,2,4-Trichlorobenzene	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	670	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	670	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	670	U
83-32-9	Acenaphthene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	670	U
100-02-7	4-Nitrophenol	670	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	670	U
534-52-1	4,6-Dinitro-2-methylphenol	670	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	670	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: MB-5702

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2158

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: 14.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2FLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	1700		1400	82	45-109
bis(2-Chloroethyl)Ether	1700		1300	76	43-104
2-Chlorophenol	1700		1400	82	43-107
1,3-Dichlorobenzene	1700		1300	76	40-101
1,4-Dichlorobenzene	1700		1300	76	41-102
1,2-Dichlorobenzene	1700		1300	76	41-105
2-Methylphenol	1700		1500	88	45-108
2,2'-oxybis(1-Chloropro	1700		1400	82	41-105
4-Methylphenol	1700		1400	82	48-109
N-Nitroso-di-n-prop.(1)	1700		1500	88	44-111
Hexachloroethane	1700		1400	82	40-102
Nitrobenzene	1700		1400	82	44-108
Isophorone	1700		1600	94	42-113
2-Nitrophenol	1700		1400	82	42-111
2,4-Dimethylphenol	1700		1200	70	37-107
2,4-Dichlorophenol	1700		1400	82	49-110
1,2,4-Trichlorobenzene	1700		1300	76	42-107
Naphthalene	1700		1300	76	44-112
4-Chloroaniline	1700		1200	70	4-102
bis(2-Chloroethoxy)meth	1700		1400	82	46-108
Hexachlorobutadiene	1700		1300	76	41-108
4-Chloro-3-Methylphenol	1700		1600	94	56-117
2-Methylnaphthalene	1700		1300	76	46-110
Hexachlorocyclopentadie	1700		780	46	10-118
2,4,6-Trichlorophenol	1700		1400	82	53-115
2,4,5-Trichlorophenol	1700		1400	82	59-113
2-Chloronaphthalene	1700		1400	82	52-112
2-Nitroaniline	1700		1600	94	63-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2FLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	1700		1600	94	62-117
Acenaphthylene	1700		1500	88	58-112
2,6-Dinitrotoluene	1700		1600	94	60-118
3-Nitroaniline	1700		1500	88	30-117
Acenaphthene	1700		1400	82	53-116
2,4-Dinitrophenol	1700		1900	112	15-136
4-Nitrophenol	1700		2000	118	50-129
Dibenzofuran	1700		1500	88	61-112
2,4-Dinitrotoluene	1700		1800	106	59-123
Diethylphthalate	1700		1700	100	61-120
4-Chlorophenyl-phenylet	1700		1500	88	59-116
Fluorene	1700		1500	88	63-115
4-Nitroaniline	1700		2200	129*	35-124
4,6-Dinitro-2-methylphe	1700		1500	88	33-130
N-Nitrosodiphenylamine	1700		1900	112	50-150
4-Bromophenyl-phenyleth	1700		1400	82	66-110
Hexachlorobenzene	1700		1500	88	67-112
Pentachlorophenol	1700		1600	94	19-130
Phenanthrene	1700		1500	88	70-115
Anthracene	1700		1500	88	63-117
Carbazole	1700		2300	135*	62-122
Di-n-butylphthalate	1700		1500	88	70-120
Fluoranthene	1700		1600	94	64-121
Pyrene	1700		1400	82	66-120
Butylbenzylphthalate	1700		1500	88	63-123
3,3'-Dichlorobenzidine	1700		1400	82	8-124
Benzo(a)anthracene	1700		1500	88	50-129
Chrysene	1700		1500	88	41-150

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2FLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
bis(2-Ethylhexyl)phthal	1700		1400	82	64-115
Di-n-octylphthalate	1700		1200	70	69-137
Benzo(b)fluoranthene	1700		1500	88	61-129
Benzo(k)fluoranthene	1700		1800	106	62-130
Benzo(a)pyrene	1700		1600	94	66-119
Indeno(1,2,3-cd)pyrene	1700		1800	106	56-128
Dibenzo(a,h)anthracene	1700		2100	124	58-128
Benzo(g,h,i)perylene	1700		2200	129	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 64 outside limits

COMMENTS: _____

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2222 DFTPP Injection Date: 03/02/03

Instrument ID: S2 DFTPP Injection Time: 1305

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	45.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	52.9
70	Less than 2.0% of mass 69	0.1 (0.3)1
127	40.0 - 60.0% of mass 198	43.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	29.0
365	Greater than 1.0% of mass 198	3.73
441	Present, but less than mass 443	14.6
442	40.0 - 99.9% of mass 198	79.8
443	17.0 - 23.0% of mass 442	15.2 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502P	SS0302A	S2D2223	03/02/03	1323
02	SV1031113	B0221-07A	S2D2235	03/02/03	2128
03	WODSS102	B0221-04A	S2D2238	03/02/03	2328
04					
05					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/02/03 Time: 1323

Lab File ID: S2D2223 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.404	0.050	-6.7	20.0
bis(2-Chloroethyl)Ether	0.993	0.915	0.050	-7.8	100
2-Chlorophenol	1.269	1.224	0.050	-3.5	100
1,3-Dichlorobenzene	1.429	1.401	0.050	-2.0	100
1,4-Dichlorobenzene	1.537	1.512	0.050	-1.6	20.0
1,2-Dichlorobenzene	1.434	1.398	0.050	-2.5	100
2-Methylphenol	0.983	0.980	0.050	-0.3	100
2,2'-oxybis(1-Chloropropane)	1.232	1.150	0.050	-6.6	100
4-Methylphenol	1.061	1.022	0.050	-3.7	100
N-Nitroso-di-n-propylamine	0.695	0.736	0.050	5.9	100
Hexachloroethane	0.554	0.574	0.050	3.6	100
Nitrobenzene	0.425	0.410	0.050	-3.5	100
Isophorone	0.636	0.650	0.050	2.2	100
2-Nitrophenol	0.228	0.224	0.050	-1.8	20.0
2,4-Dimethylphenol	0.365	0.374	0.050	2.5	100
2,4-Dichlorophenol	0.343	0.342	0.050	-0.3	20.0
1,2,4-Trichlorobenzene	0.387	0.391	0.050	1.0	100
Naphthalene	1.130	1.101	0.050	-2.6	100
4-Chloroaniline	0.363	0.412	0.050	13.5	100
bis(2-Chloroethoxy)methane	0.364	0.334	0.050	-8.2	100
Hexachlorobutadiene	0.276	0.293	0.050	6.2	20.0
4-Chloro-3-Methylphenol	0.342	0.356	0.050	4.1	20.0
2-Methylnaphthalene	0.799	0.809	0.050	1.2	100
Hexachlorocyclopentadiene	0.303	0.166	0.050	-45.2	100
2,4,6-Trichlorophenol	0.438	0.412	0.050	-5.9	100
2,4,5-Trichlorophenol	0.478	0.478	0.050	0.0	100
2-Chloronaphthalene	1.230	1.165	0.050	-5.3	100
2-Nitroaniline	0.402	0.414	0.050	3.0	100
Dimethylphthalate	1.506	1.549	0.050	2.8	100
Acenaphthylene	1.930	1.923	0.050	-0.4	100
2,6-Dinitrotoluene	0.350	0.366	0.050	4.6	100
3-Nitroaniline	0.294	0.333	0.050	13.3	100
Acenaphthene	1.244	1.226	0.050	-1.4	20.0
2,4-Dinitrophenol	0.150	0.136	0.050	-9.3	100
4-Nitrophenol	0.198	0.226	0.050	14.1	100
Dibenzofuran	1.811	1.851	0.050	2.2	100
2,4-Dinitrotoluene	0.460	0.492	0.050	7.0	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/02/03 Time: 1323

Lab File ID: S2D2223 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.663	0.050	6.1	100
4-Chlorophenyl-phenylether	0.824	0.858	0.050	4.1	100
Fluorene	1.481	1.514	0.050	2.2	100
4-Nitroaniline	0.222	0.306	0.050	37.8	100
4,6-Dinitro-2-methylphenol	0.167	0.144	0.050	-13.8	100
N-Nitrosodiphenylamine(1)	0.520	0.520	0.050	0.0	20.0
4-Bromophenyl-phenylether	0.319	0.307	0.050	-3.8	100
Hexachlorobenzene	0.351	0.345	0.050	-1.7	100
Pentachlorophenol	0.129	0.126	0.050	-2.3	20.0
Phenanthrene	1.129	1.088	0.050	-3.6	100
Anthracene	1.095	1.058	0.050	-3.4	100
Carbazole	0.603	0.902	0.050	49.6	100
Di-n-butylphthalate	1.425	1.415	0.050	-0.7	100
Fluoranthene	1.243	1.309	0.050	5.3	20.0
Pyrene	1.169	1.040	0.050	-11.0	100
Butylbenzylphthalate	0.521	0.474	0.050	-9.0	100
3,3'-Dichlorobenzidine	0.408	0.464	0.050	13.7	100
Benzo(a)anthracene	1.152	1.133	0.050	-1.6	100
Chrysene	0.976	0.970	0.050	-0.6	100
bis(2-Ethylhexyl)phthalate	0.732	0.659	0.050	-10.0	100
Di-n-octylphthalate	2.243	2.141	0.050	-4.5	20.0
Benzo(b)fluoranthene	1.833	1.902	0.050	3.8	100
Benzo(k)fluoranthene	1.640	1.682	0.050	2.6	100
Benzo(a)pyrene	1.493	1.597	0.050	7.0	20.0
Indeno(1,2,3-cd)pyrene	1.516	1.383	0.050	-8.8	100
Dibenzo(a,h)anthracene	1.288	1.463	0.050	13.6	100
Benzo(g,h,i)perylene	1.136	1.065	0.050	-6.2	100
Nitrobenzene-d5	0.433	0.436	0.050	0.7	100
2-Fluorobiphenyl	1.558	1.517	0.050	-2.6	100
Terphenyl-d14	0.934	0.866	0.050	-7.3	100
Phenol-d5	1.260	1.177	0.050	-6.6	100
2-Fluorophenol	0.974	0.888	0.050	-8.8	100
2,4,6-Tribromophenol	0.158	0.152	0.050	-3.8	100
2-Chlorophenol-d4	1.255	1.214	0.050	-3.3	100
1,2-Dichlorobenzene-d4	0.955	0.922	0.050	-3.4	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2239 DFTPP Injection Date: 03/03/03

Instrument ID: S2 DFTPP Injection Time: 0002

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	57.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	62.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	50.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	25.2
365	Greater than 1.0% of mass 198	2.53
441	Present, but less than mass 443	8.2
442	40.0 - 99.9% of mass 198	43.2
443	17.0 - 23.0% of mass 442	8.9 (20.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502Q	SS0302B	S2D2240	03/03/03	0020
02	WODSS103	B0221-06A	S2D2242	03/03/03	0139
03	WODSS101	B0221-02A	S2D2243	03/03/03	0218
04	WODSS104	B0221-08A	S2D2244	03/03/03	0258
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/03/03 Time: 0020

Lab File ID: S2D2240 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.436	0.050	-4.6	20.0
bis(2-Chloroethyl)Ether	0.993	0.904	0.050	-9.0	100
2-Chlorophenol	1.269	1.240	0.050	-2.3	100
1,3-Dichlorobenzene	1.429	1.430	0.050	0.1	100
1,4-Dichlorobenzene	1.537	1.531	0.050	-0.4	20.0
1,2-Dichlorobenzene	1.434	1.410	0.050	-1.7	100
2-Methylphenol	0.983	0.970	0.050	-1.3	100
2,2'-oxybis(1-Chloropropane)	1.232	1.164	0.050	-5.5	100
4-Methylphenol	1.061	1.042	0.050	-1.8	100
N-Nitroso-di-n-propylamine	0.695	0.756	0.050	8.8	100
Hexachloroethane	0.554	0.549	0.050	-0.9	100
Nitrobenzene	0.425	0.406	0.050	-4.5	100
Isophorone	0.636	0.627	0.050	-1.4	100
2-Nitrophenol	0.228	0.217	0.050	-4.8	20.0
2,4-Dimethylphenol	0.365	0.368	0.050	0.8	100
2,4-Dichlorophenol	0.343	0.330	0.050	-3.8	20.0
1,2,4-Trichlorobenzene	0.387	0.386	0.050	-0.2	100
Naphthalene	1.130	1.089	0.050	-3.6	100
4-Chloroaniline	0.363	0.393	0.050	8.3	100
bis(2-Chloroethoxy)methane	0.364	0.329	0.050	-9.6	100
Hexachlorobutadiene	0.276	0.295	0.050	6.9	20.0
4-Chloro-3-Methylphenol	0.342	0.356	0.050	4.1	20.0
2-Methylnaphthalene	0.799	0.826	0.050	3.4	100
Hexachlorocyclopentadiene	0.303	0.088	0.050	-71.0	100
2,4,6-Trichlorophenol	0.438	0.405	0.050	-7.5	100
2,4,5-Trichlorophenol	0.478	0.478	0.050	0.0	100
2-Chloronaphthalene	1.230	1.177	0.050	-4.3	100
2-Nitroaniline	0.402	0.405	0.050	0.7	100
Dimethylphthalate	1.506	1.517	0.050	0.7	100
Acenaphthylene	1.930	1.884	0.050	-2.4	100
2,6-Dinitrotoluene	0.350	0.350	0.050	0.0	100
3-Nitroaniline	0.294	0.333	0.050	13.3	100
Acenaphthene	1.244	1.210	0.050	-2.7	20.0
2,4-Dinitrophenol	0.150	0.118	0.050	-21.3	100
4-Nitrophenol	0.198	0.251	0.050	26.8	100
Dibenzofuran	1.811	1.853	0.050	2.3	100
2,4-Dinitrotoluene	0.460	0.479	0.050	4.1	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/03/03 Time: 0020

Lab File ID: S2D2240 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.643	0.050	4.8	100
4-Chlorophenyl-phenylether	0.824	0.859	0.050	4.2	100
Fluorene	1.481	1.521	0.050	2.7	100
4-Nitroaniline	0.222	0.302	0.050	36.0	100
4,6-Dinitro-2-methylphenol	0.167	0.138	0.050	-17.4	100
N-Nitrosodiphenylamine(1)	0.520	0.526	0.050	1.2	20.0
4-Bromophenyl-phenylether	0.319	0.322	0.050	0.9	100
Hexachlorobenzene	0.351	0.349	0.050	-0.6	100
Pentachlorophenol	0.129	0.141	0.050	9.3	20.0
Phenanthrene	1.129	1.125	0.050	-0.4	100
Anthracene	1.095	1.103	0.050	0.7	100
Carbazole	0.603	0.882	0.050	46.3	100
Di-n-butylphthalate	1.425	1.437	0.050	0.8	100
Fluoranthene	1.243	1.338	0.050	7.6	20.0
Pyrene	1.169	1.078	0.050	-7.8	100
Butylbenzylphthalate	0.521	0.476	0.050	-8.6	100
3,3'-Dichlorobenzidine	0.408	0.477	0.050	16.9	100
Benzo(a)anthracene	1.152	1.172	0.050	1.7	100
Chrysene	0.976	0.978	0.050	0.2	100
bis(2-Ethylhexyl)phthalate	0.732	0.691	0.050	-5.6	100
Di-n-octylphthalate	2.243	2.328	0.050	3.8	20.0
Benzo(b)fluoranthene	1.833	1.962	0.050	7.0	100
Benzo(k)fluoranthene	1.640	1.762	0.050	7.4	100
Benzo(a)pyrene	1.493	1.595	0.050	6.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	1.574	0.050	3.8	100
Dibenzo(a,h)anthracene	1.288	1.414	0.050	9.8	100
Benzo(g,h,i)perylene	1.136	1.007	0.050	-11.4	100
Nitrobenzene-d5	0.433	0.420	0.050	-3.0	100
2-Fluorobiphenyl	1.558	1.477	0.050	-5.2	100
Terphenyl-d14	0.934	0.927	0.050	-0.7	100
Phenol-d5	1.260	1.171	0.050	-7.1	100
2-Fluorophenol	0.974	0.863	0.050	-11.4	100
2,4,6-Tribromophenol	0.158	0.158	0.050	0.0	100
2-Chlorophenol-d4	1.255	1.202	0.050	-4.2	100
1,2-Dichlorobenzene-d4	0.955	0.943	0.050	-1.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID (Standard): S2D2240 Date Analyzed: 03/03/03

Instrument ID: S2 Time Analyzed: 0020

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	172109	7.62	592043	10.03	391296	13.54
	UPPER LIMIT	344218	8.12	1184086	10.53	782592	14.04
	LOWER LIMIT	86055	7.12	296022	9.53	195648	13.04
	EPA SAMPLE NO.						
01	WODSS103	131530	7.62	442997	10.02	276727	13.52
02	WODSS101	126063	7.61	428882	10.02	275175	13.52
03	WODSS104	129480	7.61	440465	10.02	270856	13.52
04							
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID (Standard): S2D2240 Date Analyzed: 03/03/03

Instrument ID: S2 Time Analyzed: 0020

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	732080	16.54	909751	21.93	459491	24.63
	UPPER LIMIT	1464160	17.04	1819502	22.43	918982	25.13
	LOWER LIMIT	366040	16.04	454876	21.43	229746	24.13
	EPA SAMPLE NO.						
01	WODSS103	531858	16.53	624560	21.91	358537	24.62
02	WODSS101	491280	16.53	570686	21.91	352767	24.62
03	WODSS104	479804	16.53	466525	21.91	169103*	24.62
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22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2291 DFTPP Injection Date: 03/04/03

Instrument ID: S2 DFTPP Injection Time: 1333

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	53.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	61.3
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	40.0 - 60.0% of mass 198	49.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	27.1
365	Greater than 1.0% of mass 198	2.96
441	Present, but less than mass 443	9.5
442	40.0 - 99.9% of mass 198	52.6
443	17.0 - 23.0% of mass 442	10.3 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502T	SS0304B	S2D2292	03/04/03	1410
02	SV1011315	B0221-03A	S2D2295	03/04/03	1617
03	SV1021517	B0221-05A	S2D2296	03/04/03	1657
04	SV1041012	B0221-09A	S2D2297	03/04/03	1737
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/04/03 Time: 1410

Lab File ID: S2D2292 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.505	1.446	0.050	-3.9	20.0
bis(2-Chloroethyl)Ether	0.993	0.920	0.050	-7.4	100
2-Chlorophenol	1.269	1.278	0.050	0.7	100
1,3-Dichlorobenzene	1.429	1.439	0.050	0.7	100
1,4-Dichlorobenzene	1.537	1.548	0.050	0.7	20.0
1,2-Dichlorobenzene	1.434	1.421	0.050	-0.9	100
2-Methylphenol	0.983	0.994	0.050	1.1	100
2,2'-oxybis(1-Chloropropane)	1.232	1.140	0.050	-7.5	100
4-Methylphenol	1.061	1.087	0.050	2.4	100
N-Nitroso-di-n-propylamine	0.695	0.777	0.050	11.8	100
Hexachloroethane	0.554	0.580	0.050	4.7	100
Nitrobenzene	0.425	0.431	0.050	1.4	100
Isophorone	0.636	0.640	0.050	0.6	100
2-Nitrophenol	0.228	0.233	0.050	2.2	20.0
2,4-Dimethylphenol	0.365	0.379	0.050	3.8	100
2,4-Dichlorophenol	0.343	0.348	0.050	1.4	20.0
1,2,4-Trichlorobenzene	0.387	0.400	0.050	3.4	100
Naphthalene	1.130	1.093	0.050	-3.3	100
4-Chloroaniline	0.363	0.326	0.050	-10.2	100
bis(2-Chloroethoxy)methane	0.364	0.341	0.050	-6.3	100
Hexachlorobutadiene	0.276	0.302	0.050	9.4	20.0
4-Chloro-3-Methylphenol	0.342	0.347	0.050	1.5	20.0
2-Methylnaphthalene	0.799	0.782	0.050	-2.1	100
Hexachlorocyclopentadiene	0.303	0.141	0.050	-53.5	100
2,4,6-Trichlorophenol	0.438	0.462	0.050	5.5	100
2,4,5-Trichlorophenol	0.478	0.475	0.050	-0.6	100
2-Chloronaphthalene	1.230	1.187	0.050	-3.5	100
2-Nitroaniline	0.402	0.389	0.050	-3.2	100
Dimethylphthalate	1.506	1.497	0.050	-0.6	100
Acenaphthylene	1.930	1.835	0.050	-4.9	100
2,6-Dinitrotoluene	0.350	0.348	0.050	-0.6	100
3-Nitroaniline	0.294	0.249	0.050	-15.3	100
Acenaphthene	1.244	1.216	0.050	-2.2	20.0
2,4-Dinitrophenol	0.150	0.167	0.050	11.3	100
4-Nitrophenol	0.198	0.230	0.050	16.2	100
Dibenzofuran	1.811	1.782	0.050	-1.6	100
2,4-Dinitrotoluene	0.460	0.460	0.050	0.0	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/04/03 Time: 1410

Lab File ID: S2D2292 Init. Calib. Date(s): 02/26/03 02/27/03

Init. Calib. Times: 2058 0015

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.567	1.583	0.050	1.0	100
4-Chlorophenyl-phenylether	0.824	0.815	0.050	-1.1	100
Fluorene	1.481	1.415	0.050	-4.4	100
4-Nitroaniline	0.222	0.195	0.050	-12.2	100
4,6-Dinitro-2-methylphenol	0.167	0.168	0.050	0.6	100
N-Nitrosodiphenylamine(1)	0.520	0.464	0.050	-10.8	20.0
4-Bromophenyl-phenylether	0.319	0.320	0.050	0.3	100
Hexachlorobenzene	0.351	0.358	0.050	2.0	100
Pentachlorophenol	0.129	0.143	0.050	10.8	20.0
Phenanthrene	1.129	1.061	0.050	-6.0	100
Anthracene	1.095	1.023	0.050	-6.6	100
Carbazole	0.603	0.500	0.050	-17.1	100
Di-n-butylphthalate	1.425	1.339	0.050	-6.0	100
Fluoranthene	1.243	1.171	0.050	-5.8	20.0
Pyrene	1.169	1.167	0.050	-0.2	100
Butylbenzylphthalate	0.521	0.507	0.050	-2.7	100
3,3'-Dichlorobenzidine	0.408	0.381	0.050	-6.6	100
Benzo(a)anthracene	1.152	1.115	0.050	-3.2	100
Chrysene	0.976	0.968	0.050	-0.8	100
bis(2-Ethylhexyl)phthalate	0.732	0.707	0.050	-3.4	100
Di-n-octylphthalate	2.243	2.147	0.050	-4.3	20.0
Benzo(b)fluoranthene	1.833	1.888	0.050	3.0	100
Benzo(k)fluoranthene	1.640	1.786	0.050	8.9	100
Benzo(a)pyrene	1.493	1.625	0.050	8.8	20.0
Indeno(1,2,3-cd)pyrene	1.516	2.062	0.050	36.0	100
Dibenzo(a,h)anthracene	1.288	1.756	0.050	36.3	100
Benzo(g,h,i)perylene	1.136	1.628	0.050	43.3	100
Nitrobenzene-d5	0.433	0.444	0.050	2.5	100
2-Fluorobiphenyl	1.558	1.547	0.050	-0.7	100
Terphenyl-d14	0.934	0.956	0.050	2.4	100
Phenol-d5	1.260	1.198	0.050	-4.9	100
2-Fluorophenol	0.974	0.920	0.050	-5.5	100
2,4,6-Tribromophenol	0.158	0.167	0.050	5.7	100
2-Chlorophenol-d4	1.255	1.257	0.050	0.2	100
1,2-Dichlorobenzene-d4	0.955	0.963	0.050	0.8	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2395 DFTPP Injection Date: 03/08/03

Instrument ID: S2 DFTPP Injection Time: 1241

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.7
68	Less than 2.0% of mass 69	0.1 (0.3)1
69	Mass 69 relative abundance	54.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	44.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	29.3
365	Greater than 1.0% of mass 198	3.59
441	Present, but less than mass 443	4.5
442	40.0 - 99.9% of mass 198	59.1
443	17.0 - 23.0% of mass 442	11.3 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502A	SS0308A	S2D2396	03/08/03	1303
02	SSTD1602A	SS0308B	S2D2397	03/08/03	1344
03	SSTD0102A	SS0308C	S2D2398	03/08/03	1425
04	SSTD0802A	SS0308E	S2D2400	03/08/03	1546
05	SSTD1202A	SS0308F	S2D2401	03/08/03	1627
06	SSTD0202A	SS0308D	S2D2402	03/08/03	1715
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 03/08/03 03/08/03

Calibration Time(s): 1303 1956

LAB FILE ID: RRF160=S2D2397

COMPOUND	RRF160						$\overline{RRF}$	% RSD
Phenol	* 1.729						1.536	11.4*
bis(2-Chloroethyl)Ether	* 1.006						0.952	5.5*
2-Chlorophenol	* 1.376						1.293	4.8*
1,3-Dichlorobenzene	* 1.568						1.492	5.3*
1,4-Dichlorobenzene	* 1.725						1.606	5.8*
1,2-Dichlorobenzene	* 1.780						1.540	11.2*
2-Methylphenol	* 1.129						1.025	6.8*
2,2'-oxybis(1-Chloropropane)	* 1.296						1.232	4.0*
4-Methylphenol	* 1.190						1.065	12.2*
N-Nitroso-di-n-propylamine	* 0.731						0.723	6.1*
Hexachloroethane	* 0.604						0.594	5.0*
Nitrobenzene	* 0.495						0.451	7.6*
Isophorone	* 0.717						0.689	4.8*
2-Nitrophenol	* 0.265						0.243	7.8*
2,4-Dimethylphenol	* 0.478						0.436	6.6*
2,4-Dichlorophenol	* 0.464						0.399	13.9*
1,2,4-Trichlorobenzene	* 0.491						0.435	10.0*
Naphthalene	* 1.407						1.212	12.2*
4-Chloroaniline	* 0.467						0.416	10.2*
bis(2-Chloroethoxy)methane	* 0.422						0.373	10.8*
Hexachlorobutadiene	* 0.347						0.309	9.7*
4-Chloro-3-Methylphenol	* 0.446						0.400	11.2*
2-Methylnaphthalene	* 1.105						0.915	16.4*
Hexachlorocyclopentadiene	* 0.358						0.270	38.6*
2,4,6-Trichlorophenol	* 0.464						0.434	7.7*
2,4,5-Trichlorophenol	* 0.510						0.456	10.8*
2-Chloronaphthalene	* 1.347						1.253	7.3*
2-Nitroaniline	* 0.409						0.413	3.9*
Dimethylphthalate	* 1.677						1.645	4.9*
Acenaphthylene	* 2.105						1.989	6.2*
2,6-Dinitrotoluene	* 0.404						0.385	5.2*
3-Nitroaniline	* 0.345						0.333	5.9*
Acenaphthene	* 1.380						1.289	8.1*
2,4-Dinitrophenol	* 0.212						0.181	16.5*
4-Nitrophenol	* 0.281						0.238	20.2*
Dibenzofuran	* 2.126						1.960	9.0*
2,4-Dinitrotoluene	* 0.513						0.504	4.9*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 03/08/03 03/08/03

Calibration Time(s): 1303 1956

LAB FILE ID: RRF160=S2D2397

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Diethylphthalate	* 1.792					1.754	4.6*
4-Chlorophenyl-phenylether	* 0.964					0.853	10.3*
Fluorene	* 1.774					1.599	10.5*
4-Nitroaniline	* 0.292					0.295	3.6*
4,6-Dinitro-2-methylphenol	* 0.214					0.188	16.0*
N-Nitrosodiphenylamine (1)	* 0.671					0.594	10.0*
4-Bromophenyl-phenylether	* 0.364					0.325	9.7*
Hexachlorobenzene	* 0.394					0.360	8.1*
Pentachlorophenol	* 0.189					0.145	25.9*
Phenanthrene	* 1.481					1.265	12.4*
Anthracene	* 1.470					1.242	13.2*
Carbazole	* 1.094					0.956	10.4*
Di-n-butylphthalate	* 1.908					1.666	11.3*
Fluoranthene	* 1.666					1.471	11.0*
Pyrene	* 1.221					1.139	5.1*
Butylbenzylphthalate	* 0.586					0.552	4.0*
3,3'-Dichlorobenzidine	* 0.549					0.486	10.2*
Benzo(a)anthracene	* 1.310					1.213	6.8*
Chrysene	* 1.110					1.011	7.2*
bis(2-Ethylhexyl)phthalate	* 0.859					0.774	8.1*
Di-n-octylphthalate	* 2.646					2.228	14.3*
Benzo(b)fluoranthene	* 2.342					1.940	17.6*
Benzo(k)fluoranthene	* 1.845					1.671	7.2*
Benzo(a)pyrene	* 1.913					1.658	12.3*
Indeno(1,2,3-cd)pyrene	* 2.166					1.956	9.2*
Dibenzo(a,h)anthracene	* 1.912					1.667	12.3*
Benzo(g,h,i)perylene	* 1.594					1.477	6.8*
Nitrobenzene-d5	0.499					0.471	5.8*
2-Fluorobiphenyl	* 1.720					1.590	8.1*
Terphenyl-d14	* 0.973					0.914	5.8*
Phenol-d5	* 1.394					1.264	8.5*
2-Fluorophenol	* 1.005					0.923	9.8*
2,4,6-Tribromophenol	* 0.174					0.155	10.9*
2-Chlorophenol-d4	* 1.360					1.275	5.5*
1,2-Dichlorobenzene-d4	* 1.107					1.023	7.4*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Lab File ID: S2D2485 DFTPP Injection Date: 03/11/03

Instrument ID: S2 DFTPP Injection Time: 1018

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	51.9
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	56.7
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	43.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.1
275	10.0 - 30.0% of mass 198	28.8
365	Greater than 1.0% of mass 198	3.42
441	Present, but less than mass 443	3.9
442	40.0 - 99.9% of mass 198	65.3
443	17.0 - 23.0% of mass 442	12.4 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502H	SS0311B	S2D2486	03/11/03	1044
02	SBLK2P	MB-6006	S2D2487	03/11/03	1133
03	S2PLCS	LCS-6006	S2D2488	03/11/03	1213
04	SV1031113RE	B0221-07ARE	S2D2498	03/11/03	1854
05	WODSS103RE	B0221-06ARE	S2D2502	03/11/03	2134
06	WODSS101RE	B0221-02ARE	S2D2503	03/11/03	2214
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/11/03 Time: 1044

Lab File ID: S2D2486 Init. Calib. Date(s): 03/08/03 03/08/03

Init. Calib. Times: 1303 1715

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.536	1.449	0.050	-5.7	20.0
bis(2-Chloroethyl)Ether	0.952	0.921	0.050	-3.2	100
2-Chlorophenol	1.293	1.214	0.050	-6.1	100
1,3-Dichlorobenzene	1.492	1.411	0.050	-5.4	100
1,4-Dichlorobenzene	1.606	1.533	0.050	-4.5	20.0
1,2-Dichlorobenzene	1.540	1.402	0.050	-9.0	100
2-Methylphenol	1.025	0.962	0.050	-6.1	100
2,2'-oxybis(1-Chloropropane)	1.232	1.183	0.050	-4.0	100
4-Methylphenol	1.065	1.056	0.050	-0.8	100
N-Nitroso-di-n-propylamine	0.723	0.695	0.050	-3.9	100
Hexachloroethane	0.594	0.560	0.050	-5.7	100
Nitrobenzene	0.451	0.432	0.050	-4.2	100
Isophorone	0.689	0.666	0.050	-3.3	100
2-Nitrophenol	0.243	0.237	0.050	-2.5	20.0
2,4-Dimethylphenol	0.436	0.387	0.050	-11.2	100
2,4-Dichlorophenol	0.399	0.371	0.050	-7.0	20.0
1,2,4-Trichlorobenzene	0.435	0.409	0.050	-6.0	100
Naphthalene	1.212	1.074	0.050	-11.4	100
4-Chloroaniline	0.416	0.373	0.050	-10.3	100
bis(2-Chloroethoxy)methane	0.373	0.350	0.050	-6.2	100
Hexachlorobutadiene	0.309	0.286	0.050	-7.4	20.0
4-Chloro-3-Methylphenol	0.400	0.373	0.050	-6.8	20.0
2-Methylnaphthalene	0.915	0.816	0.050	-10.8	100
Hexachlorocyclopentadiene	0.270	0.267	0.050	-1.1	100
2,4,6-Trichlorophenol	0.434	0.436	0.050	0.5	100
2,4,5-Trichlorophenol	0.456	0.463	0.050	1.5	100
2-Chloronaphthalene	1.253	1.179	0.050	-5.9	100
2-Nitroaniline	0.413	0.395	0.050	-4.4	100
Dimethylphthalate	1.645	1.583	0.050	-3.8	100
Acenaphthylene	1.989	1.841	0.050	-7.4	100
2,6-Dinitrotoluene	0.385	0.382	0.050	-0.8	100
3-Nitroaniline	0.333	0.322	0.050	-3.3	100
Acenaphthene	1.289	1.209	0.050	-6.2	20.0
2,4-Dinitrophenol	0.181	0.145	0.050	-19.9	100
4-Nitrophenol	0.238	0.258	0.050	8.4	100
Dibenzofuran	1.960	1.863	0.050	-4.9	100
2,4-Dinitrotoluene	0.504	0.481	0.050	-4.6	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date: 03/11/03 Time: 1044

Lab File ID: S2D2486 Init. Calib. Date(s): 03/08/03 03/08/03

Init. Calib. Times: 1303 1715

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Diethylphthalate	1.754	1.631	0.050	-7.0	100
4-Chlorophenyl-phenylether	0.853	0.785	0.050	-8.0	100
Fluorene	1.599	1.457	0.050	-8.9	100
4-Nitroaniline	0.295	0.292	0.050	-1.0	100
4,6-Dinitro-2-methylphenol	0.188	0.176	0.050	-6.4	100
N-Nitrosodiphenylamine(1)	0.594	0.531	0.050	-10.6	20.0
4-Bromophenyl-phenylether	0.325	0.311	0.050	-4.3	100
Hexachlorobenzene	0.360	0.356	0.050	-1.1	100
Pentachlorophenol	0.145	0.156	0.050	7.6	20.0
Phenanthrene	1.265	1.129	0.050	-10.8	100
Anthracene	1.242	1.106	0.050	-11.0	100
Carbazole	0.956	0.917	0.050	-4.1	100
Di-n-butylphthalate	1.666	1.507	0.050	-9.5	100
Fluoranthene	1.471	1.336	0.050	-9.2	20.0
Pyrene	1.139	1.109	0.050	-2.6	100
Butylbenzylphthalate	0.552	0.518	0.050	-6.2	100
3,3'-Dichlorobenzidine	0.486	0.488	0.050	0.4	100
Benzo(a)anthracene	1.213	1.140	0.050	-6.0	100
Chrysene	1.011	0.952	0.050	-5.8	100
bis(2-Ethylhexyl)phthalate	0.774	0.684	0.050	-11.6	100
Di-n-octylphthalate	2.228	1.970	0.050	-11.6	20.0
Benzo(b)fluoranthene	1.940	1.790	0.050	-7.7	100
Benzo(k)fluoranthene	1.671	1.455	0.050	-12.9	100
Benzo(a)pyrene	1.658	1.448	0.050	-12.7	20.0
Indeno(1,2,3-cd)pyrene	1.956	1.606	0.050	-17.9	100
Dibenzo(a,h)anthracene	1.667	1.334	0.050	-20.0	100
Benzo(g,h,i)perylene	1.477	1.197	0.050	-19.0	100
Nitrobenzene-d5	0.471	0.440	0.050	-6.6	100
2-Fluorobiphenyl	1.590	1.510	0.050	-5.0	100
Terphenyl-d14	0.914	0.917	0.050	0.3	100
Phenol-d5	1.264	1.183	0.050	-6.4	100
2-Fluorophenol	0.923	0.915	0.050	-0.9	100
2,4,6-Tribromophenol	0.155	0.169	0.050	9.0	100
2-Chlorophenol-d4	1.275	1.217	0.050	-4.5	100
1,2-Dichlorobenzene-d4	1.023	0.948	0.050	-7.3	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2PLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		520	63	45-109
bis(2-Chloroethyl)Ether	830		540	65	43-104
2-Chlorophenol	830		550	66	43-107
1,3-Dichlorobenzene	830		530	64	40-101
1,4-Dichlorobenzene	830		530	64	41-102
1,2-Dichlorobenzene	830		530	64	41-105
2-Methylphenol	830		530	64	45-108
2,2'-oxybis(1-Chloropro	830		560	67	41-105
4-Methylphenol	830		550	66	48-109
N-Nitroso-di-n-prop.(1)	830		640	77	44-111
Hexachloroethane	830		560	67	40-102
Nitrobenzene	830		590	71	44-108
Isophorone	830		620	75	42-113
2-Nitrophenol	830		540	65	42-111
2,4-Dimethylphenol	830		510	61	37-107
2,4-Dichlorophenol	830		550	66	49-110
1,2,4-Trichlorobenzene	830		550	66	42-107
Naphthalene	830		520	63	44-112
4-Chloroaniline	830		260	31	4-102
bis(2-Chloroethoxy)meth	830		550	66	46-108
Hexachlorobutadiene	830		560	67	41-108
4-Chloro-3-Methylphenol	830		580	70	56-117
2-Methylnaphthalene	830		490	59	46-110
Hexachlorocyclopentadie	830		330	40	10-118
2,4,6-Trichlorophenol	830		620	75	53-115
2,4,5-Trichlorophenol	830		630	76	59-113
2-Chloronaphthalene	830		580	70	52-112
2-Nitroaniline	830		690	83	63-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2PLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dimethylphthalate	830		670	81	62-117
Acenaphthylene	830		600	72	58-112
2,6-Dinitrotoluene	830		690	83	60-118
3-Nitroaniline	830		440	53	30-117
Acenaphthene	830		580	70	53-116
2,4-Dinitrophenol	830		240	29	15-136
4-Nitrophenol	830		700	84	50-129
Dibenzofuran	830		590	71	61-112
2,4-Dinitrotoluene	830		700	84	59-123
Diethylphthalate	830		680	82	61-120
4-Chlorophenyl-phenylet	830		630	76	59-116
Fluorene	830		590	71	63-115
4-Nitroaniline	830		690	83	35-124
4,6-Dinitro-2-methylphe	830		480	58	33-130
N-Nitrosodiphenylamine	830		780	94	50-150
4-Bromophenyl-phenyleth	830		620	75	66-110
Hexachlorobenzene	830		710	86	67-112
Pentachlorophenol	830		500	60	19-130
Phenanthrene	830		630	76	70-115
Anthracene	830		640	77	63-117
Carbazole	830		720	87	62-122
Di-n-butylphthalate	830		620	75	70-120
Fluoranthene	830		630	76	64-121
Pyrene	830		700	84	66-120
Butylbenzylphthalate	830		690	83	63-123
3,3'-Dichlorobenzidine	830		340	41	8-124
Benzo(a)anthracene	830		670	81	50-129
Chrysene	830		670	81	41-150

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: S2PLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
bis(2-Ethylhexyl)phthal	830		610	73	64-115
Di-n-octylphthalate	830		550	66*	69-137
Benzo(b)fluoranthene	830		610	73	61-129
Benzo(k)fluoranthene	830		750	90	62-130
Benzo(a)pyrene	830		640	77	66-119
Indeno(1,2,3-cd)pyrene	830		600	72	56-128
Dibenzo(a,h)anthracene	830		590	71	58-128
Benzo(g,h,i)perylene	830		610	73	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 64 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SAG-B0221	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 1-May-03

Sample WOD-SS-101 Fluoranthene = 260 ug/kg

$$\text{Fluoranthene} = \frac{(104964)(40\ ng)(1000\ ul)}{(491280)(1.243)(30.7\ g)(1\ ml)(0.85)} = 263.5\ ng/g = ug/kg$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	770	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	770	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	770	U
83-32-9	Acenaphthene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	770	U
100-02-7	4-Nitrophenol	770	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	770	U
534-52-1	4,6-Dinitro-2-methylphenol	770	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	770	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	260	J
129-00-0	Pyrene	260	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	140	J
218-01-9	Chrysene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	190	J
207-08-9	Benzo(k)fluoranthene	100	J
50-32-8	Benzo(a)pyrene	150	J
193-39-5	Indeno(1,2,3-cd)pyrene	82	J
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	95	J

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS101

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: B0221-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2243

Level: (low/med) LOW Date Received: 02/07/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.42	420	J
2.		UNKNOWN	27.29	1000	J
3.	1058-61-3	STIGMAST-4-EN-3-ONE	29.72	210	NJ
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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30.					

Data File: S2D2243.D
Report Date: 18-Mar-2003 17:37

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030302A.B\S2D2243.D
Lab Smp Id: B0221-02A Client Smp ID: W0DSS101
Inj Date : 03-MAR-2003 02:18
Operator : WC Inst ID: s2.i
Smp Info : B0221-02A,W0DSS101,5702,WC,,B0221
Misc Info : 0,,,2,,,,30.7,15,,19-FEB-03,07-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030302A.B\s2_8270C.m
Meth Date : 03-Mar-2003 10:29 mtl Quant Type: ISTD
Cal Date : 27-FEB-2003 00:15 Cal File: S2D2106.D ✓
Als bottle: 47
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: 8270C.sub
Target Version: 4.03
Processing Host: TARGET11

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.700	Weight of sample extracted (g)
M	15.000	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
$ 3	2-Fluorophenol	112	5.401	5.390	(0.709)	107010	34.8441	1300
$ 5	Phenol-d5	99	6.988	6.998	(0.918)	130639	32.9019	1300(R)
$ 9	2-Chlorophenol-d4	132	7.215	7.225	(0.948)	139081	35.1657	1300
* 12	1,4-Dichlorobenzene-d4	152	7.614	7.625	(1.000)	126063	40.0000	
$ 14	1,2-Dichlorobenzene-d4	152	7.895	7.894	(1.037)	64723	21.5035	820(R)
$ 22	Nitrobenzene-d5	82	8.640	8.661	(0.862)	109482	23.5615	900
* 31	Naphthalene-d8	136	10.021	10.032	(1.000)	428882	40.0000	
$ 41	2-Fluorobiphenyl	172	12.191	12.202	(0.902)	249653	23.2953	890(R)
* 48	Acenaphthene-d10	164	13.519	13.540	(1.000)	275175	40.0000	
$ 60	2,4,6-Tribromophenol	330	15.127	15.149	(0.915)	91108	47.0610	1800
* 64	Phenanthrene-d10	188	16.531	16.541	(1.000)	491280	40.0000	
69	Fluoranthene	202	18.981	19.003	(1.148)	104964	6.87259	260(a)
71	Pyrene	202	19.435	19.456	(0.887)	114571	6.87200	260(a)

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: S2 Calibration Date(s): 02/26/03 02/27/03

Calibration Time(s): 2058 0015

LAB FILE ID: RRF160=S2D2102

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Diethylphthalate	* 1.603					1.567	4.9*
4-Chlorophenyl-phenylether	* 0.918					0.824	11.1*
Fluorene	* 1.657					1.481	12.1*
4-Nitroaniline	* 0.224					0.222	6.7*
4,6-Dinitro-2-methylphenol	* 0.188					0.167	15.2*
N-Nitrosodiphenylamine (1)	* 0.558					0.520	5.6*
4-Bromophenyl-phenylether	* 0.356					0.319	9.5*
Hexachlorobenzene	* 0.382					0.351	7.5*
Pentachlorophenol	* 0.168					0.129	28.2*
Phenanthrene	* 1.274					1.129	10.2*
Anthracene	* 1.228					1.095	9.1*
Carbazole	* 0.707					0.603	12.9*
Di-n-butylphthalate	* 1.526					1.425	5.7*
Fluoranthene	* 1.358					1.243	7.8*
Pyrene	* 1.228					1.169	3.6*
Butylbenzylphthalate	* 0.533					0.521	2.9*
3,3'-Dichlorobenzidine	* 0.466					0.408	11.8*
Benzo(a)anthracene	* 1.216					1.152	4.5*
Chrysene	* 1.019					0.976	3.9*
bis(2-Ethylhexyl)phthalate	* 0.799					0.732	6.5*
Di-n-octylphthalate	* 2.427					2.243	9.7*
Benzo(b)fluoranthene	* 1.953					1.833	8.5*
Benzo(k)fluoranthene	* 1.806					1.640	9.6*
Benzo(a)pyrene	* 1.598					1.493	7.8*
Indeno(1,2,3-cd)pyrene	* 1.371					1.352	7.9*
Dibenzo(a,h)anthracene	* 1.436					1.288	11.7*
Benzo(g,h,i)perylene	* 1.184					1.136	8.0*
Nitrobenzene-d5	0.444					0.433	3.7*
2-Fluorobiphenyl	* 1.712					1.558	10.1*
Terphenyl-d14	* 0.968					0.934	3.3*
Phenol-d5	* 1.294					1.260	3.9*
2-Fluorophenol	* 0.998					0.974	4.6*
2,4,6-Tribromophenol	* 0.177					0.158	10.5*
2-Chlorophenol-d4	* 1.287					1.255	3.0*
1,2-Dichlorobenzene-d4	* 1.017					0.955	6.3*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BG	AR1660BG	02/12/03	1458	6.79	22.15
23	BBLK1A	MB-5587	02/12/03	1753	6.80	22.15
24	B1ALCS	LCS-5587	02/12/03	1828	6.79	22.15
25	B1ALCSD	LCSD-5587	02/12/03	1904	6.79	22.15
26	RB-020603	B0221-10C	02/12/03	2125	6.79	22.15
27	AR1660BH	AR1660BH	02/13/03	0021	6.79	22.16
28	AR1660BU	AR1660BU	02/21/03	2226	6.78	22.13
29	BBLK1K	MB-5713	02/21/03	2337	6.78	22.13
30	B1KLCS	LCS-5713	02/22/03	0012	6.78	22.13
31	W0DSS101	B0221-02A	02/22/03	0234	6.77	22.13
32	SV1011315	B0221-03A	02/22/03	0309	6.77	22.13

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	W0DSS102	B0221-04A	02/22/03	0345	6.78	22.13
02	SV1021517	B0221-05A	02/22/03	0421	6.79	22.13
03	W0DSS103	B0221-06A	02/22/03	0456	6.77	22.13
04	AR1660BV	AR1660BV	02/22/03	0753	6.78	22.13
05	SV1031113	B0221-07A	02/22/03	0904	6.77	22.13
06	W0DSS104	B0221-08A	02/22/03	0939	6.77	22.12
07	SV1041012	B0221-09A	02/22/03	1014	6.77	22.12
08	AR1660BW	AR1660BW	02/22/03	1718	6.78	22.13
09						
10						
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31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BG	AR1660BG	02/12/03	1458	8.45	25.35
23	BBLK1A	MB-5587	02/12/03	1753	8.46	25.36
24	B1ALCS	LCS-5587	02/12/03	1828	8.46	25.36
25	B1ALCSD	LCSD-5587	02/12/03	1904	8.46	25.36
26	RB-020603	B0221-10C	02/12/03	2125	8.45	25.36
27	AR1660BH	AR1660BH	02/13/03	0021	8.45	25.37
28	AR1660BU	AR1660BU	02/21/03	2226	8.44	25.34
29	BBLK1K	MB-5713	02/21/03	2337	8.44	25.34
30	B1KLCS	LCS-5713	02/22/03	0012	8.44	25.34
31	W0DSS101	B0221-02A	02/22/03	0234	8.44	25.34
32	SV1011315	B0221-03A	02/22/03	0309	8.44	25.34

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	W0DSS102	B0221-04A	02/22/03	0345	8.44	25.34
02	SV1021517	B0221-05A	02/22/03	0421	8.45	25.34
03	W0DSS103	B0221-06A	02/22/03	0456	8.44	25.34
04	AR1660BV	AR1660BV	02/22/03	0753	8.44	25.34
05	SV1031113	B0221-07A	02/22/03	0904	8.44	25.34
06	W0DSS104	B0221-08A	02/22/03	0939	8.44	25.33
07	SV1041012	B0221-09A	02/22/03	1014	8.44	25.33
08	AR1660BW	AR1660BW	02/22/03	1718	8.44	25.34
09						
10						
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31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/12/03 Time: 1458

Lab File ID: E1D9214F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	11378.000	0.01	4.6	15.0	
(2)	24115.960	23219.000	0.01	3.7	15.0	
(3)	14202.320	13622.000	0.01	4.1	15.0	
Aroclor-1260	29455.240	28409.000	0.01	3.6	15.0	
(2)	40190.280	38670.000	0.01	3.8	15.0	
(3)	23147.960	22990.000	0.01	0.7	15.0	
Tetrachloro-m-xylene	503358.00	501200.00	0.01	0.4	15.0	
Decachlorobiphenyl	581298.00	481000.00	0.01	17.2	15.0	<-

FORM VII PCB

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/12/03 Time: 1458

Lab File ID: E1D9214R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	43118.000	0.01	8.2	15.0	
(2)	24183.600	21588.000	0.01	10.7	15.0	
(3)	20737.640	18468.000	0.01	10.9	15.0	
Aroclor-1260	45409.320	40695.000	0.01	10.4	15.0	
(2)	46248.440	41821.000	0.01	9.6	15.0	
(3)	64584.960	58262.000	0.01	9.8	15.0	
Tetrachloro-m-xylene	741526.00	656850.00	0.01	11.4	15.0	
Decachlorobiphenyl	711418.00	585100.00	0.01	17.8	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/13/03 Time: 0021

Lab File ID: E1D9229F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10918.000	0.01	8.5	15.0	
(2)	24115.960	22437.000	0.01	7.0	15.0	
(3)	14202.320	13121.000	0.01	7.6	15.0	
Aroclor-1260	29455.240	27709.000	0.01	5.9	15.0	
(2)	40190.280	37762.000	0.01	6.0	15.0	
(3)	23147.960	22355.000	0.01	3.4	15.0	
Tetrachloro-m-xylene	503358.00	488250.00	0.01	3.0	15.0	
Decachlorobiphenyl	581298.00	486600.00	0.01	16.3	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/13/03 Time: 0021

Lab File ID: E1D9229R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	41913.000	0.01	10.8	15.0
(2)	24183.600	20985.000	0.01	13.2	15.0
(3)	20737.640	18048.000	0.01	13.0	15.0
Aroclor-1260	45409.320	40021.000	0.01	11.9	15.0
(2)	46248.440	42265.000	0.01	8.6	15.0
(3)	64584.960	58813.000	0.01	8.9	15.0
Tetrachloro-m-xylene	741526.00	639550.00	0.01	13.8	15.0
Decachlorobiphenyl	711418.00	605750.00	0.01	14.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/21/03 Time: 2226

Lab File ID: E1D9390F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11753.000	0.01	1.5	15.0
(2)	24115.960	23515.000	0.01	2.5	15.0
(3)	14202.320	13702.000	0.01	3.5	15.0
Aroclor-1260	29455.240	28649.000	0.01	2.7	15.0
(2)	40190.280	44224.000	0.01	10.0	15.0
(3)	23147.960	23873.000	0.01	3.1	15.0
Tetrachloro-m-xylene	503358.00	518400.00	0.01	3.0	15.0
Decachlorobiphenyl	581298.00	570050.00	0.01	1.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/21/03 Time: 2226

Lab File ID: E1D9390R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45228.000	0.01	3.7	15.0
(2)	24183.600	22480.000	0.01	7.0	15.0
(3)	20737.640	19547.000	0.01	5.7	15.0
Aroclor-1260	45409.320	44445.000	0.01	2.1	15.0
(2)	46248.440	45738.000	0.01	1.1	15.0
(3)	64584.960	68012.000	0.01	5.3	15.0
Tetrachloro-m-xylene	741526.00	711200.00	0.01	4.1	15.0
Decachlorobiphenyl	711418.00	742550.00	0.01	4.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/22/03 Time: 0753

Lab File ID: E1D9406F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11536.000	0.01	3.3	15.0
(2)	24115.960	23109.000	0.01	4.2	15.0
(3)	14202.320	13557.000	0.01	4.5	15.0
Aroclor-1260	29455.240	28480.000	0.01	3.3	15.0
(2)	40190.280	42982.000	0.01	6.9	15.0
(3)	23147.960	23147.000	0.01	0.0	15.0
Tetrachloro-m-xylene	503358.00	507400.00	0.01	0.8	15.0
Decachlorobiphenyl	581298.00	557850.00	0.01	4.0	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/22/03 Time: 0753

Lab File ID: E1D9406R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44700.000	0.01	4.8	15.0
(2)	24183.600	22334.000	0.01	7.6	15.0
(3)	20737.640	19452.000	0.01	6.2	15.0
Aroclor-1260	45409.320	43797.000	0.01	3.6	15.0
(2)	46248.440	45197.000	0.01	2.3	15.0
(3)	64584.960	67308.000	0.01	4.2	15.0
Tetrachloro-m-xylene	741526.00	699300.00	0.01	5.7	15.0
Decachlorobiphenyl	711418.00	741300.00	0.01	4.2	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/22/03 Time: 1718

Lab File ID: E1D9422F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11624.000	0.01	2.6	15.0
(2)	24115.960	23321.000	0.01	3.3	15.0
(3)	14202.320	13714.000	0.01	3.4	15.0
Aroclor-1260	29455.240	29054.000	0.01	1.4	15.0
(2)	40190.280	43988.000	0.01	9.4	15.0
(3)	23147.960	23809.000	0.01	2.8	15.0
Tetrachloro-m-xylene	503358.00	514250.00	0.01	2.2	15.0
Decachlorobiphenyl	581298.00	567800.00	0.01	2.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Instrument ID: E1 Calibration Date: 02/22/03 Time: 1718

Lab File ID: E1D9422R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45495.000	0.01	3.1	15.0
(2)	24183.600	22677.000	0.01	6.2	15.0
(3)	20737.640	19993.000	0.01	3.6	15.0
Aroclor-1260	45409.320	44418.000	0.01	2.2	15.0
(2)	46248.440	46042.000	0.01	0.4	15.0
(3)	64584.960	68499.000	0.01	6.1	15.0
Tetrachloro-m-xylene	741526.00	717000.00	0.01	3.3	15.0
Decachlorobiphenyl	711418.00	755200.00	0.01	6.2	15.0

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1A	64	59	83	83			0
02	B1ALCS	76	67	81	81			0
03	B1ALCSD	74	65	81	81			0
04	RB-020603	81	77	75	75			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
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29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: B1ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	2.5		2.0	80	45-162
Aroclor-1260	2.5		2.0	80	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	2.5	2.0	80	0	40	45-162
Aroclor-1260	2.5	2.0	80	0	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) WATER Lab Sample ID: MB-5587

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9218F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/12/03

Concentrated Extract Volume: 2500 (uL) Date Analyzed: 02/12/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.25	U
11104-28-2	Aroclor-1221	0.25	U
11141-16-5	Aroclor-1232	0.25	U
53469-21-9	Aroclor-1242	0.25	U
12672-29-6	Aroclor-1248	0.25	U
11097-69-1	Aroclor-1254	0.25	U
11096-82-5	Aroclor-1260	0.25	U

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1K	82	82	81	89			0
02	B1KLCS	85	83	83	90			0
03	W0DSS101	72	71	70	76			0
04	SV1011315	72	71	70	75			0
05	W0DSS102	72	71	68	74			0
06	SV1021517	55	55	67	76			0
07	W0DSS103	79	78	83	80			0
08	SV1031113	76	75	72	79			0
09	W0DSS104	74	73	68	75			0
10	SV1041012	79	78	73	80			0
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (42-147)
S2 (DCB) = Decachlorobiphenyl (29-155)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix Spike - Sample No.: B1KLCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		280	85	62-155
Aroclor-1260	330		300	91	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0221

Matrix: (soil/water) SOIL Lab Sample ID: MB-5713

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9392F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **JUNE 5, 2003**

FROM: **BERNARD F SPADA III** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOC/SVOC/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG B0239

SAMPLES: 1/Aqueous

TB021003*

6/Soil

WOD-SS-106	WOD-SS-107	WOD-SS-108
WOD-SU-106-0608	WOD-SU-107-0608	WOD-SU-108-0608

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0239 consists of one (1) trip blank, and six (6) environmental soil samples. The soil samples were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The sample was collected by Tetra Tech NUS on February 10, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed with the exception of those qualified as rejected. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- Recovery of 3,3'-dichlorobenzidine was <10% in the MS/MSD pair. The result for 3,3'-dichlorobenzidine was qualified as rejected (UR) in the un-spiked sample WOD-SS-108.

Minor

- The following compounds were detected in the solid method blank and field blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	3.0 ug/kg	30 ug/kg
Acetone*	14 ug/kg	140 ug/kg

Sample aliquot, and dilution factors were taken into consideration when applying the blank action levels. Positive results for methylene chloride and acetone below the blank action level were qualified as non-detected, (B).

* Compound was detected in the trip blank.

- Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated (J).

- The aqueous volatile initial calibration performed on February 20 exceeded the 30% (but was <50%) relative standard deviation quality control criteria for acetone. The positive result for acetone in the trip blank was qualified as estimated (J).

- The soil semivolatile continuing calibration performed on March 10 at 01:01 exceeded the 25% (but was <50%) difference quality control criteria for benzaldehyde and 4-nitroaniline. The positive result for benzaldehyde was qualified as estimated (J) in sample WOD-SS-106.

- The percent recovery of internal standard 1,4-dichlorobenzene-d4 was below the -50% quality control criteria in samples WOD-SS-106 and WOD-SS-108. All non-detected results for 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene were qualified as estimated (UJ) in the aforementioned samples.

Notes

The soil volatile continuing calibration performed on February 12 at 11:17 exceeded the 25% (but was <50%) difference quality control criteria for bromomethane. No qualifications were made on this basis because the aqueous result for bromomethane was non-detected.

The percent recovery of chloroethane exceeded the laboratory's quality control criteria in the blank spike sample V1RLCS. No qualifications were made on this basis because all results for chloroethane were non-detected.

The percent recovery of 1,1,2,2-tetrachloroethane and 1,2,4-trichlorobenzene were outside the laboratory's quality control criteria in the MS/MSD of sample WOD-SS-108. No qualifications were made on this basis because the blank spike was compliant for the aforementioned compounds.

The percent recovery of styrene was outside the laboratory's quality control criteria in the MSD of sample WOD-SS-108. No qualifications were made on this basis because the blank spike was compliant.

The RPD of acetone exceeded the laboratory's quality control criteria in the MS/MSD of sample WOD-SS-108. No qualifications were made on this basis because the percent recoveries were compliant.

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The soil semivolatile initial calibration performed on March 9 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for hexachlorocyclopentadiene. No qualifications were made on this basis because the associated results were non-detected.

Several compounds fell below the laboratory's percent recovery quality control criteria in the MS/MSD of sample WOD-SS-108. Recovery of 3-nitroaniline was <10% in the MS, AND THE recovery of hexachlorocyclopentadiene was <10% in the MSD. No qualifications were made on this basis because the blank spike was compliant.

6-5-03 JPI

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances, method blank contamination, internal standard non-compliances, and MS/MSD non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:
Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0239 MEDIA: WATER DATA FRACTION:

nsample	TB-021003
samp_date	2/10/2003
lab_id	B0239-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	14		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-021003
samp_date	2/10/2003
lab_id	B0239-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	29	J	C
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-106	nsample	WOD-SS-106	nsample	WOD-SS-107
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-02B	lab_id	B0239-02B	lab_id	B0239-04B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	UJ	N
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	UJ	N
1,3-DICHLOROBENZENE	10	UJ	N
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	10	U	
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	18	B	B
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-107
samp_date	2/10/2003
lab_id	B0239-04B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SS-108
samp_date	2/10/2003
lab_id	B0239-06B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	UJ	N
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	UJ	N
1,2,4-TRIMETHYLBENZENE	11	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	N
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	UJ	N
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	UJ	N
1,3-DICHLOROBENZENE	11	UJ	N
1,4-DICHLOROBENZENE	11	UJ	N
2-BUTANONE	2	J	P
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	25	B	B
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

nsample	WOD-SS-108
samp_date	2/10/2003
lab_id	B0239-06B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	4	J	P
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-106-0608	nsample	WOD-SU-106-0608	nsample	WOD-SU-107-0608
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-03B	lab_id	B0239-03B	lab_id	B0239-05B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	93	Pct_Solids	93	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	10	U	
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	2	B	A
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	12	U	
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-107-0608
samp_date	2/10/2003
lab_id	B0239-05B
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	4	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SU-108-0608
samp_date	2/10/2003
lab_id	B0239-07B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	16	B	B
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SU-108-0608
samp_date	2/10/2003
lab_id	B0239-07B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	6	B	A
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-106	nsample	WOD-SS-106	nsample	WOD-SS-106
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-02A	lab_id	B0239-02A	lab_id	B0239-02A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	930	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	930	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	930	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	930	U	
4,6-DINITRO-2-METHYLPHENOL	930	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	930	U	
4-NITROPHENOL	930	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	270	J	CP
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	930	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-107	nsample	WOD-SS-107	nsample	WOD-SS-107
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-04A	lab_id	B0239-04A	lab_id	B0239-04A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	91	Pct_Solids	91	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	43	J	P
BENZO(A)PYRENE	47	J	P
BENZO(B)FLUORANTHENE	59	J	P
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	41	J	P
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	65	J	P
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	86	J	P

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-108	nsample	WOD-SS-108	nsample	WOD-SS-108
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-06A	lab_id	B0239-06A	lab_id	B0239-06A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	970	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	970	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	390	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	970	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	UR	D
3-NITROANILINE	970	U	
4,6-DINITRO-2-METHYLPHENOL	970	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	970	U	
4-NITROPHENOL	970	U	
ACENAPHTHENE	390	U	
ACENAPHTHYLENE	390	U	
ACETOPHENONE	380	U	
ANTHRACENE	390	U	
ATRAZINE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	380	U	
BENZO(A)ANTHRACENE	390	U	
BENZO(A)PYRENE	390	U	
BENZO(B)FLUORANTHENE	390	U	
BENZO(G,H,I)PERYLENE	390	U	
BENZO(K)FLUORANTHENE	390	U	
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	380	U	
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	390	U	
DIBENZO(A,H)ANTHRACENE	390	U	
DIBENZOFURAN	390	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	U	
FLUORANTHENE	390	U	
FLUORENE	390	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	390	U	
ISOPHORONE	380	U	
NAPHTHALENE	390	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	970	U	
PHENANTHRENE	390	U	
PHENOL	380	U	
PYRENE	390	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-106-0608	nsample	WOD-SU-106-0608	nsample	WOD-SU-106-0608
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-03A	lab_id	B0239-03A	lab_id	B0239-03A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	93	Pct_Solids	93	Pct_Solids	93
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	340	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	340	U	
2,4,5-TRICHLOROPHENOL	870	U	
2,4,6-TRICHLOROPHENOL	340	U	
2,4-DICHLOROPHENOL	340	U	
2,4-DIMETHYLPHENOL	340	U	
2,4-DINITROPHENOL	870	U	
2,4-DINITROTOLUENE	340	U	
2,6-DINITROTOLUENE	340	U	
2-CHLORONAPHTHALENE	340	U	
2-CHLOROPHENOL	340	U	
2-METHYLNAPHTHALENE	340	U	
2-METHYLPHENOL	340	U	
2-NITROANILINE	870	U	
2-NITROPHENOL	340	U	
3,3'-DICHLOROBENZIDINE	340	U	
3-NITROANILINE	870	U	
4,6-DINITRO-2-METHYLPHENOL	870	U	
4-BROMOPHENYL PHENYL ETHER	340	U	
4-CHLORO-3-METHYLPHENOL	340	U	
4-CHLOROANILINE	340	U	
4-CHLOROPHENYL PHENYL ETHER	340	U	
4-METHYLPHENOL	340	U	
4-NITROANILINE	870	U	
4-NITROPHENOL	870	U	
ACENAPHTHENE	340	U	
ACENAPHTHYLENE	340	U	
ACETOPHENONE	340	U	
ANTHRACENE	340	U	
ATRAZINE	340	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	340	U	
BENZO(A)ANTHRACENE	340	U	
BENZO(A)PYRENE	340	U	
BENZO(B)FLUORANTHENE	340	U	
BENZO(G,H,I)PERYLENE	340	U	
BENZO(K)FLUORANTHENE	340	U	
BIS(2-CHLOROETHOXY)METHANE	340	U	
BIS(2-CHLOROETHYL)ETHER	340	U	
BIS(2-ETHYLHEXYL)PHTHALATE	340	U	
BUTYL BENZYL PHTHALATE	340	U	
CAPROLACTAM	340	U	
CARBAZOLE	340	U	
CHRYSENE	340	U	
DIBENZO(A,H)ANTHRACENE	340	U	
DIBENZOFURAN	340	U	
DIETHYL PHTHALATE	340	U	
DIMETHYL PHTHALATE	340	U	
DI-N-BUTYL PHTHALATE	340	U	
DI-N-OCTYL PHTHALATE	340	U	
FLUORANTHENE	340	U	
FLUORENE	340	U	
HEXACHLOROBENZENE	340	U	
HEXACHLOROBUTADIENE	340	U	
HEXACHLOROCYCLOPENTADIENE	340	U	
HEXACHLOROETHANE	340	U	
INDENO(1,2,3-CD)PYRENE	340	U	
ISOPHORONE	340	U	
NAPHTHALENE	340	U	
NITROBENZENE	340	U	
N-NITROSO-DI-N-PROPYLAMINE	340	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	340	U	
PENTACHLOROPHENOL	870	U	
PHENANTHRENE	340	U	
PHENOL	340	U	
PYRENE	340	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-107-0608	nsample	WOD-SU-107-0608	nsample	WOD-SU-107-0608
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-05A	lab_id	B0239-05A	lab_id	B0239-05A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	92	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-108-0608	nsample	WOD-SU-108-0608	nsample	WOD-SU-108-0608
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-07A	lab_id	B0239-07A	lab_id	B0239-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	93	Pct_Solids	93	Pct_Solids	93
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	U	
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	WOD-SS-106	nsample	WOD-SS-107	nsample	WOD-SS-108
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-02A	lab_id	B0239-04A	lab_id	B0239-06A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	91	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	WOD-SU-106-0608	nsample	WOD-SU-107-0608	nsample	WOD-SU-108-0608
samp_date	2/10/2003	samp_date	2/10/2003	samp_date	2/10/2003
lab_id	B0239-03A	lab_id	B0239-05A	lab_id	B0239-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	93	Pct_Solids	92	Pct_Solids	93
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) WATER Lab Sample ID: B0239-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5036

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. _____ Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	29	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) WATER Lab Sample ID: B0239-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5036

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. _____ Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-021003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) WATER Lab Sample ID: B0239-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5036

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. _____ Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.93	3	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2509

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2509

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02B

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V1F2509

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 11 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2511

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2511

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V1F2511

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 9 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.86	4	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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11.					
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13.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V1F2513

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	25	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	2	J
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V1F2513

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	4	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V1F2513

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 15 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2510

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	JB
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2510

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03B

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V1F2510

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V1F2512

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V1F2512

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V1F2512

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 8 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.55	9	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2516

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	JB
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2516

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V1F2516

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: not dec. 7 Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.55	6	NJ
2.					
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2451

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	930	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	930	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	930	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	930	U
100-02-7	4-Nitrophenol	930	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2451

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	930	U
534-52-1	4,6-Dinitro-2-methylphenol	930	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	930	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	270	J
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2451

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.97	440	J
2.		UNKNOWN	23.40	460	J
3.		UNKNOWN	27.59	220	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2447

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2447

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	65	J
129-00-0	Pyrene	86	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	43	J
218-01-9	Chrysene	41	J
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	59	J
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	47	J
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2447

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.96	430	J
2.	120-58-1	1,3-BENZODIOXOLE, 5-(1-PROPE	11.08	1400	NJ
3.		UNKNOWN	23.37	360	J
4.		UNKNOWN	26.84	290	J
5.		UNKNOWN	27.61	780	J
6.	58-22-0	TESTOSTERONE	29.11	260	NJ
7.		UNKNOWN	30.59	150	J
8.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2448

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	970	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2448

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	380	U
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2448

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.96	380	J
2.		UNKNOWN	14.80	510	J
3.		UNKNOWN	20.66	160	J
4.		UNKNOWN	23.30	210	J
5.		UNKNOWN	23.37	310	J
6.		UNKNOWN	26.71	160	J
7.	83-47-6	.GAMMA.-SITOSTEROL	27.57	420	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2444

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2444

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	U
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U
92-52-4	1,1'-Biphenyl	340	U
98-86-2	Acetophenone	340	U
1912-24-9	Atrazine	340	U
100-52-7	Benzaldehyde	340	U
105-60-2	Caprolactum	340	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2444

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 03/10/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.95	400	J
2.		UNKNOWN	20.66	150	J
3.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.37	320	NJ
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2445

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2445

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1070608

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2445

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.97	950	J
2.		UNKNOWN	15.21	360	J
3.		UNKNOWN	23.37	290	J
4.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2446

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2446

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2446

Level: (low/med) LOW Date Received: 02/11/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.95	330	J
2.		UNKNOWN	23.37	260	J
3.					
4.					
5.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9411F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9413F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-06A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9415F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1060608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-03A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9412F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1070608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-05A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9414F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: B0239-07A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: E1D9424F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/11/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/20/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/22/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.
-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

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The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

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Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0239

HOLDING TIME

04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0212LCSS	LCS	B0239	HG	/ /	02/12/03	02/13/03	0	1	0
MG/KG	PBS	0212PBS	M_BLANK	B0239	HG	/ /	02/12/03	02/13/03	0	1	0
MG/KG	WOD-SS-106	B0239-02A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-107	B0239-04A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-108	B0239-06A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-108DUP	B0239-06ADUP	DUPLICATE	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
%	LCSS	0212LCSS	LCS	B0239	M	/ /	02/12/03	02/12/03	0	0	0
MG/KG	PBS	0212PBS	M_BLANK	B0239	M	/ /	02/12/03	02/12/03	0	0	0
MG/KG	WOD-SS-106	B0239-02A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-107	B0239-04A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-108	B0239-06A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-108DUP	B0239-06ADUP	DUPLICATE	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
UG/L	WOD-SS-108L	B0239-06AL	NORMAL	B0239	M	02/10/03	02/13/03	02/13/03	3	0	3
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
%	SBLK2C	MB-5778	M_BLANK	B0239	OS	/ /	02/24/03	03/10/03	0	14	0
%	SBLK2CLCS	LCS-5778	LCS	B0239	OS	/ /	02/24/03	03/10/03	0	14	0
%	WOD-SS-106	B0239-02A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-107	B0239-04A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108	B0239-06A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108MSD	B0239-06AMSD	MSD	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
UG/L	TB-021003	B0239-01A	NORMAL	B0239	OV	02/10/03	02/20/03	02/20/03	10	0	10
%	VBLK1R	V1B0212A	M_BLANK	B0239	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK1RLCS	V1L0212A	LCS	B0239	OV	/ /	02/12/03	02/12/03	0	0	0
UG/L	VBLK6H	V6B0220A	M_BLANK	B0239	OV	/ /	02/20/03	02/20/03	0	0	0
%	VBLK6HLCS	V6L0220A	LCS	B0239	OV	/ /	02/20/03	02/20/03	0	0	0
%	WOD-SS-106	B0239-02B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-107	B0239-04B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108	B0239-06B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108MS	B0239-06BMS	MS	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108MSD	B0239-06BMSD	MSD	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-106-0608	B0239-03B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-107-0608	B0239-05B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-108-0608	B0239-07B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	BBLK1J	MB-5734	M_BLANK	B0239	PCB	/ /	02/20/03	02/21/03	0	1	0
%	BBLK1JLCS	LCS-5734	LCS	B0239	PCB	/ /	02/20/03	02/21/03	0	1	0
%	WOD-SS-106	B0239-02A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-107	B0239-04A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108	B0239-06A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108MSD	B0239-06AMSD	MSD	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
S.U.	WOD-SS-106	B0239-02A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1
S.U.	WOD-SS-107	B0239-04A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1
S.U.	WOD-SS-108	B0239-06A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

March 21, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0239

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

MITKEM CORPORATION

* Data Summary Pack *

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0239

Mitkem Project ID: B0239

March 21, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and six soil samples that were collected on February 10, 2003, and received at Mitkem on February 11, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of chloroethane in V1RLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of acetone.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally low recovery of 2-fluorobiphenyl on samples WOD-SS-108MS and WOD-SS-108MSD and high recovery of 2-fluorophenol in the method blank SBLK2C.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Most spike recoveries in the matrix spike and matrix spike duplicate were not within the QC limits. Replicate RPDs were within the QC limits with the exception of 3-nitroaniline, 4-nitroaniline and 3,3'-dichlorobenzidine. Spike recoveries outside of QC limits is most likely due to matrix effect.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-108. Spike recoveries were within the QC limits with the exception of antimony, arsenic, cadmium, lead, selenium and thallium. These elements are flagged with an "N" flag on Form 1's. Post digest spike was performed with spike recoveries within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-108. Replicate RPDs were within the QC limits.

Sample analysis: potassium was outside of QC limits in the serial dilution. Potassium is flagged with an "E" flag on Form 1's. No other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/21/03

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919658		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0239
NAME: Garth Glenn	FAX: 610 4919645		NAME: ~~Foster~~ cm 2/19/03	FAX:	
ADDRESS: 600 Clarke Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406			CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 846	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl; TCL VOC; 5 gram Encore Sampler; TCL VOC; 40z amber glass wide mouth; SVOC + PCB; 40z Amber glass wide mouth; TAL Metals; 40z amber glass w/teflon; TOC 4oz moisture; 80z Amber glass; Grain Size; 40z Amber glass wide mouth; TAL Metals & Mercury	COMMENTS
TB-021003	2/10/03 / 0900		X	X			01	2	2	Trip Blank
WOD-SS-106	2/10/03 / 1145		X		X		02	7	3 i* 1* 1* 1	
WOD-SU-106-0608	2/10/03 / 1225		X		X		03	5	3 1 1	
WOD-SS-107	2/10/03 / 1245		X		X		04	7	3 1 1 1 1	
WOD-SU-107-0608	2/10/03 / 1305		X		X		05	5	3 1 1	
WOD-SS-108	2/10/03 / 1345		X		X		06	16	9 2 2 2 1	Do MS/MSD
WOD-SU-108-0608	2/10/03 / 1415		X		X		07	5	3 1 1	
	/									
	/									
	/									
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	2/10/03 / 1700	Nathan Reynolds	2-11-03 / 0900	Laboratory supplied Blank water for TB shipped via Federal Express Airbill No 8286 8471 0210	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID: V6C5020 BFB Injection Date: 02/20/03

Instrument ID: V6 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	6.8 (6.9)1
176	95.0 - 101.0% of mass 174	97.3 (99.7)1
177	5.0 - 9.0% of mass 176	7.6 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506H	V6S0220A	V6C5021	02/20/03	0952
02	VSTD0056H	V6S0220B	V6C5022	02/20/03	1042
03	VSTD2006H	V6S0220D	V6C5024	02/20/03	1141
04	VSTD1006H	V6S0220E	V6C5025	02/20/03	1212
05	VSTD0206H	V6S0220F	V6C5026	02/20/03	1242
06	VBLK6H	V6B0220A	V6C5027	02/20/03	1313
07	V6HLCS	V6L0220A	V6C5028	02/20/03	1345
08	TB-021003	B0239-01A	V6C5036	02/20/03	1800
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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.221	0.229	0.207	0.218	0.200	0.215	5.3
*	Chloromethane	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
	Vinyl Chloride	0.474	0.477	0.394	0.425	0.390	0.432	9.7
	Bromomethane	0.472	0.388	0.355	0.358	0.325	0.380	14.8
	Chloroethane	0.302	0.312	0.296	0.293	0.270	0.295	5.3
	Trichlorofluoromethane	0.688	0.702	0.628	0.659	0.613	0.658	5.8
	1,1-Dichloroethene	0.443	0.492	0.416	0.431	0.420	0.440	7.0
	Acetone	0.145	0.090	0.121	0.072	0.066	0.099	33.8
	Carbon Disulfide	0.806	0.846	0.673	0.768	0.716	0.762	9.0
	Methylene Chloride	0.300	0.285	0.279	0.263	0.255	0.276	6.4
	trans-1,2-Dichloroethene	0.276	0.284	0.262	0.283	0.289	0.279	3.8
	Methyl tert-butyl ether	0.733	0.759	0.825	0.751	0.707	0.755	5.8
*	1,1-Dichloroethane	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
	2-Butanone	0.095	0.080	0.108	0.080	0.076	0.088	15.4
	cis-1,2-Dichloroethene	0.288	0.287	0.287	0.292	0.289	0.289	0.8
	Chloroform	0.477	0.501	0.498	0.489	0.479	0.489	2.2
	1,1,1-Trichloroethane	0.385	0.415	0.353	0.390	0.394	0.387	5.8
	Carbon Tetrachloride	0.397	0.401	0.370	0.410	0.429	0.401	5.3
	1,2-Dichloroethane	0.357	0.380	0.407	0.370	0.365	0.376	5.1
	Benzene	0.996	1.052	1.030	1.033	1.012	1.025	2.1
	Trichloroethene	0.296	0.303	0.283	0.294	0.303	0.296	2.8
	1,2-Dichloropropane	0.246	0.260	0.263	0.258	0.257	0.257	2.6
	Bromodichloromethane	0.358	0.380	0.388	0.366	0.364	0.371	3.4
	cis-1,3-Dichloropropene	0.393	0.420	0.454	0.424	0.426	0.423	5.1
	4-Methyl-2-pentanone	0.159	0.157	0.203	0.161	0.154	0.167	12.2
	Toluene	1.086	1.149	1.144	1.120	1.068	1.113	3.2
	trans-1,3-Dichloropropene	0.343	0.374	0.422	0.381	0.389	0.382	7.5
	1,1,2-Trichloroethane	0.198	0.218	0.235	0.211	0.212	0.215	6.2
	Tetrachloroethene	0.329	0.333	0.282	0.319	0.324	0.317	6.4
	2-Hexanone	0.134	0.133	0.163	0.129	0.123	0.136	11.4
	Dibromochloromethane	0.355	0.359	0.377	0.348	0.336	0.355	4.2
	1,2-Dibromoethane	0.276	0.290	0.313	0.271	0.258	0.282	7.4
*	Chlorobenzene	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
	Ethylbenzene	0.494	0.536	0.495	0.507	0.511	0.509	3.3
	m,p-Xylene	0.620	0.659	0.611	0.645	0.654	0.638	3.4
	o-Xylene	0.608	0.648	0.619	0.644	0.681	0.640	4.4
	Xylene (Total)	0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.954	1.080	1.091	1.074	1.061	1.052	5.3
Bromoform	*	0.213	0.231	0.257	0.231	0.229	0.232	6.8*
Isopropylbenzene		1.532	1.587	1.452	1.479	1.396	1.489	4.9
1,1,2,2-Tetrachloroethane	*	0.549	0.600	0.643	0.553	0.542	0.577	7.5*
1,3,5-Trimethylbenzene		2.373	2.532	2.271	2.375	2.311	2.372	4.2
1,2,4-Trimethylbenzene		2.470	2.594	2.412	2.400	2.316	2.438	4.2
1,3-Dichlorobenzene		1.469	1.567	1.477	1.493	1.482	1.498	2.7
1,4-Dichlorobenzene		1.583	1.616	1.529	1.504	1.461	1.539	4.0
1,2-Dichlorobenzene		1.360	1.468	1.427	1.398	1.381	1.407	3.0
1,2-Dibromo-3-chloropropane		0.106	0.096	0.116	0.092	0.088	0.100	11.1
1,2,4-Trichlorobenzene		0.957	0.967	0.925	0.901	0.912	0.932	3.1
1,1,2-Trichlo-1,2,2-trifluor		0.467	0.504	0.378	0.451	0.423	0.445	10.6
Methyl Acetate		0.194	0.197	0.202	0.167	0.155	0.183	11.3
Cyclohexane		0.415	0.407	0.362	0.411	0.402	0.399	5.4
Methylcyclohexane		0.448	0.458	0.424	0.468	0.465	0.453	3.9
Dibromofluoromethane		0.204	0.266	0.277	0.271	0.262	0.256	11.6
1,2-Dichloroethane-d4		0.047	0.060	0.065	0.058	0.057	0.057	11.1
Toluene-d8		0.916	1.191	1.162	1.179	1.055	1.101	10.6
Bromofluorobenzene		0.345	0.421	0.444	0.432	0.413	0.411	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V6 Calibration Date: 02/20/03 Time: 0952

Lab File ID: V6C5021 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.215	0.207	0.01	3.7	20.0	
Chloromethane	0.393	0.343	0.1	12.7	20.0	
Vinyl Chloride	0.432	0.394	0.01	8.8	20.0	
Bromomethane	0.380	0.355	0.01	6.6	20.0	
Chloroethane	0.295	0.296	0.01	0.3	20.0	
Trichlorofluoromethane	0.658	0.628	0.01	4.6	20.0	
1,1-Dichloroethene	0.440	0.416	0.01	5.4	20.0	
Acetone	0.099	0.121	0.01	22.2	20.0	<-
Carbon Disulfide	0.762	0.673	0.01	11.7	20.0	
Methylene Chloride	0.276	0.279	0.01	1.1	20.0	
trans-1,2-Dichloroethene	0.279	0.262	0.01	6.1	20.0	
Methyl tert-butyl ether	0.755	0.825	0.01	9.3	20.0	
1,1-Dichloroethane	0.456	0.459	0.1	0.6	20.0	
2-Butanone	0.088	0.108	0.01	22.7	20.0	<-
cis-1,2-Dichloroethene	0.289	0.287	0.01	0.7	20.0	
Chloroform	0.489	0.498	0.01	1.8	20.0	
1,1,1-Trichloroethane	0.387	0.353	0.01	8.8	20.0	
Carbon Tetrachloride	0.401	0.370	0.01	7.7	20.0	
1,2-Dichloroethane	0.376	0.407	0.01	8.2	20.0	
Benzene	1.025	1.030	0.01	0.5	20.0	
Trichloroethene	0.296	0.283	0.01	4.4	20.0	
1,2-Dichloropropane	0.257	0.263	0.01	2.3	20.0	
Bromodichloromethane	0.371	0.388	0.01	4.6	20.0	
cis-1,3-Dichloropropene	0.423	0.454	0.01	7.3	20.0	
4-Methyl-2-pentanone	0.167	0.203	0.01	21.6	20.0	<-
Toluene	1.113	1.144	0.01	2.8	20.0	
trans-1,3-Dichloropropene	0.382	0.422	0.01	10.5	20.0	
1,1,2-Trichloroethane	0.215	0.235	0.01	9.3	20.0	
Tetrachloroethene	0.317	0.282	0.01	11.0	20.0	
2-Hexanone	0.136	0.163	0.01	19.8	20.0	
Dibromochloromethane	0.355	0.377	0.01	6.2	20.0	
1,2-Dibromoethane	0.282	0.313	0.01	11.0	20.0	
Chlorobenzene	0.979	0.973	0.3	0.6	20.0	
Ethylbenzene	0.509	0.495	0.01	2.8	20.0	
m,p-Xylene	0.638	0.611	0.01	4.2	20.0	
o-Xylene	0.640	0.619	0.01	3.3	20.0	
Xylene (Total)	0.639	0.613	0.01	4.1	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V6 Calibration Date: 02/20/03 Time: 0952

Lab File ID: V6C5021 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.052	1.091	0.01	3.7	20.0
Bromoform	0.232	0.257	0.1	10.8	20.0
Isopropylbenzene	1.489	1.452	0.01	2.5	20.0
1,1,2,2-Tetrachloroethane	0.577	0.643	0.3	11.4	20.0
1,3,5-Trimethylbenzene	2.372	2.271	0.01	4.2	20.0
1,2,4-Trimethylbenzene	2.438	2.412	0.01	1.1	20.0
1,3-Dichlorobenzene	1.498	1.477	0.01	1.4	20.0
1,4-Dichlorobenzene	1.539	1.529	0.01	0.6	20.0
1,2-Dichlorobenzene	1.407	1.427	0.01	1.4	20.0
1,2-Dibromo-3-chloropropane	0.100	0.116	0.01	16.0	20.0
1,2,4-Trichlorobenzene	0.932	0.925	0.01	0.8	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.445	0.378	0.01	15.0	20.0
Methyl Acetate	0.183	0.202	0.01	10.4	20.0
Cyclohexane	0.399	0.362	0.01	9.3	20.0
Methylcyclohexane	0.453	0.424	0.01	6.4	20.0
Dibromofluoromethane	0.256	0.277	0.01	8.2	20.0
1,2-Dichloroethane-d4	0.057	0.065	0.01	14.0	20.0
Toluene-d8	1.101	1.162	0.01	5.5	20.0
Bromofluorobenzene	0.411	0.444	0.01	8.0	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID: V1F2360 BFB Injection Date: 02/06/03

Instrument ID: V1 BFB Injection Time: 1302

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.5
75	30.0 - 60.0% of mass 95	39.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.0
175	5.0 - 9.0% of mass 174	5.7 (7.0)1
176	95.0 - 101.0% of mass 174	77.0 (95.1)1
177	5.0 - 9.0% of mass 176	4.7 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501M	V1S0206A	V1F2361	02/06/03	1331
02	VSTD0051M	V1S0206B	V1F2362	02/06/03	1402
03	VSTD2001M	V1S0206C	V1F2363	02/06/03	1433
04	VSTD1001M	V1S0206D	V1F2364	02/06/03	1504
05	VSTD0201M	V1S0206E	V1F2365	02/06/03	1536
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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V1 Calibration Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Calibration Time(s): 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2362 RRF20 =V1F2365
RRF50 =V1F2361 RRF100=V1F2364 RRF200=V1F2363

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.190	0.165	0.167	0.170	0.170	0.172	6.0
*	Chloromethane	0.402	0.394	0.405	0.427	0.398	0.405	3.2*
	Vinyl Chloride	0.329	0.301	0.299	0.319	0.301	0.310	4.3
	Bromomethane	0.082	0.086	0.068	0.057	0.054	0.069	20.9
	Chloroethane	0.110	0.085	0.091	0.123	0.090	0.100	16.2
	Trichlorofluoromethane	0.162	0.181	0.202	0.206	0.200	0.190	9.7
	1,1-Dichloroethene	0.243	0.224	0.229	0.232	0.242	0.234	3.6
	Acetone	0.125	0.096	0.090	0.074	0.080	0.093	21.4
	Carbon Disulfide	0.702	0.619	0.653	0.628	0.612	0.643	5.7
	Methylene Chloride	0.392	0.359	0.360	0.328	0.335	0.355	7.1
	trans-1,2-Dichloroethene	0.308	0.292	0.293	0.281	0.285	0.292	3.5
	Methyl tert-butyl ether	0.491	0.519	0.475	0.468	0.524	0.495	5.1
*	1,1-Dichloroethane	0.523	0.496	0.494	0.476	0.490	0.496	3.4*
	2-Butanone	0.211	0.197	0.204	0.172	0.184	0.194	8.2
	cis-1,2-Dichloroethene	0.334	0.324	0.315	0.306	0.314	0.319	3.3
	Chloroform	0.477	0.454	0.451	0.428	0.440	0.450	4.0
	1,1,1-Trichloroethane	0.274	0.256	0.264	0.243	0.249	0.257	4.8
	Carbon Tetrachloride	0.265	0.238	0.243	0.229	0.236	0.242	5.8
	1,2-Dichloroethane	0.286	0.289	0.280	0.263	0.272	0.278	3.8
	Benzene	1.239	1.190	1.187	1.138	1.166	1.184	3.2
	Trichloroethene	0.303	0.293	0.288	0.279	0.290	0.291	2.9
	1,2-Dichloropropane	0.321	0.315	0.310	0.298	0.308	0.310	2.8
	Bromodichloromethane	0.362	0.358	0.353	0.345	0.361	0.356	2.0
	cis-1,3-Dichloropropene	0.497	0.495	0.493	0.482	0.515	0.496	2.4
	4-Methyl-2-pentanone	0.351	0.374	0.392	0.354	0.385	0.371	4.9
	Toluene	1.207	1.169	1.152	1.118	1.174	1.164	2.8
	trans-1,3-Dichloropropene	0.417	0.419	0.419	0.404	0.433	0.418	2.4
	1,1,2-Trichloroethane	0.271	0.277	0.266	0.257	0.277	0.270	3.0
	Tetrachloroethene	0.338	0.306	0.305	0.295	0.310	0.311	5.2
	2-Hexanone	0.344	0.383	0.390	0.342	0.369	0.366	6.0
	Dibromochloromethane	0.423	0.436	0.421	0.400	0.430	0.422	3.3
	1,2-Dibromoethane	0.396	0.407	0.399	0.370	0.411	0.397	4.1
*	Chlorobenzene	1.127	1.081	1.048	0.988	1.023	1.053	5.1*
	Ethylbenzene	0.568	0.534	0.534	0.500	0.521	0.531	4.7
	m,p-Xylene	0.735	0.684	0.670	0.633	0.656	0.676	5.7
	o-Xylene	0.736	0.685	0.660	0.634	0.656	0.674	5.8
	Xylene (Total)	0.736	0.684	0.667	0.633	0.656	0.675	5.7

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V1 Calibration Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Calibration Time(s): 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2362 RRF20 =V1F2365
RRF50 =V1F2361 RRF100=V1F2364 RRF200=V1F2363

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		1.170	1.150	1.149	1.099	1.162	1.146	2.4
Bromoform	*	0.294	0.316	0.311	0.289	0.320	0.306	4.5*
Isopropylbenzene		1.681	1.560	1.578	1.480	1.537	1.567	4.7
1,1,2,2-Tetrachloroethane	*	1.160	1.156	1.031	0.986	1.050	1.077	7.2*
1,3,5-Trimethylbenzene		2.678	2.504	2.189	2.258	2.290	2.384	8.5
1,2,4-Trimethylbenzene		2.792	2.566	2.302	2.379	2.442	2.496	7.7
1,3-Dichlorobenzene		1.795	1.691	1.608	1.555	1.638	1.657	5.5
1,4-Dichlorobenzene		2.044	1.801	1.568	1.607	1.655	1.735	11.2
1,2-Dichlorobenzene		1.861	1.689	1.497	1.545	1.587	1.636	8.8
1,2-Dibromo-3-chloropropane		0.159	0.160	0.148	0.137	0.153	0.151	6.2
1,2,4-Trichlorobenzene		1.286	1.067	1.110	1.013	1.042	1.104	9.8
1,1,2-Trichlo-1,2,2-trifluor		0.140	0.165	0.180	0.182	0.186	0.171	11.0
Methyl Acetate		0.273	0.267	0.260	0.233	0.246	0.256	6.3
Cyclohexane		0.480	0.419	0.468	0.430	0.426	0.445	6.2
Methylcyclohexane		0.508	0.435	0.496	0.457	0.452	0.470	6.6
Dibromofluoromethane		0.290	0.270	0.259	0.265	0.265	0.270	4.4
1,2-Dichloroethane-d4		0.078	0.066	0.068	0.064	0.066	0.068	8.0
Toluene-d8		1.488	1.263	1.228	1.236	1.230	1.289	8.7
Bromofluorobenzene		0.639	0.504	0.496	0.488	0.478	0.521	12.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK1R	92	86	89	83	0
02	V1RLCS	95	89	96	92	0
03	WOD-SS-106	90	86	94	65	0
04	SV1060608	89	82	83	78	0
05	WOD-SS-107	97	87	99	77	0
06	SV1070608	93	89	84	79	0
07	WOD-SS-108	94	86	105	62	0
08	WOD-SS-108MS	98	98	100	82	0
09	WOD-SS-108MS	98	92	104	78	0
10	SV1080608	97	89	88	83	0
11						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID: V1F2500A BFB Injection Date: 02/12/03

Instrument ID: V1 BFB Injection Time: 1018

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.3
75	30.0 - 60.0% of mass 95	40.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	82.3
175	5.0 - 9.0% of mass 174	5.9 (7.1)1
176	95.0 - 101.0% of mass 174	80.4 (97.7)1
177	5.0 - 9.0% of mass 176	5.0 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501R	V1S0212A	V1F2501	02/12/03	1117
02	VBLK1R	V1B0212A	V1F2502	02/12/03	1156
03	V1RLCS	V1L0212A	V1F2503	02/12/03	1227
04	WOD-SS-106	B0239-02B	V1F2509	02/12/03	1540
05	SV1060608	B0239-03B	V1F2510	02/12/03	1611
06	WOD-SS-107	B0239-04B	V1F2511	02/12/03	1642
07	SV1070608	B0239-05B	V1F2512	02/12/03	1713
08	WOD-SS-108	B0239-06B	V1F2513	02/12/03	1744
09	WOD-SS-108MS	B0239-06BMS	V1F2514	02/12/03	1815
10	WOD-SS-108MS	B0239-06BMSD	V1F2515	02/12/03	1846
11	SV1080608	B0239-07B	V1F2516	02/12/03	1916
12					
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22					

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V1 Calibration Date: 02/12/03 Time: 1117

Lab File ID: V1F2501 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.172	0.199	0.01	15.7	20.0	
Chloromethane	0.405	0.417	0.1	3.0	20.0	
Vinyl Chloride	0.310	0.323	0.01	4.2	20.0	
Bromomethane	0.069	0.094	0.01	36.2	20.0	<-
Chloroethane	0.100	0.112	0.01	12.0	20.0	
Trichlorofluoromethane	0.190	0.212	0.01	11.6	20.0	
1,1-Dichloroethene	0.234	0.252	0.01	7.7	20.0	
Acetone	0.093	0.096	0.01	3.2	20.0	
Carbon Disulfide	0.643	0.726	0.01	12.9	20.0	
Methylene Chloride	0.355	0.359	0.01	1.1	20.0	
trans-1,2-Dichloroethene	0.292	0.311	0.01	6.5	20.0	
Methyl tert-butyl ether	0.495	0.543	0.01	9.7	20.0	
1,1-Dichloroethane	0.496	0.541	0.1	9.1	20.0	
2-Butanone	0.194	0.209	0.01	7.7	20.0	
cis-1,2-Dichloroethene	0.319	0.324	0.01	1.6	20.0	
Chloroform	0.450	0.484	0.01	7.6	20.0	
1,1,1-Trichloroethane	0.257	0.290	0.01	12.8	20.0	
Carbon Tetrachloride	0.242	0.272	0.01	12.4	20.0	
1,2-Dichloroethane	0.278	0.292	0.01	5.0	20.0	
Benzene	1.184	1.268	0.01	7.1	20.0	
Trichloroethene	0.291	0.306	0.01	5.2	20.0	
1,2-Dichloropropane	0.310	0.327	0.01	5.5	20.0	
Bromodichloromethane	0.356	0.376	0.01	5.6	20.0	
cis-1,3-Dichloropropene	0.496	0.516	0.01	4.0	20.0	
4-Methyl-2-pentanone	0.371	0.404	0.01	8.9	20.0	
Toluene	1.164	1.217	0.01	4.6	20.0	
trans-1,3-Dichloropropene	0.418	0.437	0.01	4.5	20.0	
1,1,2-Trichloroethane	0.270	0.268	0.01	0.7	20.0	
Tetrachloroethene	0.311	0.329	0.01	5.8	20.0	
2-Hexanone	0.366	0.391	0.01	6.8	20.0	
Dibromochloromethane	0.422	0.434	0.01	2.8	20.0	
1,2-Dibromoethane	0.397	0.401	0.01	1.0	20.0	
Chlorobenzene	1.053	1.077	0.3	2.3	20.0	
Ethylbenzene	0.531	0.555	0.01	4.5	20.0	
m,p-Xylene	0.676	0.700	0.01	3.6	20.0	
o-Xylene	0.674	0.697	0.01	3.4	20.0	
Xylene (Total)	0.675	0.699	0.01	3.6	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: V1 Calibration Date: 02/12/03 Time: 1117

Lab File ID: V1F2501 Init. Calib. Date(s): 02/06/03 02/06/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1331 1536

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.146	1.160	0.01	1.2	20.0	
Bromoform	0.306	0.313	0.1	2.3	20.0	
Isopropylbenzene	1.567	1.640	0.01	4.6	20.0	
1,1,2,2-Tetrachloroethane	1.077	1.146	0.3	6.4	20.0	
1,3,5-Trimethylbenzene	2.384	2.484	0.01	4.2	20.0	
1,2,4-Trimethylbenzene	2.496	2.589	0.01	3.7	20.0	
1,3-Dichlorobenzene	1.657	1.662	0.01	0.3	20.0	
1,4-Dichlorobenzene	1.735	1.722	0.01	0.7	20.0	
1,2-Dichlorobenzene	1.636	1.602	0.01	2.1	20.0	
1,2-Dibromo-3-chloropropane	0.151	0.162	0.01	7.3	20.0	
1,2,4-Trichlorobenzene	1.104	0.976	0.01	11.6	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.171	0.211	0.01	23.4	20.0	<-
Methyl Acetate	0.256	0.276	0.01	7.8	20.0	
Cyclohexane	0.445	0.495	0.01	11.2	20.0	
Methylcyclohexane	0.470	0.512	0.01	8.9	20.0	
Dibromofluoromethane	0.270	0.264	0.01	2.2	20.0	
1,2-Dichloroethane-d4	0.068	0.067	0.01	1.5	20.0	
Toluene-d8	1.289	1.269	0.01	1.6	20.0	
Bromofluorobenzene	0.521	0.488	0.01	6.3	20.0	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: V1B0212A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V1F2502

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: V1RLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		57	114	58-131
Chloromethane	50		54	108	63-120
Vinyl Chloride	50		51	102	61-134
Bromomethane	50		38	76	10-215
Chloroethane	50		74	148*	55-146
Trichlorofluoromethane	50		60	120	63-126
1,1-Dichloroethene	50		49	98	67-127
Acetone	50		46	92	0-154
Carbon Disulfide	50		56	112	63-126
Methylene Chloride	50		46	92	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		40	80	52-130
1,1-Dichloroethane	50		49	98	74-118
2-Butanone	50		45	90	14-154
cis-1,2-Dichloroethene	50		47	94	83-115
Chloroform	50		48	96	77-120
1,1,1-Trichloroethane	50		52	104	72-126
Carbon Tetrachloride	50		51	102	69-135
1,2-Dichloroethane	50		47	94	65-126
Benzene	50		49	98	78-121
Trichloroethene	50		49	98	75-125
1,2-Dichloropropane	50		49	98	78-117
Bromodichloromethane	50		48	96	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		46	92	45-141
Toluene	50		48	96	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		44	88	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: V1RLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		48	96	65-134
2-Hexanone	50		45	90	37-136
Dibromochloromethane	50		47	94	76-115
1,2-Dibromoethane	50		44	88	72-117
Chlorobenzene	50		47	94	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		43	86	67-126
Isopropylbenzene	50		48	96	80-135
1,1,2,2-Tetrachloroetha	50		45	90	70-117
1,3,5-Trimethylbenzene	50		48	96	72-133
1,2,4-Trimethylbenzene	50		48	96	73-126
1,3-Dichlorobenzene	50		46	92	75-115
1,4-Dichlorobenzene	50		46	92	72-110
1,2-Dichlorobenzene	50		46	92	78-113
1,2-Dibromo-3-chloropro	50		42	84	52-128
1,2,4-Trichlorobenzene	50		40	80	49-126
1,1,2-Trichlo-1,2,2-tri	50		61	122	70-130
Methyl Acetate	50		45	90	70-130
Cyclohexane	50		58	116	70-130
Methylcyclohexane	50		58	116	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	52	0.0	62	119	58-131
Chloromethane	52	0.0	52	100	63-120
Vinyl Chloride	52	0.0	51	98	61-134
Bromomethane	52	0.0	90	173	10-215
Chloroethane	52	0.0	68	131	55-146
Trichlorofluoromethane	52	0.0	55	106	63-126
1,1-Dichloroethene	52	0.0	54	104	67-127
Acetone	52	25	42	33	0-154
Carbon Disulfide	52	0.0	52	100	63-126
Methylene Chloride	52	2	53	98	62-128
trans-1,2-Dichloroethen	52	0.0	55	106	76-120
Methyl tert-butyl ether	52	0.0	48	92	52-130
1,1-Dichloroethane	52	0.0	57	110	74-118
2-Butanone	52	2	32	58	14-154
cis-1,2-Dichloroethene	52	0.0	53	102	83-115
Chloroform	52	0.0	56	108	77-120
1,1,1-Trichloroethane	52	0.0	60	115	72-126
Carbon Tetrachloride	52	0.0	58	112	69-135
1,2-Dichloroethane	52	0.0	57	110	65-126
Benzene	52	0.0	56	108	78-121
Trichloroethene	52	0.0	51	98	75-125
1,2-Dichloropropane	52	0.0	56	108	78-117
Bromodichloromethane	52	0.0	54	104	75-118
cis-1,3-Dichloropropene	52	0.0	46	88	78-120
4-Methyl-2-pentanone	52	0.0	39	75	45-141
Toluene	52	0.0	52	100	80-126
trans-1,3-Dichloroprope	52	0.0	47	90	73-123
1,1,2-Trichloroethane	52	0.0	50	96	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	52	0.0	52	100	65-134
2-Hexanone	52	0.0	30	58	37-136
Dibromochloromethane	52	0.0	55	106	76-115
1,2-Dibromoethane	52	0.0	53	102	72-117
Chlorobenzene	52	0.0	52	100	78-117
Ethylbenzene	52	0.0	53	102	79-129
Xylene (Total)	160	0.0	160	100	83-125
Styrene	52	0.0	46	88	83-122
Bromoform	52	0.0	48	92	67-126
Isopropylbenzene	52	0.0	50	96	80-135
1,1,2,2-Tetrachloroetha	52	0.0	65	125*	70-117
1,3,5-Trimethylbenzene	52	0.0	60	115	72-133
1,2,4-Trimethylbenzene	52	0.0	58	112	73-126
1,3-Dichlorobenzene	52	0.0	50	96	75-115
1,4-Dichlorobenzene	52	0.0	50	96	72-110
1,2-Dichlorobenzene	52	0.0	47	90	78-113
1,2-Dibromo-3-chloropro	52	0.0	54	104	52-128
1,2,4-Trichlorobenzene	52	0.0	21	40*	49-126
1,1,2-Trichlo-1,2,2-tri	52	0.0	61	117	70-130
Methyl Acetate	52	4	67	121	70-130
Cyclohexane	52	0.0	54	104	70-130
Methylcyclohexane	52	0.0	46	88	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	51	54	106	12	40	58-131
Chloromethane	51	51	100	0	40	63-120
Vinyl Chloride	51	50	98	0	40	61-134
Bromomethane	51	94	184	6	40	10-215
Chloroethane	51	65	127	3	40	55-146
Trichlorofluoromethane	51	53	104	2	40	63-126
1,1-Dichloroethene	51	49	96	8	40	67-127
Acetone	51	64	76	79*	40	0-154
Carbon Disulfide	51	52	102	2	40	63-126
Methylene Chloride	51	49	92	6	40	62-128
trans-1,2-Dichloroethen	51	51	100	6	40	76-120
Methyl tert-butyl ether	51	47	92	0	40	52-130
1,1-Dichloroethane	51	53	104	6	40	74-118
2-Butanone	51	29	53	9	40	14-154
cis-1,2-Dichloroethene	51	50	98	4	40	83-115
Chloroform	51	52	102	6	40	77-120
1,1,1-Trichloroethane	51	54	106	8	40	72-126
Carbon Tetrachloride	51	52	102	9	40	69-135
1,2-Dichloroethane	51	52	102	8	40	65-126
Benzene	51	52	102	6	40	78-121
Trichloroethene	51	49	96	2	40	75-125
1,2-Dichloropropane	51	51	100	8	40	78-117
Bromodichloromethane	51	49	96	8	40	75-118
cis-1,3-Dichloropropene	51	45	88	0	40	78-120
4-Methyl-2-pentanone	51	36	70	7	40	45-141
Toluene	51	47	92	8	40	80-126
trans-1,3-Dichloroprope	51	43	84	7	40	73-123
1,1,2-Trichloroethane	51	45	88	9	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	51	49	96	4	40	65-134
2-Hexanone	51	31	61	5	40	37-136
Dibromochloromethane	51	51	100	6	40	76-115
1,2-Dibromoethane	51	49	96	6	40	72-117
Chlorobenzene	51	49	96	4	40	78-117
Ethylbenzene	51	50	98	4	40	79-129
Xylene (Total)	150	140	93	7	40	83-125
Styrene	51	40	78*	12	40	83-122
Bromoform	51	42	82	11	40	67-126
Isopropylbenzene	51	47	92	4	40	80-135
1,1,2,2-Tetrachloroetha	51	63	124*	1	40	70-117
1,3,5-Trimethylbenzene	51	61	120	4	40	72-133
1,2,4-Trimethylbenzene	51	59	116	4	40	73-126
1,3-Dichlorobenzene	51	48	94	2	40	75-115
1,4-Dichlorobenzene	51	47	92	4	40	72-110
1,2-Dichlorobenzene	51	44	86	4	40	78-113
1,2-Dibromo-3-chloropro	51	47	92	12	40	52-128
1,2,4-Trichlorobenzene	51	20	39*	2	40	49-126
1,1,2-Trichlo-1,2,2-tri	51	58	114	2	40	70-130
Methyl Acetate	51	62	114	6	40	70-130
Cyclohexane	51	51	100	4	40	70-130
Methylcyclohexane	51	42	82	7	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 50 outside limits
Spike Recovery: 5 out of 100 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID (Standard): V1F2501 Date Analyzed: 02/12/03

Instrument ID: V1 Time Analyzed: 1117

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1041330	5.97	762148	9.64	425309	12.60
	UPPER LIMIT	2082660	6.47	1524296	10.14	850618	13.10
	LOWER LIMIT	520665	5.47	381074	9.14	212655	12.10
	EPA SAMPLE NO.						
01	VBLK1R	1232771	5.96	916238	9.64	447879	12.60
02	V1RLCS	1068089	5.96	778194	9.64	433988	12.60
03	WOD-SS-106	632413	5.97	411207	9.64	131075*	12.60
04	SV1060608	1270782	5.96	937846	9.63	459349	12.59
05	WOD-SS-107	1105398	5.96	754284	9.63	281761	12.59
06	SV1070608	1144649	5.96	855978	9.63	411272	12.59
07	WOD-SS-108	1090145	5.96	631578	9.63	160248*	12.59
08	WOD-SS-108MS	934444	5.95	628124	9.63	267288	12.59
09	WOD-SS-108MS	1068972	5.95	682622	9.63	261273	12.59
10	SV1080608	1140328	5.95	845959	9.62	396572	12.59
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SAG-B0239	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 2-May-03

Sample WOD-55-108

Acetone = 25 ug/kg

$$\text{Acetone} = \frac{(47638)(50\,ng)}{(1090145)(0.093)(5.5g)(0.85)} = 25.13\,ng/g = ug/kg$$

Data File: \\AVOGADRO\USERDATA\Organic\voa\v1.i\030212.B\V1F2513.D
Report Date: 26-Feb-2003 11:02

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030212.B\V1F2513.D
Lab Smp Id: B0239-06B Client Smp ID: WOD-SS-108
Inj Date : 12-FEB-2003 17:44
Operator : KEN Inst ID: v1.i
Smp Info : TETRA,B0239-06B,WOD-SS-108,V1B0212A,,B0239
Misc Info : 11-FEB-03,,,,,,,5.5
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030212.B\v18260H.m
Meth Date : 26-Feb-2003 10:46 mtl Quant Type: ISTD
Cal Date : 06-FEB-2003 15:36 Cal File: V1F2365.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: cto848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	5.500	Weight of sample (g)
M	15.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)	
	9 Acetone	43	3.010	3.008	(0.505)	47638	23.4647	25	
	112 Methyl Acetate	43	3.339	3.337	(0.560)	19548	3.50394	4(a)	
	14 Methylene Chloride	84	3.424	3.422	(0.575)	18632	2.40891	2(aM)	MI : SB 2/26/03
	22 2-Butanone	43	4.761	4.758	(0.799)	8717	2.06526	2(a)	
$	30 Dibromofluoromethane	113	5.227	5.236	(0.877)	277489	47.1932	50	
$	35 1,2-Dichloroethane-d4	102	5.577	5.586	(0.936)	64090	42.7762	46	
*	38 Fluorobenzene	96	5.959	5.967	(1.000)	1090145	50.0000		
$	47 Toluene-d8	98	7.794	7.803	(0.809)	857003	52.6349	56	
*	57 Chlorobenzene-d5	117	9.629	9.638	(1.000)	631578	50.0000		
$	68 Bromofluorobenzene	95	11.178	11.186	(1.161)	203807	30.9746	33	
*	81 1,4-Dichlorobenzene-d4	152	12.589	12.597	(1.000)	160248	50.0000		

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID: S2D2432 DFTPP Injection Date: 03/09/03

Instrument ID: S2 DFTPP Injection Time: 1954

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	42.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	3.18
441	Present, but less than mass 443	6.0
442	40.0 - 99.9% of mass 198	51.4
443	17.0 - 23.0% of mass 442	10.0 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502D	SS0309B	S2D2433	03/09/03	2012
02	SSTD1602D	SS0309C	S2D2434	03/09/03	2052
03	SSTD0102D	SS0309D	S2D2435	03/09/03	2132
04	SSTD1202D	SS0309E	S2D2436	03/09/03	2212
05	SSTD0802D	SS0309F	S2D2437	03/09/03	2252
06	SSTD0202D	SS0309G	S2D2438	03/09/03	2331
07					
08					
09					
10					
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12					
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17					
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19					
20					
21					
22					

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160						$\overline{RRF}$	%RSD
Phenol	* 1.318						1.251	4.8*
bis(2-Chloroethyl)Ether	* 1.073						0.960	8.1*
2-Chlorophenol	* 1.203						1.172	2.8*
2-Methylphenol	* 1.028						0.973	4.3*
2,2'-oxybis(1-Chloropropane)	* 1.271						1.243	1.5*
4-Methylphenol	* 1.094						1.043	4.9*
N-Nitroso-di-n-propylamine	* 0.628						0.727	10.5*
Hexachloroethane	* 0.543						0.549	2.1*
Nitrobenzene	* 0.417						0.398	4.6*
Isophorone	* 0.554						0.542	1.5*
2-Nitrophenol	* 0.237						0.220	5.4*
2,4-Dimethylphenol	* 0.412						0.392	3.9*
2,4-Dichlorophenol	* 0.384						0.347	9.2*
Naphthalene	* 1.250						1.106	9.1*
4-Chloroaniline	* 0.567						0.504	10.6*
bis(2-Chloroethoxy)methane	* 0.388						0.350	7.9*
Hexachlorobutadiene	* 0.273						0.253	5.0*
4-Chloro-3-Methylphenol	* 0.364						0.336	6.1*
2-Methylnaphthalene	* 1.211						1.048	11.8*
Hexachlorocyclopentadiene	* 0.330						0.249	32.2*
2,4,6-Trichlorophenol	* 0.392						0.371	4.0*
2,4,5-Trichlorophenol	* 0.436						0.401	6.0*
2-Chloronaphthalene	* 1.257						1.171	6.0*
2-Nitroaniline	* 0.466						0.472	2.3*
Dimethylphthalate	* 1.512						1.478	2.9*
Acenaphthylene	* 1.907						1.824	2.9*
2,6-Dinitrotoluene	* 0.364						0.344	4.3*
3-Nitroaniline	* 0.391						0.362	5.8*
Acenaphthene	* 1.228						1.159	4.4*
2,4-Dinitrophenol	* 0.194						0.154	26.4*
4-Nitrophenol	* 0.204						0.171	19.0*
Dibenzofuran	* 2.464						2.295	5.8*
2,4-Dinitrotoluene	* 0.460						0.452	3.8*
Diethylphthalate	* 1.508						1.492	2.1*
4-Chlorophenyl-phenylether	* 0.765						0.716	4.8*
Fluorene	* 1.551						1.415	7.2*
4-Nitroaniline	* 0.174						0.233	19.3*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.199					0.177	11.4*
N-Nitrosodiphenylamine (1)	* 0.528					0.495	4.3*
4-Bromophenyl-phenylether	* 0.273					0.253	5.7*
Hexachlorobenzene	* 0.310					0.293	3.6*
Pentachlorophenol	* 0.128					0.097	26.1*
Phenanthrene	* 1.303					1.179	7.4*
Anthracene	* 1.269					1.168	6.5*
Carbazole	* 0.746					0.741	8.5*
Di-n-butylphthalate	* 1.495					1.382	5.3*
Fluoranthene	* 1.375					1.244	7.1*
Pyrene	* 1.156					1.127	2.5*
Butylbenzylphthalate	* 0.584					0.563	2.5*
3,3'-Dichlorobenzidine	0.319					0.350	12.3
Benzo(a)anthracene	* 1.155					1.115	3.1*
Chrysene	* 0.983					0.957	1.7*
bis(2-Ethylhexyl)phthalate	* 0.816					0.756	5.6*
Di-n-octylphthalate	* 2.414					2.123	10.4*
Benzo(b)fluoranthene	* 2.163					1.794	12.7*
Benzo(k)fluoranthene	* 1.693					1.601	5.6*
Benzo(a)pyrene	* 1.614					1.495	7.2*
Indeno(1,2,3-cd)pyrene	* 1.873					1.742	7.0*
Dibenzo(a,h)anthracene	* 1.629					1.490	8.3*
Benzo(g,h,i)perylene	* 1.443					1.369	5.7*
1,1'-Biphenyl	* 1.666					1.535	7.0*
Acetophenone	* 1.713					1.677	3.4*
Atrazine	* 0.234					0.235	2.9*
Benzaldehyde	* 0.428					0.565	15.6*
Caprolactum	* 0.082					0.085	8.8*
Nitrobenzene-d5	0.464					0.445	4.2*
2-Fluorobiphenyl	* 1.648					1.539	5.0*
Terphenyl-d14	* 0.927					0.906	2.7*
Phenol-d5	* 1.238					1.198	4.4*
2-Fluorophenol	* 0.958					0.919	5.7*
2,4,6-Tribromophenol	* 0.130					0.123	4.1*
2-Chlorophenol-d4	* 1.259					1.211	3.8*
1,2-Dichlorobenzene-d4	* 0.964					0.927	2.6*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK2C	72	77	85	94	99*	86	95	75	1
02	S2CLCS	77	78	85	94	94	91	90	79	0
03	SV1060608	71	72	75	76	78	76	77	69	0
04	SV1070608	65	72	71	69	64	66	70	65	0
05	SV1080608	69	73	71	77	77	83	78	70	0
06	WOD-SS-107	65	64	72	70	71	84	69	63	0
07	WOD-SS-108	51	53	64	56	56	72	57	49	0
08	WOD-SS-108MS	49	50*	56	53	53	66	54	48	1
09	WOD-SS-108MS	49	51*	58	53	53	66	54	48	1
10	WOD-SS-106	56	60	69	62	62	82	63	54	0
11										
12										
13										
14										
15										
16										
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21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Lab File ID: S2D2440 DFTPP Injection Date: 03/10/03

Instrument ID: S2 DFTPP Injection Time: 0044

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	43.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	26.9
365	Greater than 1.0% of mass 198	3.06
441	Present, but less than mass 443	5.6
442	40.0 - 99.9% of mass 198	48.1
443	17.0 - 23.0% of mass 442	9.4 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502E	SS0310A	S2D2441	03/10/03	0101
02	SBLK2C	MB-5778	S2D2442	03/10/03	0140
03	S2CLCS	LCS-5778	S2D2443	03/10/03	0219
04	SV1060608	B0239-03A	S2D2444	03/10/03	0259
05	SV1070608	B0239-05A	S2D2445	03/10/03	0338
06	SV1080608	B0239-07A	S2D2446	03/10/03	0416
07	WOD-SS-107	B0239-04A	S2D2447	03/10/03	0456
08	WOD-SS-108	B0239-06A	S2D2448	03/10/03	0535
09	WOD-SS-108MS	B0239-06AMS	S2D2449	03/10/03	0614
10	WOD-SS-108MS	B0239-06AMSD	S2D2450	03/10/03	0653
11	WOD-SS-106	B0239-02A	S2D2451	03/10/03	0732
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.251	1.266	0.050	1.2	20.0
bis(2-Chloroethyl)Ether	0.960	0.920	0.050	-4.2	100
2-Chlorophenol	1.172	1.173	0.050	0.1	100
2-Methylphenol	0.973	0.972	0.050	-0.1	100
2,2'-oxybis(1-Chloropropane)	1.243	1.270	0.050	2.2	100
4-Methylphenol	1.043	1.042	0.050	-0.1	100
N-Nitroso-di-n-propylamine	0.727	0.824	0.050	13.3	100
Hexachloroethane	0.549	0.558	0.050	1.6	100
Nitrobenzene	0.398	0.388	0.050	-2.5	100
Isophorone	0.542	0.556	0.050	2.6	100
2-Nitrophenol	0.220	0.220	0.050	0.0	20.0
2,4-Dimethylphenol	0.392	0.382	0.050	-2.6	100
2,4-Dichlorophenol	0.347	0.331	0.050	-4.6	20.0
Naphthalene	1.106	1.051	0.050	-5.0	100
4-Chloroaniline	0.504	0.482	0.050	-4.4	100
bis(2-Chloroethoxy)methane	0.350	0.340	0.050	-2.8	100
Hexachlorobutadiene	0.253	0.240	0.050	-5.1	20.0
4-Chloro-3-Methylphenol	0.336	0.331	0.050	-1.5	20.0
2-Methylnaphthalene	1.048	0.976	0.050	-6.9	100
Hexachlorocyclopentadiene	0.249	0.246	0.050	-1.2	100
2,4,6-Trichlorophenol	0.371	0.373	0.050	0.5	100
2,4,5-Trichlorophenol	0.401	0.405	0.050	1.0	100
2-Chloronaphthalene	1.171	1.163	0.050	-0.7	100
2-Nitroaniline	0.472	0.481	0.050	1.9	100
Dimethylphthalate	1.478	1.503	0.050	1.7	100
Acenaphthylene	1.824	1.811	0.050	-0.7	100
2,6-Dinitrotoluene	0.344	0.354	0.050	2.9	100
3-Nitroaniline	0.362	0.367	0.050	1.4	100
Acenaphthene	1.159	1.156	0.050	-0.2	20.0
2,4-Dinitrophenol	0.154	0.148	0.050	-3.9	100
4-Nitrophenol	0.171	0.169	0.050	-1.2	100
Dibenzofuran	2.295	2.290	0.050	-0.2	100
2,4-Dinitrotoluene	0.452	0.465	0.050	2.9	100
Diethylphthalate	1.492	1.517	0.050	1.7	100
4-Chlorophenyl-phenylether	0.716	0.702	0.050	-2.0	100
Fluorene	1.415	1.400	0.050	-1.1	~~100~~
4-Nitroaniline	0.233	0.297	0.050	~~-27.5~~	100

All other compounds must meet a minimum RRF of 0.~~010~~.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.177	0.178	0.050	0.6	100
N-Nitrosodiphenylamine(1)	0.495	0.480	0.050	-3.0	20.0
4-Bromophenyl-phenylether	0.253	0.244	0.050	-3.6	100
Hexachlorobenzene	0.293	0.290	0.050	-1.0	100
Pentachlorophenol	0.097	0.089	0.050	-8.2	20.0
Phenanthrene	1.179	1.159	0.050	-1.7	100
Anthracene	1.168	1.133	0.050	-3.0	100
Carbazole	0.741	0.748	0.050	0.9	100
Di-n-butylphthalate	1.382	1.359	0.050	-1.7	100
Fluoranthene	1.244	1.226	0.050	-1.4	20.0
Pyrene	1.127	1.139	0.050	1.1	100
Butylbenzylphthalate	0.563	0.571	0.050	1.4	100
3,3'-Dichlorobenzidine	0.350	0.374	0.050	6.8	100
Benzo(a)anthracene	1.115	1.114	0.050	-0.1	100
Chrysene	0.957	0.966	0.050	0.9	100
bis(2-Ethylhexyl)phthalate	0.756	0.742	0.050	-1.8	100
Di-n-octylphthalate	2.123	2.100	0.050	-1.1	20.0
Benzo(b)fluoranthene	1.794	1.649	0.050	-8.1	100
Benzo(k)fluoranthene	1.601	1.616	0.050	0.9	100
Benzo(a)pyrene	1.495	1.473	0.050	-1.5	20.0
Indeno(1,2,3-cd)pyrene	1.742	1.746	0.050	0.2	100
Dibenzo(a,h)anthracene	1.490	1.467	0.050	-1.5	100
Benzo(g,h,i)perylene	1.369	1.410	0.050	3.0	100
1,1'-Biphenyl	1.535	1.502	0.050	-2.1	100
Acetophenone	1.677	1.728	0.050	3.0	100
Atrazine	0.235	0.240	0.050	2.1	100
Benzaldehyde	0.565	0.765	0.050	35.4	100
Caprolactum	0.085	0.087	0.050	2.4	100
Nitrobenzene-d5	0.445	0.446	0.050	0.2	100
2-Fluorobiphenyl	1.539	1.527	0.050	-0.8	100
Terphenyl-d14	0.906	0.917	0.050	1.2	100
Phenol-d5	1.198	1.215	0.050	1.4	100
2-Fluorophenol	0.919	0.940	0.050	2.3	100
2,4,6-Tribromophenol	0.123	0.121	0.050	-1.6	100
2-Chlorophenol-d4	1.211	1.213	0.050	0.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.927	0.933	0.050	0.6	100

All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: MB-5778

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2442

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: MB-5778

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2442

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U
92-52-4	1,1'-Biphenyl	330	U
98-86-2	Acetophenone	330	U
1912-24-9	Atrazine	330	U
100-52-7	Benzaldehyde	330	U
105-60-2	Caprolactum	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix: (soil/water) SOIL Lab Sample ID: MB-5778

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2442

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: S2CLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	1700		1700	100	45-109
bis(2-Chloroethyl)Ether	1700		1400	82	43-104
2-Chlorophenol	1700		1500	88	43-107
2-Methylphenol	1700		1500	88	45-108
2,2'-oxybis(1-Chloropro	1700		1400	82	41-105
4-Methylphenol	1700		1500	88	48-109
N-Nitroso-di-n-prop.(1)	1700		1600	94	44-111
Hexachloroethane	1700		1400	82	40-102
Nitrobenzene	1700		1400	82	44-108
Isophorone	1700		1800	106	42-113
2-Nitrophenol	1700		1400	82	42-111
2,4-Dimethylphenol	1700		1100	65	37-107
2,4-Dichlorophenol	1700		1400	82	49-110
Naphthalene	1700		1300	76	44-112
4-Chloroaniline	1700		510	30	4-102
bis(2-Chloroethoxy)meth	1700		1400	82	46-108
Hexachlorobutadiene	1700		1400	82	41-108
4-Chloro-3-Methylphenol	1700		1600	94	56-117
2-Methylnaphthalene	1700		1000	59	46-110
Hexachlorocyclopentadie	1700		700	41	10-118
2,4,6-Trichlorophenol	1700		1500	88	53-115
2,4,5-Trichlorophenol	1700		1500	88	59-113
2-Chloronaphthalene	1700		1400	82	52-112
2-Nitroaniline	1700		1100	65	63-117
Dimethylphthalate	1700		1500	88	62-117
Acenaphthylene	1700		1400	82	58-112
2,6-Dinitrotoluene	1700		1500	88	60-118
3-Nitroaniline	1700		980	58	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: S2CLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	1700		1500	88	53-116
2,4-Dinitrophenol	1700		1800	106	15-136
4-Nitrophenol	1700		1900	112	50-129
Dibenzofuran	1700		1100	65	61-112
2,4-Dinitrotoluene	1700		1600	94	59-123
Diethylphthalate	1700		1600	94	61-120
4-Chlorophenyl-phenylet	1700		1500	88	59-116
Fluorene	1700		1400	82	63-115
4-Nitroaniline	1700		1500	88	35-124
4,6-Dinitro-2-methylphe	1700		1500	88	33-130
N-Nitrosodiphenylamine	1700		2000	118	50-150
4-Bromophenyl-phenyleth	1700		1500	88	66-110
Hexachlorobenzene	1700		1400	82	67-112
Pentachlorophenol	1700		1800	106	19-130
Phenanthrene	1700		1400	82	70-115
Anthracene	1700		1400	82	63-117
Carbazole	1700		1800	106	62-122
Di-n-butylphthalate	1700		1600	94	70-120
Fluoranthene	1700		1500	88	64-121
Pyrene	1700		1600	94	66-120
Butylbenzylphthalate	1700		1600	94	63-123
3,3'-Dichlorobenzidine	1700		1400	82	8-124
Benzo(a)anthracene	1700		1500	88	50-129
Chrysene	1700		1500	88	41-150
bis(2-Ethylhexyl)phthal	1700		1600	94	64-115
Di-n-octylphthalate	1700		1700	100	69-137
Benzo(b)fluoranthene	1700		1700	100	61-129
Benzo(k)fluoranthene	1700		1800	106	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: S2CLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	1700		1700	100	66-119
Indeno(1,2,3-cd)pyrene	1700		1800	106	56-128
Dibenzo(a,h)anthracene	1700		1800	106	58-128
Benzo(g,h,i)perylene	1700		1800	106	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 60 outside limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	970	430	44*	6	40	45-109
bis(2-Chloroethyl)Ether	970	390	40*	5	40	43-104
2-Chlorophenol	970	410	42*	11	40	43-107
2-Methylphenol	970	410	42*	11	40	45-108
2,2'-oxybis(1-Chloropro	970	400	41	9	40	41-105
4-Methylphenol	970	380	39*	7	40	48-109
N-Nitroso-di-n-prop.(1)	970	480	49	12	40	44-111
Hexachloroethane	970	390	40	5	40	40-102
Nitrobenzene	970	470	48	0	40	44-108
Isophorone	970	520	54	9	40	42-113
2-Nitrophenol	970	430	44	2	40	42-111
2,4-Dimethylphenol	970	390	40	14	40	37-107
2,4-Dichlorophenol	970	410	42*	5	40	49-110
Naphthalene	970	380	39*	7	40	44-112
4-Chloroaniline	970	100	10	26	40	4-102
bis(2-Chloroethoxy)meth	970	410	42*	7	40	46-108
Hexachlorobutadiene	970	420	43	2	40	41-108
4-Chloro-3-Methylphenol	970	440	45*	2	40	56-117
2-Methylnaphthalene	970	290	30*	6	40	46-110
Hexachlorocyclopentadie	970	140	14		40	10-118
2,4,6-Trichlorophenol	970	480	49*	6	40	53-115
2,4,5-Trichlorophenol	970	460	47*	8	40	59-113
2-Chloronaphthalene	970	420	43*	9	40	52-112
2-Nitroaniline	970	340	35*	8	40	63-117
Dimethylphthalate	970	430	44*	9	40	62-117
Acenaphthylene	970	420	43*	9	40	58-112
2,6-Dinitrotoluene	970	420	43*	13	40	60-118
3-Nitroaniline	970	51	5*	67*	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	970	410	42*	7	40	53-116
2,4-Dinitrophenol	970	370	38	8	40	15-136
4-Nitrophenol	970	600	62	5	40	50-129
Dibenzofuran	970	310	32*	6	40	61-112
2,4-Dinitrotoluene	970	430	44*	11	40	59-123
Diethylphthalate	970	440	45*	8	40	61-120
4-Chlorophenyl-phenylet	970	420	43*	7	40	59-116
Fluorene	970	400	41*	7	40	63-115
4-Nitroaniline	970	200	21*	62*	40	35-124
4,6-Dinitro-2-methylphe	970	390	40	2	40	33-130
N-Nitrosodiphenylamine	970	570	59	6	40	50-150
4-Bromophenyl-phenyleth	970	440	45*	6	40	66-110
Hexachlorobenzene	970	440	45*	8	40	67-112
Pentachlorophenol	970	500	52	9	40	19-130
Phenanthrene	970	400	41*	7	40	70-115
Anthracene	970	380	39*	10	40	63-117
Carbazole	970	530	55*	7	40	62-122
Di-n-butylphthalate	970	420	43*	7	40	70-120
Fluoranthene	970	390	40*	10	40	64-121
Pyrene	970	460	47*	4	40	66-120
Butylbenzylphthalate	970	450	46*	4	40	63-123
3,3'-Dichlorobenzidine	970	8	1*	133*	40	8-124
Benzo(a)anthracene	970	430	44*	6	40	50-129
Chrysene	970	430	44	6	40	41-150
bis(2-Ethylhexyl)phthal	970	440	45*	10	40	64-115
Di-n-octylphthalate	970	360	37*	8	40	69-137
Benzo(b)fluoranthene	970	360	37*	10	40	61-129
Benzo(k)fluoranthene	970	440	45*	6	40	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzo(a)pyrene	970	370	38*	8	40	66-119
Indeno(1,2,3-cd)pyrene	970	340	35*	13	40	56-128
Dibenzo(a,h)anthracene	970	360	37*	8	40	58-128
Benzo(g,h,i)perylene	970	310	32	17	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 60 outside limits
Spike Recovery: 83 out of 120 outside limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	980	0.0	460	47	45-109
bis(2-Chloroethyl)Ether	980	0.0	410	42*	43-104
2-Chlorophenol	980	0.0	460	47	43-107
2-Methylphenol	980	0.0	460	47	45-108
2,2'-oxybis(1-Chloropro	980	0.0	440	45	41-105
4-Methylphenol	980	0.0	410	42*	48-109
N-Nitroso-di-n-prop.(1)	980	0.0	540	55	44-111
Hexachloroethane	980	0.0	410	42	40-102
Nitrobenzene	980	0.0	470	48	44-108
Isophorone	980	0.0	580	59	42-113
2-Nitrophenol	980	0.0	440	45	42-111
2,4-Dimethylphenol	980	0.0	450	46	37-107
2,4-Dichlorophenol	980	0.0	430	44*	49-110
Naphthalene	980	0.0	410	42*	44-112
4-Chloroaniline	980	0.0	130	13	4-102
bis(2-Chloroethoxy)meth	980	0.0	440	45*	46-108
Hexachlorobutadiene	980	0.0	430	44	41-108
4-Chloro-3-Methylphenol	980	0.0	450	46*	56-117
2-Methylnaphthalene	980	0.0	310	32*	46-110
Hexachlorocyclopentadie	980	0.0	0.0	0*	10-118
2,4,6-Trichlorophenol	980	0.0	510	52*	53-115
2,4,5-Trichlorophenol	980	0.0	500	51*	59-113
2-Chloronaphthalene	980	0.0	460	47*	52-112
2-Nitroaniline	980	0.0	370	38*	63-117
Dimethylphthalate	980	0.0	470	48*	62-117
Acenaphthylene	980	0.0	460	47*	58-112
2,6-Dinitrotoluene	980	0.0	480	49*	60-118
3-Nitroaniline	980	0.0	100	10*	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	980	0.0	440	45*	53-116
2,4-Dinitrophenol	980	0.0	340	35	15-136
4-Nitrophenol	980	0.0	580	59	50-129
Dibenzofuran	980	0.0	330	34*	61-112
2,4-Dinitrotoluene	980	0.0	480	49*	59-123
Diethylphthalate	980	0.0	480	49*	61-120
4-Chlorophenyl-phenylet	980	0.0	450	46*	59-116
Fluorene	980	0.0	430	44*	63-115
4-Nitroaniline	980	0.0	390	40	35-124
4,6-Dinitro-2-methylphe	980	0.0	400	41	33-130
N-Nitrosodiphenylamine	980	0.0	620	63	50-150
4-Bromophenyl-phenyleth	980	0.0	470	48*	66-110
Hexachlorobenzene	980	0.0	480	49*	67-112
Pentachlorophenol	980	0.0	560	57	19-130
Phenanthrene	980	0.0	430	44*	70-115
Anthracene	980	0.0	420	43*	63-117
Carbazole	980	0.0	580	59*	62-122
Di-n-butylphthalate	980	0.0	450	46*	70-120
Fluoranthene	980	0.0	430	44*	64-121
Pyrene	980	0.0	480	49*	66-120
Butylbenzylphthalate	980	0.0	470	48*	63-123
3,3'-Dichlorobenzidine	980	0.0	47	5*	8-124
Benzo(a)anthracene	980	0.0	460	47*	50-129
Chrysene	980	0.0	460	47	41-150
bis(2-Ethylhexyl)phthal	980	0.0	490	50*	64-115
Di-n-octylphthalate	980	0.0	390	40*	69-137
Benzo(b)fluoranthene	980	0.0	400	41*	61-129
Benzo(k)fluoranthene	980	0.0	470	48*	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - EPA Sample No.: WOD-SS-108 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	980	0.0	400	41*	66-119
Indeno(1,2,3-cd)pyrene	980	0.0	390	40*	56-128
Dibenzo(a,h)anthracene	980	0.0	390	40*	58-128
Benzo(g,h,i)perylene	980	0.0	370	38	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER ~~SOG~~ - B0239 ~~SAS~~ Job- 4740	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada ~~BF~~	CHECKED BY	APPROVED BY	DATE 2-May-03

Sample WOO-SS-106 Benzaldehyde = 270 ug/kg

$$\text{Benzaldehyde} = \frac{(14739)(40\,ng)(1000\,uL)}{(144091)(0.565)(30.1\,g)(1\,mL)(0.89)} = 270.3\,ng/g = ug/kg$$

Data File: S2D2451.D
Report Date: 17-Mar-2003 20:13

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030310.B\S2D2451.D
Lab Smp Id: B0239-02A
Inj Date : 10-MAR-2003 07:32 Client Smp ID: WOD-SS-106
Operator : JC
Smp Info : B0239-02A,WOD-SS-106,5778,,,B0239 Inst ID: s2.i
Misc Info : ,,,2,,,,30.1,11,,24-FEB-03,11-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030310.B\S2_8270C.m
Meth Date : 10-Mar-2003 10:05 mtl Quant Type: ISTD
Cal Date : 09-MAR-2003 23:31 Cal File: S2D2438.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE
Target Version: 4.03 Compound Sublist: CTO848SL.sub
Processing Host: TARGET1

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.100 ✓	Weight of sample extracted (g)
M	11.000 ✓	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
$	3 2-Fluorophenol	112	5.249	5.196	(0.709)	153566	46.3919	1700
	101 Benzaldehyde	77	6.663	6.653	(0.899)	14739	7.23985	270(a)
$	5 Phenol-d5	99	6.814	6.794	(0.920)	199584	46.2616	1700
$	9 2-Chlorophenol-d4	132	7.019	7.010	(0.948)	205681	47.1589	1800
*	12 1,4-Dichlorobenzene-d4	152	7.408	7.409	(1.000)	144091	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	7.678	7.679	(1.036)	90880	27.2207	1000
$	22 Nitrobenzene-d5	82	8.444	8.445	(0.862)	152770	28.1457	1000
*	31 Naphthalene-d8	136	9.794	9.805	(1.000)	487327	40.0000	
$	41 2-Fluorobiphenyl	172	11.974	11.986	(0.900)	345429	29.7990	1100
*	48 Acenaphthene-d10	164	13.302	13.303	(1.000)	301200	40.0000	
$	60 2,4,6-Tribromophenol	330	14.900	14.912	(0.914)	88837	61.1360	2300
*	64 Phenanthrene-d10	188	16.303	16.304	(1.000)	472630	40.0000	
$	72 Terphenyl-d14	244	19.585	19.586	(0.904)	351929	34.7490	1300

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.199					0.177	11.4*
N-Nitrosodiphenylamine (1)	* 0.528					0.495	4.3*
4-Bromophenyl-phenylether	* 0.273					0.253	5.7*
Hexachlorobenzene	* 0.310					0.293	3.6*
Pentachlorophenol	* 0.128					0.097	26.1*
Phenanthrene	* 1.303					1.179	7.4*
Anthracene	* 1.269					1.168	6.5*
Carbazole	* 0.746					0.741	8.5*
Di-n-butylphthalate	* 1.495					1.382	5.3*
Fluoranthene	* 1.375					1.244	7.1*
Pyrene	* 1.156					1.127	2.5*
Butylbenzylphthalate	* 0.584					0.563	2.5*
3,3'-Dichlorobenzidine	0.319					0.350	12.3
Benzo(a)anthracene	* 1.155					1.115	3.1*
Chrysene	* 0.983					0.957	1.7*
bis(2-Ethylhexyl)phthalate	* 0.816					0.756	5.6*
Di-n-octylphthalate	* 2.414					2.123	10.4*
Benzo(b)fluoranthene	* 2.163					1.794	12.7*
Benzo(k)fluoranthene	* 1.693					1.601	5.6*
Benzo(a)pyrene	* 1.614					1.495	7.2*
Indeno(1,2,3-cd)pyrene	* 1.873					1.742	7.0*
Dibenzo(a,h)anthracene	* 1.629					1.490	8.3*
Benzo(g,h,i)perylene	* 1.443					1.369	5.7*
1,1'-Biphenyl	* 1.666					1.535	7.0*
Acetophenone	* 1.713					1.677	3.4*
Atrazine	* 0.234					0.235	2.9*
Benzaldehyde	* 0.428					0.565	15.6*
Caprolactum	* 0.082					0.085	8.8*
Nitrobenzene-d5	0.464					0.445	4.2*
2-Fluorobiphenyl	* 1.648					1.539	5.0*
Terphenyl-d14	* 0.927					0.906	2.7*
Phenol-d5	* 1.238					1.198	4.4*
2-Fluorophenol	* 0.958					0.919	5.7*
2,4,6-Tribromophenol	* 0.130					0.123	4.1*
2-Chlorophenol-d4	* 1.259					1.211	3.8*
1,2-Dichlorobenzene-d4	* 0.964					0.927	2.6*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BT	AR1660BT	02/21/03	1259	6.78	22.13
23	BBLK1J	MB-5734	02/21/03	1410	6.77	22.13
24	B1JLCS	LCS-5734	02/21/03	1446	6.77	22.13
25	AR1660BU	AR1660BU	02/21/03	2226	6.78	22.13
26	AR1660BV	AR1660BV	02/22/03	0753	6.78	22.13
27	WOD-SS-106	B0239-02A	02/22/03	1050	6.77	22.12
28	SV1060608	B0239-03A	02/22/03	1125	6.77	22.12
29	WOD-SS-107	B0239-04A	02/22/03	1200	6.77	22.12
30	SV1070608	B0239-05A	02/22/03	1235	6.77	22.12
31	WOD-SS-108	B0239-06A	02/22/03	1311	6.77	22.13
32	WOD-SS-108MS	B0239-06AMS	02/22/03	1346	6.77	22.13

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	WOD-SS-108MS	B0239-06AMSD	02/22/03	1421	6.78	22.13
02	AR1660BW	AR1660BW	02/22/03	1718	6.78	22.13
03	SV1080608	B0239-07A	02/22/03	1828	6.78	22.13
04	AR1660BX	AR1660BX	02/23/03	0242	6.78	22.14
05						
06						
07						
08						
09						
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32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BT	AR1660BT	02/21/03	1259	8.44	25.34
23	BBLK1J	MB-5734	02/21/03	1410	8.44	25.34
24	B1JLCS	LCS-5734	02/21/03	1446	8.44	25.33
25	AR1660BU	AR1660BU	02/21/03	2226	8.44	25.34
26	AR1660BV	AR1660BV	02/22/03	0753	8.44	25.34
27	WOD-SS-106	B0239-02A	02/22/03	1050	8.44	25.33
28	SV1060608	B0239-03A	02/22/03	1125	8.44	25.33
29	WOD-SS-107	B0239-04A	02/22/03	1200	8.44	25.33
30	SV1070608	B0239-05A	02/22/03	1235	8.44	25.33
31	WOD-SS-108	B0239-06A	02/22/03	1311	8.44	25.34
32	WOD-SS-108MS	B0239-06AMS	02/22/03	1346	8.44	25.34

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	WOD-SS-108MS	B0239-06AMSD	02/22/03	1421	8.44	25.34
02	AR1660BW	AR1660BW	02/22/03	1718	8.44	25.34
03	SV1080608	B0239-07A	02/22/03	1828	8.44	25.35
04	AR1660BX	AR1660BX	02/23/03	0242	8.44	25.35
05						
06						
07						
08						
09						
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32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/21/03 Time: 1259

Lab File ID: E1D9374F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11676.000	0.01	2.2	15.0
(2)	24115.960	23216.000	0.01	3.7	15.0
(3)	14202.320	13583.000	0.01	4.4	15.0
Aroclor-1260	29455.240	28749.000	0.01	2.4	15.0
(2)	40190.280	43990.000	0.01	9.4	15.0
(3)	23147.960	23558.000	0.01	1.8	15.0
Tetrachloro-m-xylene	503358.00	511300.00	0.01	1.6	15.0
Decachlorobiphenyl	581298.00	567250.00	0.01	2.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/21/03 Time: 1259

Lab File ID: E1D9374R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44518.000	0.01	5.2	15.0
(2)	24183.600	22283.000	0.01	7.8	15.0
(3)	20737.640	19263.000	0.01	7.1	15.0
Aroclor-1260	45409.320	43759.000	0.01	3.6	15.0
(2)	46248.440	45150.000	0.01	2.4	15.0
(3)	64584.960	67147.000	0.01	4.0	15.0
Tetrachloro-m-xylene	741526.00	694350.00	0.01	6.4	15.0
Decachlorobiphenyl	711418.00	733150.00	0.01	3.0	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/21/03 Time: 2226

Lab File ID: E1D9390F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11753.000	0.01	1.5	15.0
(2)	24115.960	23515.000	0.01	2.5	15.0
(3)	14202.320	13702.000	0.01	3.5	15.0
Aroclor-1260	29455.240	28649.000	0.01	2.7	15.0
(2)	40190.280	44224.000	0.01	10.0	15.0
(3)	23147.960	23873.000	0.01	3.1	15.0
Tetrachloro-m-xylene	503358.00	518400.00	0.01	3.0	15.0
Decachlorobiphenyl	581298.00	570050.00	0.01	1.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/21/03 Time: 2226

Lab File ID: E1D9390R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45228.000	0.01	3.7	15.0
(2)	24183.600	22480.000	0.01	7.0	15.0
(3)	20737.640	19547.000	0.01	5.7	15.0
Aroclor-1260	45409.320	44445.000	0.01	2.1	15.0
(2)	46248.440	45738.000	0.01	1.1	15.0
(3)	64584.960	68012.000	0.01	5.3	15.0
Tetrachloro-m-xylene	741526.00	711200.00	0.01	4.1	15.0
Decachlorobiphenyl	711418.00	742550.00	0.01	4.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/22/03 Time: 0753

Lab File ID: E1D9406F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11536.000	0.01	3.3	15.0
(2)	24115.960	23109.000	0.01	4.2	15.0
(3)	14202.320	13557.000	0.01	4.5	15.0
Aroclor-1260	29455.240	28480.000	0.01	3.3	15.0
(2)	40190.280	42982.000	0.01	6.9	15.0
(3)	23147.960	23147.000	0.01	0.0	15.0
Tetrachloro-m-xylene	503358.00	507400.00	0.01	0.8	15.0
Decachlorobiphenyl	581298.00	557850.00	0.01	4.0	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/22/03 Time: 0753

Lab File ID: E1D9406R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44700.000	0.01	4.8	15.0
(2)	24183.600	22334.000	0.01	7.6	15.0
(3)	20737.640	19452.000	0.01	6.2	15.0
Aroclor-1260	45409.320	43797.000	0.01	3.6	15.0
(2)	46248.440	45197.000	0.01	2.3	15.0
(3)	64584.960	67308.000	0.01	4.2	15.0
Tetrachloro-m-xylene	741526.00	699300.00	0.01	5.7	15.0
Decachlorobiphenyl	711418.00	741300.00	0.01	4.2	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/22/03 Time: 1718

Lab File ID: E1D9422F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11624.000	0.01	2.6	15.0
(2)	24115.960	23321.000	0.01	3.3	15.0
(3)	14202.320	13714.000	0.01	3.4	15.0
Aroclor-1260	29455.240	29054.000	0.01	1.4	15.0
(2)	40190.280	43988.000	0.01	9.4	15.0
(3)	23147.960	23809.000	0.01	2.8	15.0
Tetrachloro-m-xylene	503358.00	514250.00	0.01	2.2	15.0
Decachlorobiphenyl	581298.00	567800.00	0.01	2.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/22/03 Time: 1718

Lab File ID: E1D9422R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45495.000	0.01	3.1	15.0
(2)	24183.600	22677.000	0.01	6.2	15.0
(3)	20737.640	19993.000	0.01	3.6	15.0
Aroclor-1260	45409.320	44418.000	0.01	2.2	15.0
(2)	46248.440	46042.000	0.01	0.4	15.0
(3)	64584.960	68499.000	0.01	6.1	15.0
Tetrachloro-m-xylene	741526.00	717000.00	0.01	3.3	15.0
Decachlorobiphenyl	711418.00	755200.00	0.01	6.2	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11582.000	0.01	2.9	15.0
(2)	24115.960	23131.000	0.01	4.1	15.0
(3)	14202.320	13615.000	0.01	4.1	15.0
Aroclor-1260	29455.240	28477.000	0.01	3.3	15.0
(2)	40190.280	43668.000	0.01	8.6	15.0
(3)	23147.960	23315.000	0.01	0.7	15.0
Tetrachloro-m-xylene	503358.00	515350.00	0.01	2.4	15.0
Decachlorobiphenyl	581298.00	566950.00	0.01	2.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45838.000	0.01	2.4	15.0
(2)	24183.600	23075.000	0.01	4.6	15.0
(3)	20737.640	20030.000	0.01	3.4	15.0
Aroclor-1260	45409.320	45242.000	0.01	0.4	15.0
(2)	46248.440	46834.000	0.01	1.3	15.0
(3)	64584.960	69479.000	0.01	7.6	15.0
Tetrachloro-m-xylene	741526.00	731650.00	0.01	1.3	15.0
Decachlorobiphenyl	711418.00	760550.00	0.01	6.9	15.0

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: B1JLCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		280	85	62-155
Aroclor-1260	330		310	94	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix Spike - Sample No.: WOD-SS-108

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	380	0.00	270	71	62-155
Aroclor-1260	380	0.00	290	76	56-173

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	380	280	74	4	40	62-155
Aroclor-1260	380	310	82	8	40	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 9, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND PH**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0239

SAMPLES: 6/SOIL/

WOD-SS-106	WOD-SS-107	WOD-SS-108
WOD-SU-106-0608	WOD-SU-107-0608	WOD-SU-108-0608

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0239, consists of six (6) soil environmental samples.

All samples were analyzed for target analyte list (TAL) metals. Samples WOD-SS-106, WOD-SS-107, and WOD-SS-108 were also analyzed for pH. The samples were collected by Tetra Tech NUS February 10, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Analyses of grain size were subcontracted to RI Analytical Laboratories and submitted with this SDG. Results for grain size were not entered into the database. Analyses of total organic carbon (TOC) were subcontracted to Severn Trent Laboratories Burlington and will be submitted in a separate SDG. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7471A. pH analyses were conducted using SW846 method 9045C.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, post-digest spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Barium[(1)]	0.250 mg/kg	1.25 mg/kg
Copper	8.5 ug/L	2.125 mg/kg
Manganese[(1)]	0.071 mg/kg	0.355 mg/kg
Potassium	549.4 ug/L	137.35 mg/kg
Sodium	267.1 ug/L	66.78 mg/kg

[(1)] Maximum concentration present in soil preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for copper, potassium, and sodium were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetects.

- The matrix spike percent recoveries (%Rs) were below the 75% control limit for antimony, arsenic, cadmium, lead, selenium, and thallium. Positive results reported for antimony, arsenic, cadmium, lead, and thallium were qualified as biased low (L). Nondetected results reported for antimony, cadmium, selenium, and thallium were qualified as biased low (UL).

- The ICP serial dilution percent difference (%D) was above the 10% control limit and the initial sample result was >50X the instrument detection limit (IDL) for potassium. Positive results reported for potassium were qualified as estimated (J).

Notes

The sample IDs with the prefix "WOD-SU" were reported incorrectly by the laboratory as "WOD-SV". The data reviewer amended the database for these samples.

The post-digest spike %R for cadmium was reported incorrectly by the laboratory due to an error in the spike added. The laboratory submitted a corrected form.

The ICP serial dilution results page was accidentally omitted from this data package. The laboratory was contacted and Karen Gavitt submitted the missing page.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: Several analytes were qualified due to matrix spike noncompliance. Potassium was qualified due to ICP serial dilution noncompliance.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
J	-	Positive result is considered estimated as a result of technical noncompliance.
L	-	Positive result is considered biased low as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-106
samp_date	2/10/2003
lab_id	B0239-02A
qc_type	NM
units	MG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2860		
ANTIMONY	0.36	L	D
ARSENIC	1.8	L	D
BARIUM	18.3		
BERYLLIUM	0.19		
CADMIUM	0.24	L	D
CALCIUM	425		
CHROMIUM	3.9		
COBALT	0.85		
COPPER	4.6		
IRON	2570		
LEAD	22.4	L	D
MAGNESIUM	247		
MANGANESE	45.4		
MERCURY	0.030		
NICKEL	1.7		
POTASSIUM	140	J	I
SELENIUM	0.45	UL	D
SILVER	0.44		
SODIUM	16.4	B	A
THALLIUM	0.15	UL	D
VANADIUM	6.2		
ZINC	27.0		

nsample	WOD-SS-107
samp_date	2/10/2003
lab_id	B0239-04A
qc_type	NM
units	MG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5090		
ANTIMONY	0.14	UL	D
ARSENIC	1.9	L	D
BARIUM	18.2		
BERYLLIUM	0.24		
CADMIUM	0.035	L	D
CALCIUM	105		
CHROMIUM	5.1		
COBALT	1.2		
COPPER	2.5		
IRON	4020		
LEAD	5.0	L	D
MAGNESIUM	302		
MANGANESE	41.5		
MERCURY	0.018	U	
NICKEL	2.4		
POTASSIUM	181	J	I
SELENIUM	0.41	UL	D
SILVER	0.092	U	
SODIUM	8.1	B	A
THALLIUM	0.14	UL	D
VANADIUM	7.7		
ZINC	8.9		

nsample	WOD-SS-108
samp_date	2/10/2003
lab_id	B0239-06A
qc_type	NM
units	MG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3960		
ANTIMONY	0.16	UL	D
ARSENIC	1.9	L	D
BARIUM	20.6		
BERYLLIUM	0.25		
CADMIUM	0.084	L	D
CALCIUM	344		
CHROMIUM	4.8		
COBALT	1.3		
COPPER	2.3		
IRON	3810		
LEAD	7.0	L	D
MAGNESIUM	370		
MANGANESE	73.5		
MERCURY	0.020		
NICKEL	2.3		
POTASSIUM	219	J	I
SELENIUM	0.47	UL	D
SILVER	0.11	U	
SODIUM	8.9	B	A
THALLIUM	0.16	UL	D
VANADIUM	7.4		
ZINC	14.7		

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-106-0608
samp_date	2/10/2003
lab_id	B0239-03A
qc_type	NM
units	MG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2100		
ANTIMONY	0.15	UL	D
ARSENIC	1.1	L	D
BARIUM	16.0		
BERYLLIUM	0.098		
CADMIUM	0.034	UL	D
CALCIUM	77.5		
CHROMIUM	1.6		
COBALT	0.25		
COPPER	0.60	B	A
IRON	1210		
LEAD	0.57	L	D
MAGNESIUM	58.9		
MANGANESE	8.1		
MERCURY	0.014	U	
NICKEL	0.72		
POTASSIUM	66.1	B	A
SELENIUM	0.44	UL	D
SILVER	0.098	U	
SODIUM	8.7	B	A
THALLIUM	0.15	UL	D
VANADIUM	2.0		
ZINC	1.9		

nsample	WOD-SU-107-0608
samp_date	2/10/2003
lab_id	B0239-05A
qc_type	NM
units	MG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2060		
ANTIMONY	0.15	UL	D
ARSENIC	1.3	L	D
BARIUM	8.9		
BERYLLIUM	0.12		
CADMIUM	0.036	UL	D
CALCIUM	56.6		
CHROMIUM	2.5		
COBALT	0.26		
COPPER	0.61	B	A
IRON	1460		
LEAD	0.80	L	D
MAGNESIUM	78.3		
MANGANESE	13.0		
MERCURY	0.018	U	
NICKEL	0.80		
POTASSIUM	73.4	B	A
SELENIUM	0.46	UL	D
SILVER	0.10	U	
SODIUM	4.9	B	A
THALLIUM	0.15	UL	D
VANADIUM	3.1		
ZINC	1.6		

nsample	WOD-SU-108-0608
samp_date	2/10/2003
lab_id	B0239-07A
qc_type	NM
units	MG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1470		
ANTIMONY	0.15	UL	D
ARSENIC	1.3	L	D
BARIUM	20.6		
BERYLLIUM	0.12		
CADMIUM	0.034	UL	D
CALCIUM	70.6		
CHROMIUM	2.3		
COBALT	0.10		
COPPER	0.60	B	A
IRON	1670		
LEAD	0.93	L	D
MAGNESIUM	43.7		
MANGANESE	7.4		
MERCURY	0.018	U	
NICKEL	0.44		
POTASSIUM	43.3	B	A
SELENIUM	0.44	UL	D
SILVER	0.098	U	
SODIUM	4.1	U	
THALLIUM	0.18	L	D
VANADIUM	2.1		
ZINC	1.1		

PROJ_NO: 4740

SDG: B0239 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-106
samp_date	2/10/2003
lab_id	B0239-02A
qc_type	NM
Pct_Solids	89
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	7		

nsample	WOD-SS-107
samp_date	2/10/2003
lab_id	B0239-04A
qc_type	NM
Pct_Solids	91
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.2		

nsample	WOD-SS-108
samp_date	2/10/2003
lab_id	B0239-06A
qc_type	NM
Pct_Solids	85
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.1		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-106

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-02A

Level (low/med): MED Date Received: 02/11/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2860			P
7440-36-0	Antimony	0.36	B	N	P
7440-38-2	Arsenic	1.8		N	P
7440-39-3	Barium	18.3			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.24	B	N	P
7440-70-2	Calcium	425			P
7440-47-3	Chromium	3.9			P
7440-48-4	Cobalt	0.85	B		P
7440-50-8	Copper	4.6			P
7439-89-6	Iron	2570			P
7439-92-1	Lead	22.4		N	P
7439-95-4	Magnesium	247			P
7439-96-5	Manganese	45.4			P
7439-97-6	Mercury	0.030	B		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	140		E	P
7782-49-2	Selenium	0.45	U	N	P
7440-22-4	Silver	0.44	B		P
7440-23-5	Sodium	16.4	B		P
7440-28-0	Thallium	0.15	U	N	P
7440-62-2	Vanadium	6.2			P
7440-66-6	Zinc	27.0			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-107

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-04A

Level (low/med): MED Date Received: 02/11/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5090			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	1.9		N	P
7440-39-3	Barium	18.2			P
7440-41-7	Beryllium	0.24			P
7440-43-9	Cadmium	0.035	B	N	P
7440-70-2	Calcium	105			P
7440-47-3	Chromium	5.1			P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	2.5			P
7439-89-6	Iron	4020			P
7439-92-1	Lead	5.0		N	P
7439-95-4	Magnesium	302			P
7439-96-5	Manganese	41.5			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	2.4			P
7440-09-7	Potassium	181		E	P
7782-49-2	Selenium	0.41	U	N	P
7440-22-4	Silver	0.092	U		P
7440-23-5	Sodium	8.1	B		P
7440-28-0	Thallium	0.14	U	N	P
7440-62-2	Vanadium	7.7			P
7440-66-6	Zinc	8.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-108

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-06A

Level (low/med): MED Date Received: 02/11/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3960			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	1.9		N	P
7440-39-3	Barium	20.6			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.084	B	N	P
7440-70-2	Calcium	344			P
7440-47-3	Chromium	4.8			P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	2.3			P
7439-89-6	Iron	3810			P
7439-92-1	Lead	7.0		N	P
7439-95-4	Magnesium	370			P
7439-96-5	Manganese	73.5			P
7439-97-6	Mercury	0.020	B		CV
7440-02-0	Nickel	2.3	B		P
7440-09-7	Potassium	219		E	P
7782-49-2	Selenium	0.47	U	N	P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	8.9	B		P
7440-28-0	Thallium	0.16	U	N	P
7440-62-2	Vanadium	7.4			P
7440-66-6	Zinc	14.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1060608

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-03A

Level (low/med): MED Date Received: 02/11/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2100			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.1		N	P
7440-39-3	Barium	16.0			P
7440-41-7	Beryllium	0.098	B		P
7440-43-9	Cadmium	0.034	U	N	P
7440-70-2	Calcium	77.5			P
7440-47-3	Chromium	1.6			P
7440-48-4	Cobalt	0.25	B		P
7440-50-8	Copper	0.60	B		P
7439-89-6	Iron	1210			P
7439-92-1	Lead	0.57		N	P
7439-95-4	Magnesium	58.9			P
7439-96-5	Manganese	8.1			P
7439-97-6	Mercury	0.014	U		CV
7440-02-0	Nickel	0.72	B		P
7440-09-7	Potassium	66.1		E	P
7782-49-2	Selenium	0.44	U	N	P
7440-22-4	Silver	0.098	U		P
7440-23-5	Sodium	8.7	B		P
7440-28-0	Thallium	0.15	U	N	P
7440-62-2	Vanadium	2.0	B		P
7440-66-6	Zinc	1.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1070608

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-05A

Level (low/med): MED Date Received: 02/11/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2060			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.3		N	P
7440-39-3	Barium	8.9	B		P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	0.036	U	N	P
7440-70-2	Calcium	56.6			P
7440-47-3	Chromium	2.5			P
7440-48-4	Cobalt	0.26	B		P
7440-50-8	Copper	0.61	B		P
7439-89-6	Iron	1460			P
7439-92-1	Lead	0.80		N	P
7439-95-4	Magnesium	78.3			P
7439-96-5	Manganese	13.0			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.80	B		P
7440-09-7	Potassium	73.4		E	P
7782-49-2	Selenium	0.46	U	N	P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	4.9	B		P
7440-28-0	Thallium	0.15	U	N	P
7440-62-2	Vanadium	3.1			P
7440-66-6	Zinc	1.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1080608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Lab Sample ID: B0239-07A

Level (low/med): MED Date Received: 02/11/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1470			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.3		N	P
7440-39-3	Barium	20.6			P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	0.034	U	N	P
7440-70-2	Calcium	70.6			P
7440-47-3	Chromium	2.3			P
7440-48-4	Cobalt	0.10	B		P
7440-50-8	Copper	0.60	B		P
7439-89-6	Iron	1670			P
7439-92-1	Lead	0.93		N	P
7439-95-4	Magnesium	43.7			P
7439-96-5	Manganese	7.4			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.44	B		P
7440-09-7	Potassium	43.3	B	E	P
7782-49-2	Selenium	0.44	U	N	P
7440-22-4	Silver	0.098	U		P
7440-23-5	Sodium	4.1	U		P
7440-28-0	Thallium	0.18	B	N	P
7440-62-2	Vanadium	2.1	B		P
7440-66-6	Zinc	1.1	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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Percent Moisture and Percent Solids Report

Mitkem Sample ID	*Client Sample ID*	*Analyzed*	*Percent Moisture*	*Percent Solids*	*Validated*
B0239-02A	*WOD-SS-106*	02/11/2003	11	89	Yes
B0239-03A	*WOD-SV-106-0608*	02/11/2003	7	93	Yes
B0239-04A	*WOD-SS-107*	02/11/2003	9	91	Yes
B0239-05A	*WOD-SV-107-0608*	02/11/2003	8	92	Yes
B0239-06A	*WOD-SS-108*	02/11/2003	15	85	Yes
B0239-07A	*WOD-SV-108-0608*	02/11/2003	7	93	Yes

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	WOD-SS-106
Lab Order:	B0239	**Tag Number:**	
Project:	Wallops Island	**Collection Date:**	2/10/03 11:45:00 AM
Lab ID:	B0239-02A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	7.0	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	WOD-SS-107
Lab Order:	B0239	**Tag Number:**	
Project:	Wallops Island	**Collection Date:**	2/10/03 12:45:00 PM
Lab ID:	B0239-04A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.2	1.0		pH Units	1	02/11/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	WOD-SS-108
Lab Order:	B0239	**Tag Number:**	
Project:	Wallops Island	**Collection Date:**	2/10/03 1:45:00 PM
Lab ID:	B0239-06A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.1	1.0		pH Units	1	02/11/03 0:00

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1833
Date Received: 2/11/03

Approved by: _____
R.I. Analytical

Sample #: 001 B0239-02C GRAB 02/10/03 @1145

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.60	99.40
No. 10	1.38	98.02
No. 20	7.05	90.97
No. 40	25.26	65.71
No. 60	30.12	35.59
No. 140	30.57	5.02
No. 200	1.75	3.27

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1833
Date Received: 2/11/03

Approved by: _____
R.I. Analytical

Sample #: 002 B0239-04C GRAB 02/10/03 @1245

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.81	99.19
No. 10	2.04	97.15
No. 20	6.03	91.12
No. 40	18.04	73.08
No. 60	26.09	46.99
No. 140	40.16	6.83
No. 200	2.31	4.52

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1833
Date Received: 2/11/03

Approved by: _____
R.I. Analytical

Sample #: 003 B0239-06C GRAB 02/10/03 @1345

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	0.33	99.67
No. 20	2.88	96.79
No. 40	16.97	79.82
No. 60	27.89	51.93
No. 140	43.33	8.60
No. 200	2.62	5.98

APPENDIX C

SUPPORT DOCUMENTATION

B0239

HOLDING TIME
04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0212LCSS	LCS	B0239	HG	/ /	02/12/03	02/13/03	0	1	0
MG/KG	PBS	0212PBS	M_BLANK	B0239	HG	/ /	02/12/03	02/13/03	0	1	0
MG/KG	WOD-SS-106	B0239-02A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-107	B0239-04A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-108	B0239-06A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SS-108DUP	B0239-06ADUP	DUPLICATE	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
MG/KG	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	HG	02/10/03	02/12/03	02/13/03	2	1	3
%	LCSS	0212LCSS	LCS	B0239	M	/ /	02/12/03	02/12/03	0	0	0
MG/KG	PBS	0212PBS	M_BLANK	B0239	M	/ /	02/12/03	02/12/03	0	0	0
MG/KG	WOD-SS-106	B0239-02A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-107	B0239-04A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-108	B0239-06A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SS-108DUP	B0239-06ADUP	DUPLICATE	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
UG/L	WOD-SS-108L	B0239-06AL	NORMAL	B0239	M	02/10/03	02/13/03	02/13/03	3	0	3
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
MG/KG	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	M	02/10/03	02/12/03	02/12/03	2	0	2
%	SBLK2C	MB-5778	M_BLANK	B0239	OS	/ /	02/24/03	03/10/03	0	14	0
%	SBLK2CLCS	LCS-5778	LCS	B0239	OS	/ /	02/24/03	03/10/03	0	14	0
%	WOD-SS-106	B0239-02A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-107	B0239-04A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108	B0239-06A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SS-108MSD	B0239-06AMSD	MSD	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
%	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	OS	02/10/03	02/24/03	03/10/03	14	14	28
UG/L	TB-021003	B0239-01A	NORMAL	B0239	OV	02/10/03	02/20/03	02/20/03	10	0	10
%	VBLK1R	V1B0212A	M_BLANK	B0239	OV	/ /	02/12/03	02/12/03	0	0	0
%	VBLK1RLCS	V1L0212A	LCS	B0239	OV	/ /	02/12/03	02/12/03	0	0	0
UG/L	VBLK6H	V6B0220A	M_BLANK	B0239	OV	/ /	02/20/03	02/20/03	0	0	0
%	VBLK6HLCS	V6L0220A	LCS	B0239	OV	/ /	02/20/03	02/20/03	0	0	0
%	WOD-SS-106	B0239-02B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-107	B0239-04B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108	B0239-06B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108MS	B0239-06BMS	MS	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SS-108MSD	B0239-06BMSD	MSD	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-106-0608	B0239-03B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-107-0608	B0239-05B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	WOD-SV-108-0608	B0239-07B	NORMAL	B0239	OV	02/10/03	02/12/03	02/12/03	2	0	2
%	BBLK1J	MB-5734	M_BLANK	B0239	PCB	/ /	02/20/03	02/21/03	0	1	0
%	BBLK1JLCS	LCS-5734	LCS	B0239	PCB	/ /	02/20/03	02/21/03	0	1	0
%	WOD-SS-106	B0239-02A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-107	B0239-04A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108	B0239-06A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108MS	B0239-06AMS	MS	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SS-108MSD	B0239-06AMSD	MSD	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-106-0608	B0239-03A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SV-107-0608	B0239-05A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
%	WOD-SV-108-0608	B0239-07A	NORMAL	B0239	PCB	02/10/03	02/20/03	02/22/03	10	2	12
S.U.	WOD-SS-106	B0239-02A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1
S.U.	WOD-SS-107	B0239-04A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1
S.U.	WOD-SS-108	B0239-06A	NORMAL	B0239	PH	02/10/03	02/11/03	02/11/03	1	0	1

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919658		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0239
NAME: Garth Glenn	FAX: 610 491 9645		NAME: ~~Foster~~ cm 2/19/03	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406			CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CT0846

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA Vial HCl	TCL VOC 5 gram Encore Sampler	TCL VOC 40z amber glass w/teflon	SVOC+ PCB 40z amber glass w/teflon	TAL metals 40z amber glass unpres	TCL SVOC+ PCB 80z Amber glass	Grain Size 40z Amber glass	TAL Metals Hg Mass ✓	COMMENTS
TB-021003	2/10/03 / 0900		X	X			01	2	2								Trip Blank
WOD-SS-106	2/10/03 / 1145		X		X		02	7		3	1*	1✓	1*	1✓			
WOD-SU-106-0608	2/10/03 / 1225		X		X		03	5		3	1				1✓		
WOD-SS-107	2/10/03 / 1245		X		X		04	7		3	1	1✓	1	1✓			
WOD-SU-107-0608	2/10/03 / 1305		X		X		05	5		3	1				1✓		
WOD-SS-108	2/10/03 / 1345		X		X		06	16		9	2	2✓	2	1✓			Do Hg/MSD
WOD-SU-108-0608	2/10/03 / 1415		X		X		07	5		3	1				1✓		
	/																
	/																
	/																
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	2/10/03 / 1700	Nathan Remaklus	2/11/03 / 0900	Laboratory supplied Blank water for TB	3°
		/		/	shipped Via Federal Express	
		/		/	Airbill No 8286 8471 0210	

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

000011

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0239

Mitkem Project ID: B0239

March 21, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and six soil samples that were collected on February 10, 2003, and received at Mitkem on February 11, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of chloroethane in V1RLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of acetone.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally low recovery of 2-fluorobiphenyl on samples WOD-SS-108MS and WOD-SS-108MSD and high recovery of 2-fluorophenol in the method blank SBLK2C.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Most spike recoveries in the matrix spike and matrix spike duplicate were not within the QC limits. Replicate RPDs were within the QC limits with the exception of 3-nitroaniline, 4-nitroaniline and 3,3'-dichlorobenzidine. Spike recoveries outside of QC limits is most likely due to matrix effect.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-108. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-108. Spike recoveries were within the QC limits with the exception of antimony, arsenic, cadmium, lead, selenium and thallium. These elements are flagged with an "N" flag on Form 1's. Post digest spike was performed with spike recoveries within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-108. Replicate RPDs were within the QC limits.

Sample analysis: potassium was outside of QC limits in the serial dilution. Potassium is flagged with an "E" flag on Form 1's. No other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The analyses for Total Organic Carbon were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/21/03

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239_

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
_SV1060608_____	_B0239-03A_____
SV1070608	B0239-05A
_SV1080608_____	_B0239-07A_____
_WOD-SS-106_____	_B0239-02A_____
_WOD-SS-107_____	_B0239-04A_____
_WOD-SS-108_____	_B0239-06A_____
_WOD-SS-108D_____	_B0239-06AD_____
_WOD-SS-108S_____	_B0239-06AS_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

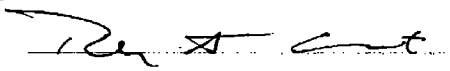
_____

_____

_____

_____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:  Name: Reinier A. Coutant

Date: 2/28/03 Title: Chemist

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/11/03
Date Reported: 2/18/03
P.O. #: 287
Work Order #: 0302-01833

DESCRIPTION: PROJECT# B0239 (THREE SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	0.250	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.045	U	P
Copper	8.5	B	4.0	U	4.0	U	4.0	U	0.251	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	1.300	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium	8.0	U	-9.9	B	8.0	U	-9.7	B	0.400	U	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.071	B	P
Mercury	0.1	U	0.	U	0.1	U	0.1	U	0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.040	U	P
Potassium	549.4	B	242.4	B	324.5	B			19.325	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	0.450	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium	267.1	B	83.0	U	83.0	U			9.953	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U							P
Antimony			3.0	U							P
Arsenic			3.0	U							P
Barium			4.0	U							P
Beryllium			0.5	U							P
Cadmium			0.7	U							P
Calcium			240.0	U							P
Chromium			0.6	U							P
Cobalt			0.9	U							P
Copper			4.0	U							P
Iron			26.0	U							P
Lead			4.0	U							P
Magnesium			8.0	U							P
Manganese			0.8	U							P
Mercury											
Nickel			0.8	U							P
Potassium											
Selenium			9.0	U							P
Silver			2.0	U							P
Sodium											
Thallium			3.0	U							P
Vanadium			0.7	U							P
Zinc			7.0	U							P
Cyanide											

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WOD-SS-108S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	14.1173		0.1576	U	23.90	59.1	N	P
Arsenic	75-125	17.1569		1.8632		23.90	64.0	N	P
Barium	75-125	501.0485		20.6456		477.94	100.5		P
Beryllium	75-125	11.8901		0.2475	B	11.92	97.7		P
Cadmium	75-125	7.8514		0.0836	B	11.92	65.2	N	P
Calcium									NR
Chromium	75-125	52.5576		4.8318		47.79	99.9		P
Cobalt	75-125	125.8763		1.3203	B	119.22	104.5		P
Copper	75-125	62.3148		2.3191		59.35	101.1		P
Iron									NR
Lead	75-125	22.2153		6.9808		23.90	63.7	N	P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.9129		0.0196	B	0.76	117.5		CV
Nickel	75-125	116.9478		2.2733	B	119.22	96.2		P
Potassium									NR
Selenium	75-125	14.1319		0.4727	U	23.90	59.1	N	P
Silver	75-125	52.5860		0.1050	U	59.35	88.6		P
Sodium									NR
Thallium	75-125	15.5798		0.1576	U	23.90	65.2	N	P
Vanadium	75-125	122.2713		7.3597		119.22	96.4		P
Zinc	75-125	133.0725		14.7474		119.22	99.2		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WOD-SS-108A

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239__

Matrix (soil/water): SOIL___ Level (low/med): MED___

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		471.13		3.00	U	455.0	103.5		P
Arsenic		478.96		35.48		455.0	97.5		P
Barium									NR
Beryllium									NR
Cadmium		218.45		1.59	B	227.0	95.5		P
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead		567.71		132.91		455.0	95.6		P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium		412.37		9.00	U	455.0	90.6		P
Silver									NR
Sodium									NR
Thallium		453.19		3.00	U	455.0	99.6		P
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

000561R
5/7/03

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

WOD-SS-108L

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Aluminum							NR
Antimony							NR
Arsenic							NR
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron							NR
Lead							NR
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium	4161.14		5130.43		23.3	E	P
Selenium							NR
Silver							NR
Sodium	168.98	B	415.00	U	100.0		P
Thallium							NR
Vanadium							NR
Zinc							NR

0005634

5/7/03

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		800	17.0	P
Antimony	206.83		60	3.0	P
Arsenic	188.98		15	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		20000	240.0	P
Chromium	267.72		40	0.6	P
Cobalt	228.62		200	0.9	P
Copper	324.75		100	4.0	P
Iron	273.96		400	26.0	P
Lead	220.35		40	4.0	P
Magnesium	279.08		20000	8.0	P
Manganese	257.61		60	0.8	P
Mercury			0.6		NR
Nickel	231.60		160	0.8	P
Potassium			20000		NR
Selenium	196.03		140	9.0	P
Silver	328.07		40	2.0	P
Sodium			20000		NR
Thallium	190.80		40	3.0	P
Vanadium	292.40		200	0.7	P
Zinc	206.20		240	7.0	P
Cyanide			10		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239__

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		800	17.0	P
Antimony	206.83		60	3.0	P
Arsenic	188.98		15	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			20000		NR
Chromium	267.72		40	0.6	P
Cobalt	228.62		200	0.9	P
Copper	324.75		100	4.0	P
Iron	273.96		400	26.0	P
Lead	220.35		40	4.0	P
Magnesium	279.08		20000	8.0	P
Manganese	257.61		60	0.8	P
Mercury			0.6		NR
Nickel	231.60		160	0.8	P
Potassium	766.49		20000	78.0	P
Selenium			140		NR
Silver			40		NR
Sodium	589.59		20000	83.0	P
Thallium			40		NR
Vanadium			200		NR
Zinc			240		NR
Cyanide			10		NR

Comments:

_____

_____

_____

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			800		NR
Antimony			60		NR
Arsenic			15		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			20000		NR
Chromium			40		NR
Cobalt			200		NR
Copper			100		NR
Iron			400		NR
Lead			40		NR
Magnesium			20000		NR
Manganese			60		NR
Mercury	253.70		0.6	0.1	CV
Nickel			160		NR
Potassium			20000		NR
Selenium			140		NR
Silver			40		NR
Sodium			20000		NR
Thallium			40		NR
Vanadium			200		NR
Zinc			240		NR
Cyanide			10		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0239____

Method: P___

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/12/03	0.50	50
PBS	02/12/03	1.00	50
SV1060608	02/12/03	1.10	50
SV1070608	02/12/03	1.07	50
SV1080608	02/12/03	1.10	50
WOD-SS-106	02/12/03	1.12	50
WOD-SS-107	02/12/03	1.20	50
WOD-SS-108	02/12/03	1.12	50
WOD-SS-108D	02/12/03	1.12	50
WOD-SS-108S	02/12/03	1.12	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/12/03	0.60	100
PBS	02/12/03	0.60	100
SV1060608	02/12/03	0.75	100
SV1070608	02/12/03	0.60	100
SV1080608	02/12/03	0.61	100
WOD-SS-106	02/12/03	0.66	100
WOD-SS-107	02/12/03	0.60	100
WOD-SS-108	02/12/03	0.62	100
WOD-SS-108D	02/12/03	0.62	100
WOD-SS-108S	02/12/03	0.62	100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239__

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 02/12/03___ End Date: 02/12/03___

EPA Sample No.	D/F	Time	% R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1602		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1606		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1611		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1615		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1619																									
ZZZZZZ	1.00	1623																									
ZZZZZZ	1.00	1625																									
ZZZZZZ	1.00	1629																									
ZZZZZZ	1.00	1633																									
ICV	1.00	1638		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1642		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1646		X						X				X		X											
ICSAB	1.00	1649		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1652																									
ZZZZZZ	1.00	1656																									
ZZZZZZ	1.00	1700																									
ZZZZZZ	1.00	1704																									
ZZZZZZ	1.00	1708																									
ZZZZZZ	1.00	1712																									
CCV	1.00	1716		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1720		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBS	1.00	1725		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSS	1.00	1729		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1733																									
ZZZZZZ	1.00	1737																									
ZZZZZZ	1.00	1741																									
ZZZZZZ	1.00	1745																									
ZZZZZZ	1.00	1749																									
ZZZZZZ	1.00	1752																									
CCV	1.00	1754		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1759		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1803																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239__

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/12/03___ End Date: 02/12/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1807																								
ZZZZZZ	1.00	1811																								
ZZZZZZ	1.00	1815																								
ZZZZZZ	1.00	1819																								
ZZZZZZ	1.00	1823																								
ZZZZZZ	1.00	1828																								
WOD-SS-106	1.00	1832		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1060608	1.00	1836		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCV	1.00	1840		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1844		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
WOD-SS-107	1.00	1848		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
SV1070608	1.00	1852		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
WOD-SS-108	1.00	1856		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
WOD-SS-108D	1.00	1900		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
WOD-SS-108S	1.00	1905			X	X	X	X	X		X	X	X		X					X		X	X		X	X	X
WOD-SS-108A	1.00	1909			X	X			X						X							X			X		
SV1080608	1.00	1913		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ICSA	1.00	1917		X						X				X		X											
ICSAB	1.00	1920		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCV	1.00	1922		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1926		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239__

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/13/03___ End Date: 02/13/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0853																		X							
S1	1.00	0855																		X							
S2	1.00	0857																		X							
S3	1.00	0859																		X							
ZZZZZZ	1.00	0902																									
ICV	1.00	0904																		X							
ICB	1.00	0906																		X							
ICSA	1.00	0909																									
ICSAB	1.00	0911																		X							
PBS	1.00	0913																		X							
LCSS	1.00	0915																		X							
WOD-SS-106	1.00	0918																		X							
SV1060608	1.00	0920																		X							
WOD-SS-107	1.00	0922																		X							
CCV	1.00	0925																		X							
CCB	1.00	0927																		X							
SV1070608	1.00	0929																		X							
WOD-SS-108	1.00	0932																		X							
WOD-SS-108D	1.00	0934																		X							
~~WOD-SS-108L~~ 22227	1.00	0936																		~~X~~							
SV1080608 RUN 2/13/03	1.00	0938																		X							
ICSA	1.00	0941																									
ICSAB	1.00	0943																		X							
CCV	1.00	0945																		X							
CCB	1.00	0948																		X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0239

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/13/03___ End Date: 02/13/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0950																				X				
S1	1.00	0952																				X				
S2	1.00	0955																				X				
S3	1.00	0957																				X				
ZZZZZZ	1.00	0959																								
ICV	1.00	1002																				X				
ICB	1.00	1004																				X				
ICSA	1.00	1006																								
ICSAB	1.00	1009																				X				
PBS	1.00	1011																				X				
LCSS	1.00	1013																				X				
WOD-SS-106	1.00	1015																				X				
SV1060608	1.00	1018																				X				
WOD-SS-107	1.00	1020																				X				
CCV	1.00	1022																				X				
CCB	1.00	1025																				X				
SV1070608	1.00	1027																				X				
WOD-SS-108	1.00	1029																				X				
WOD-SS-108D	1.00	1031																				X				
~~WOD-SS-108L~~ 2224 RM 2/13/03	1.00	1034																				~~X~~ RM 2/13/03				
SV1080608	1.00	1036																				X				
ICSA	1.00	1038																								
ICSAB	1.00	1041																				X				
CCV	1.00	1043																				X				
CCB	1.00	1045																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0239__

Instrument ID Number: COMM_FIMS Method: CV_

Start Date: 02/13/03 End Date: 02/13/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1110																X								
S0.2	1.00	1112																X								
S1	1.00	1113																X								
S2	1.00	1114																X								
S5	1.00	1116																X								
S10	1.00	1117																X								
ICV	1.00	1118																X								
ICB	1.00	1120																X								
ZZZZZZ	1.00	1121																								
ZZZZZZ	1.00	1122																								
ZZZZZZ	1.00	1124																								
ZZZZZZ	1.00	1125																								
ZZZZZZ	1.00	1126																								
ZZZZZZ	1.00	1128																								
ZZZZZZ	1.00	1129																								
PBS	1.00	1130																X								
CCV	1.00	1132																X								
CCB	1.00	1133																X								
LCSS	1.00	1134																X								
WOD-SS-106	1.00	1136																X								
SV1060608	1.00	1137																X								
WOD-SS-107	1.00	1138																X								
SV1070608	1.00	1140																X								
WOD-SS-108	1.00	1141																X								
WOD-SS-108D	1.00	1142																X								
WOD-SS-108S	1.00	1144																X								
CCV	1.00	1145																X								
CCB	1.00	1146																X								
SV1080608	1.00	1148																X								
ZZZZZZ	1.00	1149																								
ZZZZZZ	1.00	1150																								
ZZZZZZ	1.00	1152																								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0239__

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/13/03 End Date: 02/13/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1153																												
ZZZZZZ	1.00	1154																												
ZZZZZZ	1.00	1156																												
ZZZZZZ	1.00	1157																												
CCV	1.00	1158																X												
CCB	1.00	1200																X												

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Mean Data: B0199-26APDS,5593

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	242646.4	0.7274	mg/L	0.03254	0.7274	mg/L	0.03254	4.47%
Al 308.215	4464626.3	89.183	mg/L	0.0312	89.183	mg/L	0.0312	0.04%
As 188.979	970.1	0.4807	mg/L	0.00116	0.4807	mg/L	0.00116	0.24%
Ba 233.527	766102.2	9.2379	mg/L	0.00349	9.2379	mg/L	0.00349	0.04%
Be 313.107	1861335.7	0.2223	mg/L	0.00058	0.2223	mg/L	0.00058	0.26%
Co 228.616	86801.7	2.2515	mg/L	0.01853	2.2515	mg/L	0.01853	0.82%
Cr 267.716	307672.8	0.9668	mg/L	0.00843	0.9668	mg/L	0.00843	0.87%
Cu 324.752	535141.4	1.1299	mg/L	0.00512	1.1299	mg/L	0.00512	0.45%
Fe 273.955	1866807.1	38.758	mg/L	0.0237	38.758	mg/L	0.0237	0.06%
Mg 279.077	1056368.8	25.250	mg/L	0.0159	25.250	mg/L	0.0159	0.06%
Mn 257.610	998712.6	2.5066	mg/L	0.00044	2.5066	mg/L	0.00044	0.02%
Ni 231.604	154566.9	2.1404	mg/L	0.01548	2.1404	mg/L	0.01548	0.72%
Pb 220.353	9245.8	0.4745	mg/L	0.00049	0.4745	mg/L	0.00049	0.10%
Sb 206.836	1623.4	0.4729	mg/L	0.00440	0.4729	mg/L	0.00440	0.93%
Se 196.026	800.5	0.4136	mg/L	0.00418	0.4136	mg/L	0.00418	1.01%
Tl 190.801	1029.6	0.4513	mg/L	0.00062	0.4513	mg/L	0.00062	0.14%
V 292.402	804932.5	2.2964	mg/L	0.00332	2.2964	mg/L	0.00332	0.14%
Zn 206.200	199034.2	2.1984	mg/L	0.02503	2.1984	mg/L	0.02503	1.14%
Na 330.237	44494.9	21.359	mg/L	0.1804	21.359	mg/L	0.1804	0.84%
Cd 226.502	67478.5	0.2200	mg/L	0.00223	0.2200	mg/L	0.00223	1.01%
Ti 334.940	2499488.7	2.0291	mg/L	0.00418	2.0291	mg/L	0.00418	0.21%
Ca 227.546	14786.1	23.419	mg/L	0.0169	23.419	mg/L	0.0169	0.07%

0.465 → 0.4729

2/13/03

Sequence No.: 38
Sample ID: B0199-27A,5593
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 35
Date Collected: 2/12/2003 6:26:48 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0199-27A,5593

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1231.4	-0.0001	mg/L	0.00002	-0.0001	mg/L	0.00002	15.52%
Al 308.215	2152182.6	42.991	mg/L	0.1673	42.991	mg/L	0.1673	0.39%
As 188.979	25.4	0.0134	mg/L	0.00065	0.0134	mg/L	0.00065	4.82%
Ba 233.527	8081.5	0.0967	mg/L	0.00156	0.0967	mg/L	0.00156	1.62%
Be 313.107	8774.5	0.0020	mg/L	0.00001	0.0020	mg/L	0.00001	0.41%
Co 228.616	191.4	0.0036	mg/L	0.00011	0.0036	mg/L	0.00011	3.04%
Cr 267.716	22034.9	0.0694	mg/L	0.00075	0.0694	mg/L	0.00075	1.08%
Cu 324.752	8524.7	0.0197	mg/L	0.00251	0.0197	mg/L	0.00251	12.77%
Fe 273.955	920261.1	19.106	mg/L	0.0555	19.106	mg/L	0.0555	0.29%
Mg 279.077	76155.8	1.8202	mg/L	0.01492	1.8202	mg/L	0.01492	0.82%
Mn 257.610	62661.5	0.1578	mg/L	0.00181	0.1578	mg/L	0.00181	1.15%
Ni 231.604	980.3	0.0133	mg/L	0.00025	0.0133	mg/L	0.00025	1.88%
Pb 220.353	271.9	0.0177	mg/L	0.00007	0.0177	mg/L	0.00007	0.41%
Sb 206.836	2.9	0.0026	mg/L	0.00081	0.0026	mg/L	0.00081	31.39%
Se 196.026	-2.2	0.0035	mg/L	0.00012	0.0035	mg/L	0.00012	3.33%
Tl 190.801	-2.1	0.0011	mg/L	0.00076	0.0011	mg/L	0.00076	70.92%
V 292.402	17332.6	0.0489	mg/L	0.00078	0.0489	mg/L	0.00078	1.60%
Zn 206.200	3082.9	0.0330	mg/L	0.00042	0.0330	mg/L	0.00042	1.27%
Na 330.237	1287.7	0.8744	mg/L	0.04621	0.8744	mg/L	0.04621	5.28%
Cd 226.502	213.2	0.0000	mg/L	0.00003	0.0000	mg/L	0.00003	61.08%
Ti 334.940	1145833.9	0.9302	mg/L	0.00841	0.9302	mg/L	0.00841	0.90%
Ca 227.546	561.6	0.7571	mg/L	0.01002	0.7571	mg/L	0.01002	1.32%

Sequence No.: 39
Sample ID: B0239-02A,5593
Analyst:
Sample Wt:
Dilution: sample: WOD-55-106

Autosampler Location: 36
Date Collected: 2/12/2003 6:30:56 PM
Sample Prep Volume:
Data Type: Original

89 % Solid
1.12 g
50 mL

Mean Data: B0239-02A,5593

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD

$0.4475 \text{ mg/L} \times \frac{50 \text{ mL}}{1.12 \text{ g}} = \frac{19.98}{0.89} = 22.4 \text{ mg/kg}$ ✓

Ag 328.068	-190.6	0.0088 mg/L	0.00013	0.0088 mg/L	0.00013	1.50%
Al 308.215	2849851.6	56.927 mg/L	0.6114	56.927 mg/L	0.6114	1.07%
As 188.979	64.4	0.0349 mg/L	0.00078	0.0349 mg/L	0.00078	2.25%
Ba 233.527	30482.8	0.3653 mg/L	0.00296	0.3653 mg/L	0.00296	0.81%
Be 313.107	19968.9	0.0037 mg/L	0.00003	0.0037 mg/L	0.00003	0.94%
Co 228.616	744.1	0.0170 mg/L	0.00025	0.0170 mg/L	0.00025	1.48%
Cr 267.716	24420.8	0.0772 mg/L	0.00068	0.0772 mg/L	0.00068	0.89%
Cu 324.752	41247.1	0.0920 mg/L	0.00190	0.0920 mg/L	0.00190	2.06%
Fe 273.955	2471520.6	51.312 mg/L	0.3997	51.312 mg/L	0.3997	0.78%
Mg 279.077	205710.7	4.9192 mg/L	0.03861	4.9192 mg/L	0.03861	0.78%
Mn 257.610	360327.2	0.9052 mg/L	0.00816	0.9052 mg/L	0.00816	0.90%
Ni 231.604	2508.6	0.0343 mg/L	0.00009	0.0343 mg/L	0.00009	0.25%
Pb 220.353	8768.5	0.4475 mg/L	0.00031	0.4475 mg/L	0.00031	0.07%
Sb 206.836	12.0	0.0071 mg/L	0.00056	0.0071 mg/L	0.00056	7.88%
Se 196.026	-20.7	0.0014 mg/L	0.00127	0.0014 mg/L	0.00127	88.67%
Tl 190.801	-14.1	0.0003 mg/L	0.00007	0.0003 mg/L	0.00007	26.95%
V 292.402	43502.0	0.1231 mg/L	0.00130	0.1231 mg/L	0.00130	1.06%
Zn 206.200	48848.9	0.5382 mg/L	0.00380	0.5382 mg/L	0.00380	0.71%
Na 330.237	1660.7	1.1855 mg/L	0.06835	1.1855 mg/L	0.06835	5.77%
Cd 226.502	2059.1	0.0048 mg/L	0.00001	0.0048 mg/L	0.00001	0.14%
Ti 334.940	1589963.9	1.2908 mg/L	0.02294	1.2908 mg/L	0.02294	1.78%
Ca 227.546	5521.6	8.4771 mg/L	0.00856	8.4771 mg/L	0.00856	0.10%

Sequence No.: 40 **Autosampler Location: 37**
Sample ID: B0239-03A,5593 **Date Collected: 2/12/2003 6:35:04 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0239-03A,5593

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-1447.5	0.0003	mg/L	0.00003	0.0003	mg/L	0.00003	10.59%
Al 308.215	2151203.1	42.971	mg/L	0.4289	42.971	mg/L	0.4289	1.00%
As 188.979	46.1	0.0235	mg/L	0.00108	0.0235	mg/L	0.00108	4.59%
Ba 233.527	27304.3	0.3281	mg/L	0.00146	0.3281	mg/L	0.00146	0.44%
Be 313.107	12133.7	0.0020	mg/L	0.00001	0.0020	mg/L	0.00001	0.55%
Co 228.616	233.8	0.0051	mg/L	0.00012	0.0051	mg/L	0.00012	2.39%
Cr 267.716	10045.9	0.0318	mg/L	0.00012	0.0318	mg/L	0.00012	0.39%
Cu 324.752	4533.7	0.0123	mg/L	0.00069	0.0123	mg/L	0.00069	5.57%
Fe 273.955	1192446.6	24.757	mg/L	0.1440	24.757	mg/L	0.1440	0.58%
Mg 279.077	50409.0	1.2051	mg/L	0.01367	1.2051	mg/L	0.01367	1.13%
Mn 257.610	66086.9	0.1665	mg/L	0.00060	0.1665	mg/L	0.00060	0.36%
Ni 231.604	1074.6	0.0147	mg/L	0.00017	0.0147	mg/L	0.00017	1.14%
Pb 220.353	156.5	0.0117	mg/L	0.00040	0.0117	mg/L	0.00040	3.41%
Sb 206.836	-9.9	-0.0011	mg/L	0.00062	-0.0011	mg/L	0.00062	57.70%
Se 196.026	-4.5	0.0037	mg/L	0.00205	0.0037	mg/L	0.00205	55.29%
Tl 190.801	-1.7	0.0009	mg/L	0.00046	0.0009	mg/L	0.00046	53.54%
V 292.402	14541.4	0.0410	mg/L	0.00036	0.0410	mg/L	0.00036	0.87%
Zn 206.200	3663.7	0.0397	mg/L	0.00006	0.0397	mg/L	0.00006	0.15%
Na 330.237	1099.4	0.6982	mg/L	0.06488	0.6982	mg/L	0.06488	9.29%
Cd 226.502	272.3	-0.0001	mg/L	0.00001	-0.0001	mg/L	0.00001	13.66%
Ti 334.940	684166.4	0.5554	mg/L	0.00219	0.5554	mg/L	0.00219	0.39%
Ca 227.546	1106.1	1.5865	mg/L	0.03570	1.5865	mg/L	0.03570	2.25%

Sequence No.: 41 **Autosampler Location: 3**
Sample ID: CCV **Date Collected: 2/12/2003 6:39:11 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	441548.5	1.3113	mg/L	0.01093	1.3113	mg/L	0.01093	0.83%
Al 308.215	486850.8	9.7251	mg/L	0.02132	9.7251	mg/L	0.02132	0.22%
As 188.979	1050.6	0.5194	mg/L	0.00173	0.5194	mg/L	0.00173	0.33%

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 23, 2003**

FROM: **SETH C. STAFFEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOA/SVOA/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG: B0257

SAMPLES: 2/Aqueous

RB-021103	TB-021103

16/Solid

FTA-SU-101-1617	WOD-SS-105	WOD-SS-109
WOD-SS-110	WOD-SS-111	WOD-SS-112
WOD-SS-113	WOD-SS-114	WOD-SU-105-0507
WOD-SU-109-0608	WOD-SU-110-0204	WOD-SU-111-0507
WOD-SU-112-0204	WOD-SU-113-0406	WOD-SU-114-0406
WOD-SS-DUP05		

OVERVIEW

The sample set for CTO 848, SDG B0257, NASA Wallops Island consists of sixteen (16) solid environmental samples, one (1) rinsate blank, and one (1) trip blank. All samples were analyzed for Target Compound List (TCL) volatile organic compounds. The environmental samples and the rinsate blank were also analyzed for TCL semivolatile organic compounds and TCL PCBs. One field duplicate pair was included in the SDG: WOD-SS-109 and WOD-SS-DUP05.

The samples were collected by TetraTech NUS on February 11th, 2003 and were analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed with the exception of those results that were rejected. The findings offered in this report are based upon a general review of all available data including: data completeness, system performance and tuning, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, internal standard recoveries, blank spike results, field duplicate results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- The relative percent difference (RPD) between columns exceeded 100% for the following PCB. The positive result was qualified as rejected, R.

Sample	Compound	%D
WOD-SU-111-0507	Aroclor-1245	101.6%

Minor Problems

- The aqueous volatile initial calibration contained a percent relative standard deviation (%RSD) that exceeded the 30% quality control limit for acetone. The positive results for acetone in samples RB-021103 and TB-021103 were qualified as estimated, J. The direction of bias cannot be determined.

- The aqueous volatile continuing calibration percent difference (%D) exceeded the 25% quality control limit for acetone. Positive results were qualified as estimated, J, in samples RB-021103 and TB-021103. The direction of bias cannot be determined.

- The volatile fraction internal standard recovery of 1,4-dichlorobenzene-d4 fell below the lower quality control limit in samples WOD-SS-110, WOD-SS-112, WOD-SS-105, FTA-SU-101-1617, WOD-SU-114-0406, and WOD-SS-114. Sample WOD-SS-110 was re-analyzed due to surrogate noncompliance; however, yielded similar results. The original analyses were used for data validation purposes. Nondetected and positive results associated with the internal standard were qualified as estimated, J, and, UJ, in the aforementioned samples.

- The volatile fraction internal standard recoveries of fluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4 fell below the lower quality control limit in sample WOD-SU-111-0507. Sample WOD-SU-11-0507 was re-analyzed due to surrogate noncompliance. The original analysis was used for data validation purposes. Nondetected and positive results associated with the internal standards were qualified as estimated, J, and, UJ, in the sample WOD-SU-111-0507.

- The following compounds were detected in the laboratory method blanks or field quality control blanks (*):

Compound	Maximum Concentration	Blank Action Level
Acetone*	7 µg/L	70 µg/Kg
Methylene chloride*	28 µg/L	280 µg/Kg
2-Hexanone	3 µg/Kg	15 µg/Kg

  Sample aliquot, percent solids, and dilution factor were taken into consideration when applying the blank action limit. Positive results for acetone, methylene chloride, and 2-hexanone below the blank action level were qualified as, B. Field quality control blanks were not qualified based on contamination in other field quality control blanks.

- The volatile surrogate recovery of 1,2-dichloroethane-d4 exceeded the quality control limit in samples WOD-SU-105-0507, WOD-DUP05, WOD-SS-110, and WOD-SS-111. The re-analyses yielded similar results indicating matrix interference. The original analyses were used for data validation purposes. Positive results were qualified as estimated, J, in the aforementioned samples. The direction of bias is high.

- The volatile surrogate recoveries of dibromofluoromethane, 1,2-dichloroethane-d4, and toluene-d8 exceeded the quality control limit in sample WOD-SU-111-0507. The re-analysis yielded four noncompliant recoveries. Therefore, the original analysis was used for data validation. Positive results were qualified as estimated, J, in sample WOD-SU-111-0507. The direction of bias is high.

- The semivolatile initial calibration on 3/13/03 contained a %RSD that exceeded the 35% (and > 50%) quality control limit for 4-chloroaniline. Positive and nondetected results for the aforementioned compound were qualified as estimated, J, and, UJ, respectively, in the associated samples. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 2/19/03 at 1431 contained a %D that exceeded the 25% (and > 50%) quality control limit for hexachlorocyclopentadiene. Positive and nondetected results for the aforementioned compound were qualified as estimated, J, and, UJ, respectively, in the associated samples. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/10/03 at 1605 contained %Ds that exceeded the 25% (and > 50%) quality control limit for 4-nitroaniline and benzaldehyde. Positive and nondetected results for the aforementioned compound were qualified as estimated, J, and, UJ, respectively, in the associated samples. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/10/03 at 01:01 contained a %D that exceeded the 25% quality control limit for benzaldehyde. Positive result was qualified as estimated, J, in sample WOD-SU-111-0507.

- The semivolatile continuing calibration on 3/14/03 at 0228 contained a %D that exceeded the 25% quality control limit for benzaldehyde. Positive results for the aforementioned compound were qualified as estimated, J, in the associated samples. The direction of bias cannot be determined.

- The semivolatile fraction internal standard recoveries of perylene-d12 fell below the lower quality control limit for samples WOD-SS-105 and WOD-SU-111-0507. The original analyses were used for data validation purposes. Nondetected and positive results associated with the internal standard were qualified as estimated, J, and, UJ, in the aforementioned samples.

- The semivolatile matrix spike and matrix spike duplicate %Rs fell below the lower quality control limit for 2-methylnaphthalene, 2-nitroaniline, acenaphthylene, 4-bromophenyl-phenyl ether, hexachlorobenzene, phenanthrene, anthracene, di-n-butyl phthalate, di-n-octyl phthalate, benzo(b)fluoranthene, and benzo(a)pyrene. The positive and nondetected results for the aforementioned compounds were qualified as estimated, J, and, UJ, respectively, in the unspiked sample, WOD-SU-113-0406.

- Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit. The direction of bias cannot be determined.

Notes

The aqueous volatile continuing calibration contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for dichlorodifluoromethane and 1,2-dibromo-3-chloropropane. Therefore, nondetected sample results were not qualified on this basis.

The volatile matrix spike and/or matrix spike duplicate percent recoveries (%Rs) exceeded the upper quality control limit for 2-hexanone and 4-methyl-2-pentanone. No qualification action was taken because the spike recovery was high and the compounds were not detected in the unspiked sample, WOD-SU-113-0406.

The semivolatile initial calibration on 2/14/03 contained a %RSD that exceeded the 30% quality control limit, but did not exceed 50%, for 2,4-dinitrophenol. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile initial calibration on 3/09/03 contained a %RSD that exceeded the 30% quality control limit, but did not exceed 50%, for hexachlorocyclopentadiene. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile initial calibration on 3/13/03 contained %RSDs that exceeded the 30% quality control limit, but did not exceed 50%, for hexachlorocyclopentadiene, 2,4-dinitrophenol, and atrazine. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 2/19/03 at 1431 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 2,4-dinitrophenol and 4-nitrophenol. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/10/03 at 0101 contained a %D that exceeded the 25% quality control limit, but did not exceed 50%, for 4-nitroaniline. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/10/03 at 1605 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for benzaldehyde and 4-nitrophenol. Therefore, nondetected sample results were not qualified on this basis.

In the semivolatile fraction, the linear calibration range of the instrument was exceeded by fluoranthene, phenanthrene, and pyrene in sample WOD-SU-101-1617. The results for the aforementioned compounds were transposed over from the 50X-dilution analysis to the 20X-dilution analysis. The remaining compounds were reported from the 20X-dilution analysis. Thus causing elevated reporting limits for the nondetected results.

The PCBs continuing calibration on 2/25/03 at 2006 contained %Ds that exceeded the 15% quality control criteria for Aroclor-1016 on column RTXCLPPEST 2. No qualification action was warranted since the other column was compliant.

The PCBs solid analysis surrogate recovery of decachlorobiphenyl exceeded the upper control limit for sample WOD-SU-101-1617 on column RTXCLPPEST 2. No qualification action was warranted because the other column was compliant.

The laboratory truncated the beginning parts of the sample IDs.

Sample WOD-SS-DUP05 was recorded incorrectly on the chain of custody (COC) as WOD-SU-DUP05. The sample ID was corrected in the electronic database.

The laboratory incorrectly identified several sample IDs by labeling sections of the sample ID as "SV" when it should have been "SU". The sample IDs were corrected in the electronic database.

There were differences between what was reported by the laboratory and what was requested in the statement of work (SOW). No action was taken because the project office was contacted and they approved the variance from the SOW.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several compounds failed to meet the initial and/or continuing calibration criteria in the volatile, semivolatile, and PCBs fractions. Laboratory method and field blank contamination occurred in the volatile fraction. Surrogate recoveries quality control limits were not met in the volatile fraction. Internal standard recovery criteria were not met. One PCB compound exceeded the 100% RPD between columns criteria in the PCB fraction.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", (September 1994) as amended for use within USEPA Region III, and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Seth C. Staffen
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

TENTATIVELY IDENTIFIED COMPOUNDS

Volatile

unknowns
branched Alkane
benzene, 1-ethyl-2-methyl
benzene, 1-ethyl-4-methyl
benzene, 1,2,3-trimethyl
benzene, 1-ethenyl-4-methyl
naphthalene
hexanal
naphthalene, 2-methyl
naphthalene, 1-methyl
cyclotetrasiloxane, Octameth
naphthalene, 2,6-dimethyl
alpha-pinene
camphene
beta-pinene
1,3-cyclohexadiene, 1-methyl
limonene
1,4-cyclohexadiene, 1-methyl
cyclohexane, 1-methyl-4-
1-isopropyl-2-methoxy-4-methyl
alpha-cubebene
cyclohexane, 6-ethenyl-6-meth
alpha-amorphene
naphthalene, 1,2,3,5,6,8A-HE
naphthalene, 1,2,3,4-tetrahy
naphthalene, 1,2,4A,5,6,8A-H

Semivolatile

9H-Fluoren-9-one
Dibenzothiophene
Anthracene, 2-methyl
Unknown
Anthracene, 1-methyl
2-Phenylnaphthalene
9,10-Anthracenedione
cyclo(DEF)phenanthrenon
pyrene, 1-methyl
7H-benz[de}anthracen-7-one
Pheneanthrene, 4-methyl
Perylene
P,P'-DDE
Cyclopentane, 1-ethyl-2-meth
1,3-benzodioxole, 5-(2-prope)
Octadecanoic acid, butyl est
Ergost-7-en-3-ol
Stigmast-4-en-3-one
G-sitosterol
Testosterone
D-friedoolean-14-ene, 3-meth
1-Dodecanol
O,P'-DDE
1,1-dichloro-2,2-bis(p-chloro)
alpha-pinene
naphthalene, 1,2,4,4A,5,6

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0257 MEDIA: WATER DATA FRACTION:

nsample	RB-021103
samp_date	2/11/2003
lab_id	B0257-18A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	110	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	RB-021103
samp_date	2/11/2003
lab_id	B0257-18A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	26		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-021103
samp_date	2/11/2003
lab_id	B0257-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	7	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: WATER DATA FRACTION:

nsample	TB-021103
samp_date	2/11/2003
lab_id	B0257-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	28		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06B
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	9	J	P
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	UJ	N
1,2,4-TRIMETHYLBENZENE	20		
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	N
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	UJ	N
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	8	J	P
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	UJ	N
2-BUTANONE	7	J	P
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	33	B	B
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06B
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	10	J	P
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	9	J	P
ISOPROPYLBENZENE	1	J	P
M+P-XYLENES	19		
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	2	J	P
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	8	J	P
STYRENE	11	U	
TETRACHLOROETHENE	50		
TOLUENE	62		
TOTAL XYLENES	27		
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04C
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	16	B	B
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04C
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02C
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	3	B	A
4-METHYL-2-PENTANONE	10	U	
ACETONE	25	B	B
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02C
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09C
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	UJ	R
1,1,2,2-TETRACHLOROETHANE	12	UJ	R
1,1,2-TRICHLOROETHANE	12	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	12	UJ	R
1,1-DICHLOROETHANE	12	UJ	R
1,1-DICHLOROETHENE	12	UJ	R
1,2,4-TRICHLOROBENZENE	12	UJ	NR
1,2,4-TRIMETHYLBENZENE	12	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	NR
1,2-DIBROMOETHANE	12	UJ	R
1,2-DICHLOROBENZENE	12	UJ	NR
1,2-DICHLOROETHANE	12	UJ	R
1,2-DICHLOROPROPANE	12	UJ	R
1,3,5-TRIMETHYLBENZENE	12	UJ	R
1,3-DICHLOROBENZENE	12	UJ	R
1,4-DICHLOROBENZENE	12	UJ	NR
2-BUTANONE	12	UJ	R
2-HEXANONE	12	UJ	R
4-METHYL-2-PENTANONE	12	UJ	R
ACETONE	66	B	B
BENZENE	12	UJ	R
BROMODICHLOROMETHANE	12	UJ	R
BROMOFORM	12	UJ	R
BROMOMETHANE	12	UJ	R
CARBON DISULFIDE	12	UJ	R
CARBON TETRACHLORIDE	12	UJ	R
CHLOROBENZENE	12	UJ	R
CHLORODIBROMOMETHANE	12	UJ	R
CHLOROETHANE	12	UJ	R
CHLOROFORM	12	UJ	R

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09C
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	UJ	R
CIS-1,2-DICHLOROETHENE	12	UJ	R
CIS-1,3-DICHLOROPROPENE	12	UJ	R
CYCLOHEXANE	12	UJ	R
DICHLORODIFLUOROMETHANE	12	UJ	R
ETHYLBENZENE	12	UJ	R
ISOPROPYLBENZENE	12	UJ	R
M+P-XYLENES	12	UJ	R
METHYL ACETATE	5	J	PR
METHYL CYCLOHEXANE	12	UJ	R
METHYL TERT-BUTYL ETHER	12	UJ	R
METHYLENE CHLORIDE	4	B	B
O-XYLENE	12	UJ	R
STYRENE	12	UJ	R
TETRACHLOROETHENE	12	UJ	R
TOLUENE	12	UJ	R
TOTAL XYLENES	12	UJ	R
TRANS-1,2-DICHLOROETHENE	12	UJ	R
TRANS-1,3-DICHLOROPROPENE	12	UJ	R
TRICHLOROETHENE	12	UJ	R
TRICHLOROFLUOROMETHANE	12	UJ	R
VINYL CHLORIDE	12	UJ	R

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	UJ	R
1,1,2,2-TETRACHLOROETHANE	11	UJ	R
1,1,2-TRICHLOROETHANE	11	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	11	UJ	R
1,1-DICHLOROETHANE	11	UJ	R
1,1-DICHLOROETHENE	11	UJ	R
1,2,4-TRICHLOROBENZENE	11	UJ	NR
1,2,4-TRIMETHYLBENZENE	11	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	NR
1,2-DIBROMOETHANE	11	UJ	R
1,2-DICHLOROBENZENE	11	UJ	NR
1,2-DICHLOROETHANE	11	UJ	R
1,2-DICHLOROPROPANE	11	UJ	R
1,3,5-TRIMETHYLBENZENE	11	UJ	R
1,3-DICHLOROBENZENE	11	UJ	R
1,4-DICHLOROBENZENE	11	UJ	NR
2-BUTANONE	11	UJ	R
2-HEXANONE	11	UJ	R
4-METHYL-2-PENTANONE	11	UJ	R
ACETONE	47	B	B
BENZENE	11	UJ	R
BROMODICHLOROMETHANE	11	UJ	R
BROMOFORM	11	UJ	R
BROMOMETHANE	11	UJ	R
CARBON DISULFIDE	11	UJ	R
CARBON TETRACHLORIDE	11	UJ	R
CHLOROBENZENE	11	UJ	R
CHLORODIBROMOMETHANE	11	UJ	R
CHLOROETHANE	11	UJ	R
CHLOROFORM	11	UJ	R

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	UJ	R
CIS-1,2-DICHLOROETHENE	11	UJ	R
CIS-1,3-DICHLOROPROPENE	11	UJ	R
CYCLOHEXANE	11	UJ	R
DICHLORODIFLUOROMETHANE	11	UJ	R
ETHYLBENZENE	11	UJ	R
ISOPROPYLBENZENE	11	UJ	R
M+P-XYLENES	11	UJ	R
METHYL ACETATE	3	J	PR
METHYL CYCLOHEXANE	11	UJ	R
METHYL TERT-BUTYL ETHER	11	UJ	R
METHYLENE CHLORIDE	5	B	B
O-XYLENE	11	UJ	R
STYRENE	11	UJ	R
TETRACHLOROETHENE	11	UJ	R
TOLUENE	11	UJ	R
TOTAL XYLENES	11	UJ	R
TRANS-1,2-DICHLOROETHENE	11	UJ	R
TRANS-1,3-DICHLOROPROPENE	11	UJ	R
TRICHLOROETHENE	11	UJ	R
TRICHLOROFLUOROMETHANE	11	UJ	R
VINYL CHLORIDE	11	UJ	R

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12C
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	20	B	B
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12C
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	3	J	P
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	39	B	B
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	8	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16C
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	15	B	B
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16C
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	UJ	R
1,1,2,2-TETRACHLOROETHANE	11	UJ	R
1,1,2-TRICHLOROETHANE	11	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	11	UJ	R
1,1-DICHLOROETHANE	11	UJ	R
1,1-DICHLOROETHENE	11	UJ	R
1,2,4-TRICHLOROBENZENE	11	UJ	R
1,2,4-TRIMETHYLBENZENE	11	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	R
1,2-DIBROMOETHANE	11	UJ	R
1,2-DICHLOROBENZENE	11	UJ	R
1,2-DICHLOROETHANE	11	UJ	R
1,2-DICHLOROPROPANE	11	UJ	R
1,3,5-TRIMETHYLBENZENE	11	UJ	R
1,3-DICHLOROBENZENE	11	UJ	R
1,4-DICHLOROBENZENE	11	UJ	R
2-BUTANONE	11	UJ	R
2-HEXANONE	11	UJ	R
4-METHYL-2-PENTANONE	11	UJ	R
ACETONE	41	B	B
BENZENE	11	UJ	R
BROMODICHLOROMETHANE	11	UJ	R
BROMOFORM	11	UJ	R
BROMOMETHANE	11	UJ	R
CARBON DISULFIDE	11	UJ	R
CARBON TETRACHLORIDE	11	UJ	R
CHLOROBENZENE	11	UJ	R
CHLORODIBROMOMETHANE	11	UJ	R
CHLOROETHANE	11	UJ	R
CHLOROFORM	11	UJ	R

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	UJ	R
CIS-1,2-DICHLOROETHENE	11	UJ	R
CIS-1,3-DICHLOROPROPENE	11	UJ	R
CYCLOHEXANE	11	UJ	R
DICHLORODIFLUOROMETHANE	11	UJ	R
ETHYLBENZENE	11	UJ	R
ISOPROPYLBENZENE	11	UJ	R
M+P-XYLENES	11	UJ	R
METHYL ACETATE	4	J	PR
METHYL CYCLOHEXANE	11	UJ	R
METHYL TERT-BUTYL ETHER	11	UJ	R
METHYLENE CHLORIDE	4	B	B
O-XYLENE	11	UJ	R
STYRENE	11	UJ	R
TETRACHLOROETHENE	11	UJ	R
TOLUENE	11	UJ	R
TOTAL XYLENES	11	UJ	R
TRANS-1,2-DICHLOROETHENE	11	UJ	R
TRANS-1,3-DICHLOROPROPENE	11	UJ	R
TRICHLOROETHENE	11	UJ	R
TRICHLOROFLUOROMETHANE	11	UJ	R
VINYL CHLORIDE	11	UJ	R

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	UJ	R
1,1,2,2-TETRACHLOROETHANE	10	UJ	R
1,1,2-TRICHLOROETHANE	10	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	10	UJ	R
1,1-DICHLOROETHANE	10	UJ	R
1,1-DICHLOROETHENE	10	UJ	R
1,2,4-TRICHLOROBENZENE	10	UJ	R
1,2,4-TRIMETHYLBENZENE	10	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	R
1,2-DIBROMOETHANE	10	UJ	R
1,2-DICHLOROBENZENE	10	UJ	R
1,2-DICHLOROETHANE	10	UJ	R
1,2-DICHLOROPROPANE	10	UJ	R
1,3,5-TRIMETHYLBENZENE	10	UJ	R
1,3-DICHLOROBENZENE	10	UJ	R
1,4-DICHLOROBENZENE	10	UJ	R
2-BUTANONE	10	UJ	R
2-HEXANONE	10	UJ	R
4-METHYL-2-PENTANONE	10	UJ	R
ACETONE	8	B	B
BENZENE	10	UJ	R
BROMODICHLOROMETHANE	10	UJ	R
BROMOFORM	10	UJ	R
BROMOMETHANE	10	UJ	R
CARBON DISULFIDE	10	UJ	R
CARBON TETRACHLORIDE	10	UJ	R
CHLOROBENZENE	10	UJ	R
CHLORODIBROMOMETHANE	10	UJ	R
CHLOROETHANE	10	UJ	R
CHLOROFORM	10	UJ	R

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	UJ	R
CIS-1,2-DICHLOROETHENE	10	UJ	R
CIS-1,3-DICHLOROPROPENE	10	UJ	R
CYCLOHEXANE	10	UJ	R
DICHLORODIFLUOROMETHANE	10	UJ	R
ETHYLBENZENE	10	UJ	R
ISOPROPYLBENZENE	10	UJ	R
M+P-XYLENES	10	UJ	R
METHYL ACETATE	10	UJ	R
METHYL CYCLOHEXANE	10	UJ	R
METHYL TERT-BUTYL ETHER	10	UJ	R
METHYLENE CHLORIDE	2	B	B
O-XYLENE	10	UJ	R
STYRENE	10	UJ	R
TETRACHLOROETHENE	10	UJ	R
TOLUENE	10	UJ	R
TOTAL XYLENES	10	UJ	R
TRANS-1,2-DICHLOROETHENE	10	UJ	R
TRANS-1,3-DICHLOROPROPENE	10	UJ	R
TRICHLOROETHENE	10	UJ	R
TRICHLOROFLUOROMETHANE	10	UJ	R
VINYL CHLORIDE	10	UJ	R

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	13	U	
1,1,2,2-TETRACHLOROETHANE	13	U	
1,1,2-TRICHLOROETHANE	13	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	13	U	
1,1-DICHLOROETHANE	13	U	
1,1-DICHLOROETHENE	13	U	
1,2,4-TRICHLOROBENZENE	13	U	
1,2,4-TRIMETHYLBENZENE	13	U	
1,2-DIBROMO-3-CHLOROPROPANE	13	U	
1,2-DIBROMOETHANE	13	U	
1,2-DICHLOROBENZENE	13	U	
1,2-DICHLOROETHANE	13	U	
1,2-DICHLOROPROPANE	13	U	
1,3,5-TRIMETHYLBENZENE	13	U	
1,3-DICHLOROBENZENE	13	U	
1,4-DICHLOROBENZENE	13	U	
2-BUTANONE	13	U	
2-HEXANONE	13	U	
4-METHYL-2-PENTANONE	13	U	
ACETONE	11	B	B
BENZENE	13	U	
BROMODICHLOROMETHANE	13	U	
BROMOFORM	13	U	
BROMOMETHANE	13	U	
CARBON DISULFIDE	13	U	
CARBON TETRACHLORIDE	13	U	
CHLOROBENZENE	13	U	
CHLORODIBROMOMETHANE	13	U	
CHLOROETHANE	13	U	
CHLOROFORM	13	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	13	U	
CIS-1,2-DICHLOROETHENE	13	U	
CIS-1,3-DICHLOROPROPENE	13	U	
CYCLOHEXANE	13	U	
DICHLORODIFLUOROMETHANE	13	U	
ETHYLBENZENE	13	U	
ISOPROPYLBENZENE	13	U	
M+P-XYLENES	13	U	
METHYL ACETATE	13	U	
METHYL CYCLOHEXANE	13	U	
METHYL TERT-BUTYL ETHER	13	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	13	U	
STYRENE	13	U	
TETRACHLOROETHENE	13	U	
TOLUENE	13	U	
TOTAL XYLENES	13	U	
TRANS-1,2-DICHLOROETHENE	13	U	
TRANS-1,3-DICHLOROPROPENE	13	U	
TRICHLOROETHENE	13	U	
TRICHLOROFLUOROMETHANE	13	U	
VINYL CHLORIDE	13	U	

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08B
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	17	B	B
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08B
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	2	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-111-0507	nsample	WOD-SU-111-0507	nsample	WOD-SU-112-0204
samp_date	2/11/2003	samp_date	2/11/2003	samp_date	2/11/2003
lab_id	B0257-11B	lab_id	B0257-11B	lab_id	B0257-13B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	81	Pct_Solids	81	Pct_Solids	93
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	UJ	N
1,1,2,2-TETRACHLOROETHANE	14	UJ	N
1,1,2-TRICHLOROETHANE	14	UJ	N
1,1,2-TRICHLOROTRIFLUOROETHANE	14	UJ	N
1,1-DICHLOROETHANE	14	UJ	N
1,1-DICHLOROETHENE	14	UJ	N
1,2,4-TRICHLOROBENZENE	14	UJ	N
1,2,4-TRIMETHYLBENZENE	4	J	NPR
1,2-DIBROMO-3-CHLOROPROPANE	14	UJ	N
1,2-DIBROMOETHANE	14	UJ	N
1,2-DICHLOROBENZENE	14	UJ	N
1,2-DICHLOROETHANE	14	UJ	N
1,2-DICHLOROPROPANE	14	UJ	N
1,3,5-TRIMETHYLBENZENE	14	UJ	N
1,3-DICHLOROBENZENE	14	UJ	N
1,4-DICHLOROBENZENE	14	UJ	N
2-BUTANONE	25	J	NR
2-HEXANONE	14	UJ	N
4-METHYL-2-PENTANONE	14	UJ	N
ACETONE	140	J	B
BENZENE	42	J	N
BROMODICHLOROMETHANE	14	UJ	N
BROMOFORM	14	UJ	N
BROMOMETHANE	14	UJ	N
CARBON DISULFIDE	4	J	NPR
CARBON TETRACHLORIDE	14	UJ	N
CHLOROBENZENE	14	UJ	N
CHLORODIBROMOMETHANE	14	UJ	N
CHLOROETHANE	14	UJ	N
CHLOROFORM	14	UJ	N

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	UJ	N
CIS-1,2-DICHLOROETHENE	14	UJ	N
CIS-1,3-DICHLOROPROPENE	14	UJ	N
CYCLOHEXANE	14	UJ	N
DICHLORODIFLUOROMETHANE	14	UJ	N
ETHYLBENZENE	2	J	NPR
ISOPROPYLBENZENE	14	UJ	N
M+P-XYLENES	4	J	NPR
METHYL ACETATE	14	UJ	N
METHYL CYCLOHEXANE	14	UJ	N
METHYL TERT-BUTYL ETHER	14	UJ	N
METHYLENE CHLORIDE	11	B	B
O-XYLENE	1	J	NPR
STYRENE	14	UJ	N
TETRACHLOROETHENE	14	UJ	N
TOLUENE	10	J	NP
TOTAL XYLENES	5	J	NPR
TRANS-1,2-DICHLOROETHENE	14	UJ	N
TRANS-1,3-DICHLOROPROPENE	14	UJ	N
TRICHLOROETHENE	14	UJ	N
TRICHLOROFLUOROMETHANE	14	UJ	N
VINYL CHLORIDE	14	UJ	N

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	68	B	B
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-112-0204
samp_date	2/11/2003
lab_id	B0257-13B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	10	B	B
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	7	B	B
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	7	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	UJ	N
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	N
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	UJ	N
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	UJ	N
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	13	B	B
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	7	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: WATER DATA FRACTION:

nsample	RB-021103
samp_date	2/11/2003
lab_id	B0257-18D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	RB-021103
samp_date	2/11/2003
lab_id	B0257-18D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	C
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	37000	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	37000	U	
2,4,5-TRICHLOROPHENOL	93000	U	
2,4,6-TRICHLOROPHENOL	37000	U	
2,4-DICHLOROPHENOL	37000	U	
2,4-DIMETHYLPHENOL	37000	U	
2,4-DINITROPHENOL	93000	U	
2,4-DINITROTOLUENE	37000	U	
2,6-DINITROTOLUENE	37000	U	
2-CHLORONAPHTHALENE	37000	U	
2-CHLOROPHENOL	37000	U	
2-METHYLNAPHTHALENE	37000	U	
2-METHYLPHENOL	37000	U	
2-NITROANILINE	93000	U	
2-NITROPHENOL	37000	U	
3,3'-DICHLOROBENZIDINE	37000	U	
3-NITROANILINE	93000	U	
4,6-DINITRO-2-METHYLPHENOL	93000	U	
4-BROMOPHENYL PHENYL ETHER	37000	U	
4-CHLORO-3-METHYLPHENOL	37000	U	
4-CHLOROANILINE	37000	UJ	C
4-CHLOROPHENYL PHENYL ETHER	37000	U	
4-METHYLPHENOL	37000	U	
4-NITROANILINE	93000	U	
4-NITROPHENOL	93000	U	
ACENAPHTHENE	25000	J	P
ACENAPHTHYLENE	37000	U	
ACETOPHENONE	37000	U	
ANTHRACENE	160000		
ATRAZINE	37000	U	

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	37000	U	
BENZO(A)ANTHRACENE	230000		
BENZO(A)PYRENE	140000		
BENZO(B)FLUORANTHENE	300000		
BENZO(G,H,I)PERYLENE	32000	J	P
BENZO(K)FLUORANTHENE	110000		
BIS(2-CHLOROETHOXY)METHANE	37000	U	
BIS(2-CHLOROETHYL)ETHER	37000	U	
BIS(2-ETHYLHEXYL)PHTHALATE	37000	U	
BUTYL BENZYL PHTHALATE	37000	U	
CAPROLACTAM	37000	U	
CARBAZOLE	68000		
CHRYSENE	240000		
DIBENZO(A,H)ANTHRACENE	13000	J	P
DIBENZOFURAN	38000		
DIETHYL PHTHALATE	37000	U	
DIMETHYL PHTHALATE	37000	U	
DI-N-BUTYL PHTHALATE	37000	U	
DI-N-OCTYL PHTHALATE	37000	U	
FLUORANTHENE	680000		
FLUORENE	11000	J	P
HEXACHLOROBENZENE	37000	U	
HEXACHLOROBUTADIENE	37000	U	
HEXACHLOROCYCLOPENTADIENE	37000	U	
HEXACHLOROETHANE	37000	U	
INDENO(1,2,3-CD)PYRENE	36000	J	P
ISOPHORONE	37000	U	
NAPHTHALENE	37000	U	
NITROBENZENE	37000	U	
N-NITROSO-DI-N-PROPYLAMINE	37000	U	

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	37000	U	
PENTACHLOROPHENOL	93000	U	
PHENANTHRENE	230000		
PHENOL	37000	U	
PYRENE	540000		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	970	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	970	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	970	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	970	U	
4,6-DINITRO-2-METHYLPHENOL	970	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	970	U	
4-NITROPHENOL	970	U	
ACENAPHTHENE	380	U	
ACENAPHTHYLENE	380	U	
ACETOPHENONE	380	U	
ANTHRACENE	380	U	
ATRAZINE	380	U	

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	380	U	
BENZO(A)ANTHRACENE	51	J	P
BENZO(A)PYRENE	80	J	NP
BENZO(B)FLUORANTHENE	150	J	NP
BENZO(G,H,I)PERYLENE	380	UJ	N
BENZO(K)FLUORANTHENE	61	J	NP
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	43	J	P
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	79	J	P
DIBENZO(A,H)ANTHRACENE	380	UJ	N
DIBENZOFURAN	380	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	UJ	N
FLUORANTHENE	55	J	P
FLUORENE	380	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	380	UJ	N
ISOPHORONE	380	U	
NAPHTHALENE	380	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	970	U	
PHENANTHRENE	380	U	
PHENOL	380	U	
PYRENE	66	J	P

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	910	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	910	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	910	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	910	U	
4,6-DINITRO-2-METHYLPHENOL	910	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	UJ	C
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	910	U	
4-NITROPHENOL	910	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	910	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	UJ	C
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	890	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	890	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	890	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	890	U	
4,6-DINITRO-2-METHYLPHENOL	890	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	UJ	C
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	890	U	
4-NITROPHENOL	890	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	890	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	940	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	940	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	940	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	940	U	
4,6-DINITRO-2-METHYLPHENOL	940	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	UJ	C
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	940	U	
4-NITROPHENOL	940	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	56	J	CP
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	940	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	UJ	C
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	UJ	C
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	46	J	CP
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	920	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	920	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	920	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	920	U	
4,6-DINITRO-2-METHYLPHENOL	920	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	UJ	C
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	920	U	
4-NITROPHENOL	920	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	68	J	CP
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	920	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	UJ	C
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	UJ	C
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	UJ	C
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-111-0507
samp_date	2/11/2003
lab_id	B0257-11A
qc_type	NM
units	UG/KG
Pct_Solids	81
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	400	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	400	U	
2,4,5-TRICHLOROPHENOL	1000	U	
2,4,6-TRICHLOROPHENOL	400	U	
2,4-DICHLOROPHENOL	400	U	
2,4-DIMETHYLPHENOL	400	U	
2,4-DINITROPHENOL	1000	U	
2,4-DINITROTOLUENE	400	U	
2,6-DINITROTOLUENE	400	U	
2-CHLORONAPHTHALENE	400	U	
2-CHLOROPHENOL	400	U	
2-METHYLNAPHTHALENE	400	U	
2-METHYLPHENOL	400	U	
2-NITROANILINE	1000	U	
2-NITROPHENOL	400	U	
3,3'-DICHLOROBENZIDINE	400	U	
3-NITROANILINE	1000	U	
4,6-DINITRO-2-METHYLPHENOL	1000	U	
4-BROMOPHENYL PHENYL ETHER	400	U	
4-CHLORO-3-METHYLPHENOL	400	U	
4-CHLOROANILINE	400	U	
4-CHLOROPHENYL PHENYL ETHER	400	U	
4-METHYLPHENOL	400	U	
4-NITROANILINE	1000	U	
4-NITROPHENOL	1000	U	
ACENAPHTHENE	400	U	
ACENAPHTHYLENE	400	U	
ACETOPHENONE	400	U	
ANTHRACENE	400	U	
ATRAZINE	400	U	

nsample	WOD-SU-111-0507
samp_date	2/11/2003
lab_id	B0257-11A
qc_type	NM
units	UG/KG
Pct_Solids	81
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	45	J	CP
BENZO(A)ANTHRACENE	45	J	P
BENZO(A)PYRENE	55	J	P
BENZO(B)FLUORANTHENE	88	J	P
BENZO(G,H,I)PERYLENE	400	U	
BENZO(K)FLUORANTHENE	400	U	
BIS(2-CHLOROETHOXY)METHANE	400	U	
BIS(2-CHLOROETHYL)ETHER	400	U	
BIS(2-ETHYLHEXYL)PHTHALATE	78	J	P
BUTYL BENZYL PHTHALATE	400	U	
CAPROLACTAM	400	U	
CARBAZOLE	400	U	
CHRYSENE	73	J	P
DIBENZO(A,H)ANTHRACENE	400	U	
DIBENZOFURAN	400	U	
DIETHYL PHTHALATE	400	U	
DIMETHYL PHTHALATE	400	U	
DI-N-BUTYL PHTHALATE	400	U	
DI-N-OCTYL PHTHALATE	400	U	
FLUORANTHENE	45	J	P
FLUORENE	400	U	
HEXACHLOROBENZENE	400	U	
HEXACHLOROBUTADIENE	400	U	
HEXACHLOROCYCLOPENTADIENE	400	U	
HEXACHLOROETHANE	400	U	
INDENO(1,2,3-CD)PYRENE	400	U	
ISOPHORONE	400	U	
NAPHTHALENE	400	U	
NITROBENZENE	400	U	
N-NITROSO-DI-N-PROPYLAMINE	400	U	

nsample	WOD-SU-111-0507
samp_date	2/11/2003
lab_id	B0257-11A
qc_type	NM
units	UG/KG
Pct_Solids	81
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	400	U	
PENTACHLOROPHENOL	1000	U	
PHENANTHRENE	400	U	
PHENOL	400	U	
PYRENE	93	J	P

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-112-0204
samp_date	2/11/2003
lab_id	B0257-13A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	340	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	340	U	
2,4,5-TRICHLOROPHENOL	870	U	
2,4,6-TRICHLOROPHENOL	340	U	
2,4-DICHLOROPHENOL	340	U	
2,4-DIMETHYLPHENOL	340	U	
2,4-DINITROPHENOL	870	U	
2,4-DINITROTOLUENE	340	U	
2,6-DINITROTOLUENE	340	U	
2-CHLORONAPHTHALENE	340	U	
2-CHLOROPHENOL	340	U	
2-METHYLNAPHTHALENE	340	U	
2-METHYLPHENOL	340	U	
2-NITROANILINE	870	U	
2-NITROPHENOL	340	U	
3,3'-DICHLOROBENZIDINE	340	U	
3-NITROANILINE	870	U	
4,6-DINITRO-2-METHYLPHENOL	870	U	
4-BROMOPHENYL PHENYL ETHER	340	U	
4-CHLORO-3-METHYLPHENOL	340	U	
4-CHLOROANILINE	340	U	
4-CHLOROPHENYL PHENYL ETHER	340	U	
4-METHYLPHENOL	340	U	
4-NITROANILINE	870	UJ	C
4-NITROPHENOL	870	U	
ACENAPHTHENE	340	U	
ACENAPHTHYLENE	340	U	
ACETOPHENONE	340	U	
ANTHRACENE	340	U	
ATRAZINE	340	U	

nsample	WOD-SU-112-0204
samp_date	2/11/2003
lab_id	B0257-13A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	340	UJ	C
BENZO(A)ANTHRACENE	340	U	
BENZO(A)PYRENE	340	U	
BENZO(B)FLUORANTHENE	340	U	
BENZO(G,H,I)PERYLENE	340	U	
BENZO(K)FLUORANTHENE	340	U	
BIS(2-CHLOROETHOXY)METHANE	340	U	
BIS(2-CHLOROETHYL)ETHER	340	U	
BIS(2-ETHYLHEXYL)PHTHALATE	340	U	
BUTYL BENZYL PHTHALATE	340	U	
CAPROLACTAM	340	U	
CARBAZOLE	340	U	
CHRYSENE	340	U	
DIBENZO(A,H)ANTHRACENE	340	U	
DIBENZOFURAN	340	U	
DIETHYL PHTHALATE	340	U	
DIMETHYL PHTHALATE	340	U	
DI-N-BUTYL PHTHALATE	340	U	
DI-N-OCTYL PHTHALATE	340	U	
FLUORANTHENE	340	U	
FLUORENE	340	U	
HEXACHLOROBENZENE	340	U	
HEXACHLOROBUTADIENE	340	U	
HEXACHLOROCYCLOPENTADIENE	340	U	
HEXACHLOROETHANE	340	U	
INDENO(1,2,3-CD)PYRENE	340	U	
ISOPHORONE	340	U	
NAPHTHALENE	340	U	
NITROBENZENE	340	U	
N-NITROSO-DI-N-PROPYLAMINE	340	U	

nsample	WOD-SU-112-0204
samp_date	2/11/2003
lab_id	B0257-13A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	340	U	
PENTACHLOROPHENOL	870	U	
PHENANTHRENE	340	U	
PHENOL	340	U	
PYRENE	340	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	UJ	D
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	UJ	D
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	UJ	D
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	UJ	C
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	UJ	D
ACETOPHENONE	350	U	
ANTHRACENE	350	UJ	D
ATRAZINE	350	U	

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	UJ	D
BENZO(B)FLUORANTHENE	350	UJ	D
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	UJ	D
DI-N-OCTYL PHTHALATE	350	UJ	D
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	UJ	D
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	UJ	D
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	910	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	910	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	910	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	910	U	
4,6-DINITRO-2-METHYLPHENOL	910	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	910	UJ	C
4-NITROPHENOL	910	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	910	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: WATER DATA FRACTION:

nsample	RB-021103
samp_date	2/11/2003
lab_id	B0257-18D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	FTA-SU-101-1617
samp_date	2/11/2003
lab_id	B0257-06A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

nsample	WOD-SS-105
samp_date	2/11/2003
lab_id	B0257-04A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

nsample	WOD-SS-109
samp_date	2/11/2003
lab_id	B0257-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-110
samp_date	2/11/2003
lab_id	B0257-09A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12A
qc_type	NM
units	UG/KG
Pct_Solids	88
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-113	nsample	WOD-SS-114	nsample	WOD-SS-DUP05
samp_date	2/11/2003	samp_date	2/11/2003	samp_date	2/11/2003
lab_id	B0257-14A	lab_id	B0257-16A	lab_id	B0257-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	91	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	WOD-SS-109

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-111-0507
samp_date	2/11/2003
lab_id	B0257-11A
qc_type	NM
units	UG/KG
Pct_Solids	81
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	150	R	U
AROCLOR-1260	40	U	

nsample	WOD-SU-112-0204
samp_date	2/11/2003
lab_id	B0257-13A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

nsample	WOD-SU-113-0406
samp_date	2/11/2003
lab_id	B0257-15A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5097

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	110	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	26	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5097

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5096

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	7	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	28	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5096

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3939

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 12 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	33	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	7	J
156-59-2	cis-1,2-Dichloroethene	10	J
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	9	J
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	62	
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	50	
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	9	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3939

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 12 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	19	
95-47-6	o-Xylene	8	J
1330-20-7	Xylene (Total)	27	
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	8	J
95-63-6	1,2,4-Trimethylbenzene	20	
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	2	J

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3939

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 12 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.71	6	J
2.		UNKNOWN	6.07	28	J
3.		BRANCHED ALKANE	7.26	12	J
4.		UNKNOWN	7.39	22	J
5.		UNKNOWN	11.06	8	J
6.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.24	23	NJ
7.	622-96-8	BENZENE, 1-ETHYL-4-METHYL-	11.58	11	NJ
8.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.30	15	NJ
9.	622-97-9	BENZENE, 1-ETHENYL-4-METHYL-	12.55	12	NJ
10.		UNKNOWN	12.66	9	J
11.		UNKNOWN	13.74	7	J
12.		UNKNOWN	14.19	14	J
13.		UNKNOWN	14.40	8	J
14.		UNKNOWN	14.62	8	J
15.		UNKNOWN	14.85	7	J
16.	91-20-3	NAPHTHALENE	14.97	62	NJB
17.		UNKNOWN	15.09	15	J
18.		UNKNOWN	15.45	12	J
19.		UNKNOWN	15.57	13	J
20.		UNKNOWN	15.78	8	J
21.		UNKNOWN	15.90	12	J
22.		UNKNOWN	16.01	17	J
23.		UNKNOWN	16.31	12	J
24.		UNKNOWN	16.50	10	J
25.		UNKNOWN	16.80	11	J
26.		UNKNOWN	17.38	15	J
27.		UNKNOWN	17.46	11	J
28.		UNKNOWN	17.66	11	J
29.		UNKNOWN	17.73	15	J
30.		UNKNOWN	17.86	12	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04C

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3937

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 15 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	16	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04C

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3937

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 15 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3935

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	25	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	JB
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3935

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02C

Sample wt/vol: 5.6 (g/mL) G Lab File ID: V5E3935

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	17	NJB
2.					
3.					
4.					
5.					
6.					
7.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3909

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	66	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3909

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3909

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	22	NJ
2.		UNKNOWN	11.07	6	J
3.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	7	NJ
4.		UNKNOWN	18.34	7	J
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09CRE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3941

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	51	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	20	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09CRE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3941

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	2	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-110RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09CRE

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3941

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	9	NJ
2.	90-12-0	NAPHTHALENE, 1-METHYL-	16.33	8	NJ
3.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	6	NJ
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3910

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	47	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3910

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	3	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E3910

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	16	NJ
2.		UNKNOWN	11.76	7	J
3.		UNKNOWN	12.38	8	J
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10CRE

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3942

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	20	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	9	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10CRE

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E3942

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12C

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3912

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 12 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12C

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3912

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 12 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	3	J
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3944

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	39	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	8	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14C

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3944

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16C

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3967

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 9 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16C

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3967

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 9 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3905

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	8	JB
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E3905

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05BRE

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3965

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	19	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	1	J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	2	J
100-41-4	Ethylbenzene	2	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05BRE

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3965

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	6	J
95-47-6	o-Xylene	2	J
1330-20-7	Xylene (Total)	8	J
100-42-5	Styrene	2	J
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	6	J
95-63-6	1,2,4-Trimethylbenzene	4	J
541-73-1	1,3-Dichlorobenzene	4	J
106-46-7	1,4-Dichlorobenzene	4	J
95-50-1	1,2-Dichlorobenzene	4	J
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1050507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05BRE

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3965

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.14	5	J
2.		UNKNOWN	11.74	5	J
3.	91-20-3	NAPHTHALENE	14.97	16	NJB
4.					
5.					
6.					
7.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E3936

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	13	U
74-87-3	Chloromethane	13	U
75-01-4	Vinyl Chloride	13	U
74-83-9	Bromomethane	13	U
75-00-3	Chloroethane	13	U
75-69-4	Trichlorofluoromethane	13	U
75-35-4	1,1-Dichloroethene	13	U
67-64-1	Acetone	11	J
75-15-0	Carbon Disulfide	13	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	13	U
1634-04-4	Methyl tert-butyl ether	13	U
75-34-3	1,1-Dichloroethane	13	U
78-93-3	2-Butanone	13	U
156-59-2	cis-1,2-Dichloroethene	13	U
67-66-3	Chloroform	13	U
71-55-6	1,1,1-Trichloroethane	13	U
56-23-5	Carbon Tetrachloride	13	U
107-06-2	1,2-Dichloroethane	13	U
71-43-2	Benzene	13	U
79-01-6	Trichloroethene	13	U
78-87-5	1,2-Dichloropropane	13	U
75-27-4	Bromodichloromethane	13	U
10061-01-5	cis-1,3-Dichloropropene	13	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	13	U
10061-02-6	trans-1,3-Dichloropropene	13	U
79-00-5	1,1,2-Trichloroethane	13	U
127-18-4	Tetrachloroethene	13	U
591-78-6	2-Hexanone	13	U
124-48-1	Dibromochloromethane	13	U
106-93-4	1,2-Dibromoethane	13	U
108-90-7	Chlorobenzene	13	U
100-41-4	Ethylbenzene	13	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E3936

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	13	U
95-47-6	o-Xylene	13	U
1330-20-7	Xylene (Total)	13	U
100-42-5	Styrene	13	U
75-25-2	Bromoform	13	U
98-82-8	Isopropylbenzene	13	U
79-34-5	1,1,2,2-Tetrachloroethane	13	U
108-67-8	1,3,5-Trimethylbenzene	13	U
95-63-6	1,2,4-Trimethylbenzene	13	U
541-73-1	1,3-Dichlorobenzene	13	U
106-46-7	1,4-Dichlorobenzene	13	U
95-50-1	1,2-Dichlorobenzene	13	U
96-12-8	1,2-Dibromo-3-chloropropane	13	U
120-82-1	1,2,4-Trichlorobenzene	13	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	13	U
79-20-9	Methyl Acetate	13	U
110-81-7	Cyclohexane	13	U
108-87-2	Methylcyclohexane	13	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03B

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E3936

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.07	8	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3908

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	17	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3908

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3908

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 8 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.34	10	NJ
2.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	8	NJ
3.					
4.					
5.					
6.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3911

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	140	B
75-15-0	Carbon Disulfide	4	J
75-09-2	Methylene Chloride	11	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	25	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	42	
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	10	J
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	2	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3911

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	4	J
95-47-6	o-Xylene	1	J
1330-20-7	Xylene (Total)	5	J
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	4	J
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	14	U
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11B

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E3911

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.38	7	J
2.		UNKNOWN	11.07	28	J
3.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	17.44	7	NJ
4.		UNKNOWN	17.59	16	J
5.		UNKNOWN	18.35	21	J
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11BRE

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3943

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	120	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	24	
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	22	
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	15	
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	6	J
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	1	J

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11BRE

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3943

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	2	J
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	2	J
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1110507RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11BRE

Sample wt/vol: 5.7 (g/mL) G Lab File ID: V5E3943

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 19 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.37	6	J
2.		UNKNOWN	11.07	30	J
3.		UNKNOWN	11.76	10	J
4.		UNKNOWN	12.06	17	J
5.		UNKNOWN	13.33	6	J
6.		UNKNOWN	16.33	7	J
7.		UNKNOWN	18.34	14	J
8.		UNKNOWN	18.71	6	J
9.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3913

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	68	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	10	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3913

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3913

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 26 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	80-56-8	.ALPHA.-PINENE	10.64	650	NJ
2.	79-92-5	CAMPHENE	10.97	92	NJ
3.	127-91-3	.BETA.-PINENE	11.42	37	NJ
4.		UNKNOWN	11.78	6	J
5.	99-86-5	1,3-CYCLOHEXADIENE, 1-METHYL	11.96	8	NJ
6.	138-86-3	LIMONENE	12.12	46	NJ
7.	99-85-4	1,4-CYCLOHEXADIENE, 1-METHYL	12.53	6	NJ
8.	586-62-9	CYCLOHEXENE, 1-METHYL-4-(1-M	12.98	14	NJ
9.	0-00-0	1-ISOPROPYL-2-METHOXY-4-METH	15.06	41	NJ
10.		UNKNOWN	16.71	6	J
11.	17699-14-8	.ALPHA.-CUBEBENE	16.77	29	NJ
12.		UNKNOWN	16.86	9	J
13.		UNKNOWN	16.98	9	J
14.		UNKNOWN	17.09	25	J
15.		UNKNOWN	17.22	29	J
16.		UNKNOWN	17.31	23	J
17.		UNKNOWN	17.42	13	J
18.		UNKNOWN	17.48	6	J
19.	5951-67-7	CYCLOHEXENE, 6-ETHENYL-6-MET	17.62	32	NJ
20.	0-00-0	.ALPHA.-AMORPHENE	17.73	54	NJ
21.		UNKNOWN	17.85	33	J
22.	483-76-1	NAPHTHALENE, 1,2,3,5,6,8A-HE	17.89	120	NJ
23.	483-76-1	NAPHTHALENE, 1,2,3,5,6,8A-HE	18.09	98	NJ
24.		UNKNOWN	18.18	16	J
25.	483-77-2	NAPHTHALENE, 1,2,3,4-TETRAHY	18.25	23	NJ
26.	17627-24-6	NAPHTHALENE, 1,2,4A,5,6,8A-H	18.31	22	NJ
27.					
28.					
29.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-15B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3966

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	7	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-15B

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E3966

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 7 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3947

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3947

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3947

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 10 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.07	14	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3907

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	41	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3907

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	4	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E3907

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	7	NJ
2.		UNKNOWN	12.06	6	J
3.	91-20-3	NAPHTHALENE	14.97	30	NJB
4.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	39	NJ
5.	91-57-6	NAPHTHALENE, 2-METHYL-	16.54	33	NJ
6.					
7.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07BRE

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3940

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	23	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	11	
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07BRE

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3940

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SVDUP05RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07BRE

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V5E3940

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: not dec. 11 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	14	NJB
2.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	12	NJ
3.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	11	NJ
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-18D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1913

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-18D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1913

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2457

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	37000	U
111-44-4	bis(2-Chloroethyl)Ether	37000	U
95-57-8	2-Chlorophenol	37000	U
95-48-7	2-Methylphenol	37000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	37000	U
106-44-5	4-Methylphenol	37000	U
621-64-7	N-Nitroso-di-n-propylamine	37000	U
67-72-1	Hexachloroethane	37000	U
98-95-3	Nitrobenzene	37000	U
78-59-1	Isophorone	37000	U
88-75-5	2-Nitrophenol	37000	U
105-67-9	2,4-Dimethylphenol	37000	U
120-83-2	2,4-Dichlorophenol	37000	U
91-20-3	Naphthalene	37000	U
106-47-8	4-Chloroaniline	37000	U
111-91-1	bis(2-Chloroethoxy)methane	37000	U
87-68-3	Hexachlorobutadiene	37000	U
59-50-7	4-Chloro-3-Methylphenol	37000	U
91-57-6	2-Methylnaphthalene	37000	U
77-47-4	Hexachlorocyclopentadiene	37000	U
88-06-2	2,4,6-Trichlorophenol	37000	U
95-95-4	2,4,5-Trichlorophenol	93000	U
91-58-7	2-Chloronaphthalene	37000	U
88-74-4	2-Nitroaniline	93000	U
131-11-3	Dimethylphthalate	37000	U
208-96-8	Acenaphthylene	37000	U
606-20-2	2,6-Dinitrotoluene	37000	U
99-09-2	3-Nitroaniline	93000	U
83-32-9	Acenaphthene	25000	J
51-28-5	2,4-Dinitrophenol	93000	U
100-02-7	4-Nitrophenol	93000	U
132-64-9	Dibenzofuran	38000	
121-14-2	2,4-Dinitrotoluene	37000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2457

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	37000	U
7005-72-3	4-Chlorophenyl-phenylether	37000	U
86-73-7	Fluorene	11000	J
100-01-6	4-Nitroaniline	93000	U
534-52-1	4,6-Dinitro-2-methylphenol	93000	U
86-30-6	N-Nitrosodiphenylamine (1)	37000	U
101-55-3	4-Bromophenyl-phenylether	37000	U
118-74-1	Hexachlorobenzene	37000	U
87-86-5	Pentachlorophenol	93000	U
85-01-8	Phenanthrene	910000	E
120-12-7	Anthracene	160000	
86-74-8	Carbazole	68000	
84-74-2	Di-n-butylphthalate	37000	U
206-44-0	Fluoranthene	850000	E
129-00-0	Pyrene	600000	E
85-68-7	Butylbenzylphthalate	37000	U
91-94-1	3,3'-Dichlorobenzidine	37000	U
56-55-3	Benzo(a)anthracene	230000	
218-01-9	Chrysene	240000	
117-81-7	bis(2-Ethylhexyl)phthalate	37000	U
117-84-0	Di-n-octylphthalate	37000	U
205-99-2	Benzo(b)fluoranthene	300000	
207-08-9	Benzo(k)fluoranthene	110000	
50-32-8	Benzo(a)pyrene	140000	
193-39-5	Indeno(1,2,3-cd)pyrene	36000	J
53-70-3	Dibenzo(a,h)anthracene	13000	J
191-24-2	Benzo(g,h,i)perylene	32000	J
92-52-4	1,1'-Biphenyl	37000	U
98-86-2	Acetophenone	37000	U
1912-24-9	Atrazine	37000	U
100-52-7	Benzaldehyde	37000	U
105-60-2	Caprolactum	37000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1011617

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2457

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	486-25-9	9H-FLUOREN-9-ONE	15.94	92000	NJ
2.	132-65-0	DIBENZOTHIOPHENE	16.10	38000	NJ
3.	613-12-7	ANTHRACENE, 2-METHYL-	17.35	53000	NJ
4.	613-12-7	ANTHRACENE, 2-METHYL-	17.40	75000	NJ
5.		UNKNOWN	17.55	45000	J
6.	610-48-0	ANTHRACENE, 1-METHYL-	17.61	40000	NJ
7.	35465-71-5	2-PHENYLNAPHTHALENE	17.96	39000	NJ
8.	84-65-1	9,10-ANTHRACENEDIONE	18.02	42000	NJ
9.	5737-13-3	CYCLOPENTA(DEF)PHENANTHRENON	18.65	52000	NJ
10.	2381-21-7	PYRENE, 1-METHYL-	20.12	21000	NJ
11.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	20.96	22000	NJ
12.		UNKNOWN	21.17	17000	J
13.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	21.40	16000	NJ
14.		UNKNOWN	24.18	120000	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06ADL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2590

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	92000	U
111-44-4	bis(2-Chloroethyl)Ether	92000	U
95-57-8	2-Chlorophenol	92000	U
95-48-7	2-Methylphenol	92000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	92000	U
106-44-5	4-Methylphenol	92000	U
621-64-7	N-Nitroso-di-n-propylamine	92000	U
67-72-1	Hexachloroethane	92000	U
98-95-3	Nitrobenzene	92000	U
78-59-1	Isophorone	92000	U
88-75-5	2-Nitrophenol	92000	U
105-67-9	2,4-Dimethylphenol	92000	U
120-83-2	2,4-Dichlorophenol	92000	U
91-20-3	Naphthalene	92000	U
106-47-8	4-Chloroaniline	92000	U
111-91-1	bis(2-Chloroethoxy)methane	92000	U
87-68-3	Hexachlorobutadiene	92000	U
59-50-7	4-Chloro-3-Methylphenol	92000	U
91-57-6	2-Methylnaphthalene	92000	U
77-47-4	Hexachlorocyclopentadiene	92000	U
88-06-2	2,4,6-Trichlorophenol	92000	U
95-95-4	2,4,5-Trichlorophenol	230000	U
91-58-7	2-Chloronaphthalene	92000	U
88-74-4	2-Nitroaniline	230000	U
131-11-3	Dimethylphthalate	92000	U
208-96-8	Acenaphthylene	92000	U
606-20-2	2,6-Dinitrotoluene	92000	U
99-09-2	3-Nitroaniline	230000	U
83-32-9	Acenaphthene	31000	DJ
51-28-5	2,4-Dinitrophenol	230000	U
100-02-7	4-Nitrophenol	230000	U
132-64-9	Dibenzofuran	51000	DJ
121-14-2	2,4-Dinitrotoluene	92000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06ADL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2590

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted:02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	92000	U
7005-72-3	4-Chlorophenyl-phenylether	92000	U
86-73-7	Fluorene	16000	DJ
100-01-6	4-Nitroaniline	230000	U
534-52-1	4,6-Dinitro-2-methylphenol	230000	U
86-30-6	N-Nitrosodiphenylamine (1)	92000	U
101-55-3	4-Bromophenyl-phenylether	92000	U
118-74-1	Hexachlorobenzene	92000	U
87-86-5	Pentachlorophenol	230000	U
85-01-8	Phenanthrene	730000	D
120-12-7	Anthracene	190000	D
86-74-8	Carbazole	71000	DJ
84-74-2	Di-n-butylphthalate	92000	U
206-44-0	Fluoranthene	680000	D
129-00-0	Pyrene	540000	D
85-68-7	Butylbenzylphthalate	92000	U
91-94-1	3,3'-Dichlorobenzidine	92000	U
56-55-3	Benzo(a)anthracene	280000	D
218-01-9	Chrysene	270000	D
117-81-7	bis(2-Ethylhexyl)phthalate	92000	U
117-84-0	Di-n-octylphthalate	92000	U
205-99-2	Benzo(b)fluoranthene	300000	D
207-08-9	Benzo(k)fluoranthene	110000	D
50-32-8	Benzo(a)pyrene	180000	D
193-39-5	Indeno(1,2,3-cd)pyrene	76000	DJ
53-70-3	Dibenzo(a,h)anthracene	26000	DJ
191-24-2	Benzo(g,h,i)perylene	68000	DJ
92-52-4	1,1'-Biphenyl	92000	U
98-86-2	Acetophenone	92000	U
1912-24-9	Atrazine	92000	U
100-52-7	Benzaldehyde	92000	U
105-60-2	Caprolactum	92000	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1011617DL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06ADL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2590

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 50.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	486-25-9	9H-FLUOREN-9-ONE	15.70	89000	NJD
2.	132-65-0	DIBENZOTHIOPHENE	15.86	44000	NJD
3.	832-64-4	PHENANTHRENE, 4-METHYL-	17.10	55000	NJD
4.	613-12-7	ANTHRACENE, 2-METHYL-	17.15	74000	NJD
5.		UNKNOWN	17.31	44000	JD
6.	779-02-2	ANTHRACENE, 9-METHYL-	17.36	50000	NJD
7.	612-94-2	NAPHTHALENE, 2-PHENYL-	17.73	43000	NJD
8.	84-65-1	9,10-ANTHRACENEDIONE	17.77	40000	NJD
9.	5737-13-3	CYCLOPENTA(DEF)PHENANTHRENON	18.38	60000	NJD
10.	2381-21-7	PYRENE, 1-METHYL-	19.86	38000	NJD
11.	82-05-3	7H-BENZ[DE]ANTHRACEN-7-ONE	20.71	40000	NJD
12.	198-55-0	PERYLENE	23.91	140000	NJD
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2455

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	970	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2455

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	55	J
129-00-0	Pyrene	66	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	51	J
218-01-9	Chrysene	79	J
117-81-7	bis(2-Ethylhexyl)phthalate	43	J
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	150	J
207-08-9	Benzo(k)fluoranthene	68	J
50-32-8	Benzo(a)pyrene	80	J
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	380	U
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2455

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	930-89-2	CYCLOPENTANE, 1-ETHYL-2-METH	13.05	300	NJ
2.		UNKNOWN	15.22	640	J
3.	72-55-9	P,P'-DDE	19.48	200	NJ
4.		UNKNOWN	23.38	670	J
5.		UNKNOWN	24.09	170	J
6.		UNKNOWN	29.15	210	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2572

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2572

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2572

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	94-59-7	1,3-BENZODIOXOLE, 5-(2-PROPE	10.88	540	NJ
2.		UNKNOWN	19.16	330	J
3.	123-95-5	OCTADECANOIC ACID, BUTYL EST	20.61	360	NJ
4.		UNKNOWN	23.18	350	J
5.		UNKNOWN	27.28	190	J
6.		UNKNOWN	28.61	160	J
7.		UNKNOWN	29.98	250	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2573

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2573

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2573

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.18	160	J
2.	26047-31-4	ERGOST-7-EN-3-OL, (3.BETA.)-	26.47	270	NJ
3.		UNKNOWN	27.23	1000	J
4.		UNKNOWN	27.86	240	J
5.		UNKNOWN	28.40	200	J
6.	1058-61-3	STIGMAST-4-EN-3-ONE	28.62	590	NJ
7.		UNKNOWN	29.14	220	J
8.		UNKNOWN	29.99	250	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2574

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2574

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2574

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.85	240	J
2.		UNKNOWN	23.40	390	J
3.	83-47-6	.GAMMA.-SITOSTEROL	27.29	160	NJ
4.	1058-61-3	STIGMAST-4-EN-3-ONE	28.61	160	NJ
5.		UNKNOWN	29.98	260	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2575

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2575

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	56	J
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2575

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 12 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	22.74	270	J
2.		UNKNOWN	23.50	430	J
3.		UNKNOWN	23.96	230	J
4.		UNKNOWN	25.24	320	J
5.		UNKNOWN	26.47	450	J
6.	83-47-6	.GAMMA.-SITOSTEROL	27.22	960	NJ
7.	1058-61-3	STIGMAST-4-EN-3-ONE	28.62	340	NJ
8.		UNKNOWN	29.83	190	J
9.		UNKNOWN	29.99	340	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2474

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2474

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2474

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.16	160	J
2.		UNKNOWN	27.55	350	J
3.	58-22-0	TESTOSTERONE	28.95	280	NJ
4.		UNKNOWN	30.41	220	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2576

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2576

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	46	J
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2576

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	99-85-4	1,4-CYCLOHEXADIENE, 1-METHYL	5.99	510	NJ
2.		UNKNOWN	10.81	150	J
3.	14021-23-9	D-FRIEDOOLEAN-14-ENE, 3-METH	26.48	510	NJ
4.		UNKNOWN	26.67	220	J
5.	83-47-6	.GAMMA.-SITOSTEROL	27.21	980	NJ
6.		UNKNOWN	27.59	530	J
7.		UNKNOWN	28.27	280	J
8.	1058-61-3	STIGMAST-4-EN-3-ONE	28.62	340	NJ
9.		UNKNOWN	30.66	140	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2466

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2466

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1050507

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S2D2466

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	112-53-8	1-DODECANOL	13.00	260	NJ
2.		UNKNOWN	19.30	430	J
3.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	20.75	360	NJ
4.		UNKNOWN	23.32	200	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2464

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2464

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2467

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2467

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1100204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S2D2467

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	25.36	250	J
2.					
3.					
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2456

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)Ether	400	U
95-57-8	2-Chlorophenol	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitroso-di-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
120-83-2	2,4-Dichlorophenol	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-Methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	400	U
208-96-8	Acenaphthylene	400	U
606-20-2	2,6-Dinitrotoluene	400	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2456

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl-phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	400	U
101-55-3	4-Bromophenyl-phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	400	U
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butylphthalate	400	U
206-44-0	Fluoranthene	45	J
129-00-0	Pyrene	93	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	45	J
218-01-9	Chrysene	73	J
117-81-7	bis(2-Ethylhexyl)phthalate	78	J
117-84-0	Di-n-octylphthalate	400	U
205-99-2	Benzo(b)fluoranthene	88	J
207-08-9	Benzo(k)fluoranthene	400	U
50-32-8	Benzo(a)pyrene	55	J
193-39-5	Indeno(1,2,3-cd)pyrene	400	U
53-70-3	Dibenzo(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	400	U
92-52-4	1,1'-Biphenyl	400	U
98-86-2	Acetophenone	400	U
1912-24-9	Atrazine	400	U
100-52-7	Benzaldehyde	45	J
105-60-2	Caprolactum	400	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1110507

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2456

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 19 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	3424-82-6	O,P'-DDE	19.49	810	NJ
2.		UNKNOWN	19.84	410	J
3.	72-54-8	1,1-DICHLORO-2,2-BIS(P-CHLOR	20.17	180	NJ
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2468

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted:02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)Ether	340	U
95-57-8	2-Chlorophenol	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitroso-di-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
120-83-2	2,4-Dichlorophenol	340	U
91-20-3	Naphthalene	340	U
106-47-8	4-Chloroaniline	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-Methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	340	U
208-96-8	Acenaphthylene	340	U
606-20-2	2,6-Dinitrotoluene	340	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2468

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted:02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl-phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	340	U
101-55-3	4-Bromophenyl-phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	340	U
120-12-7	Anthracene	340	U
86-74-8	Carbazole	340	U
84-74-2	Di-n-butylphthalate	340	U
206-44-0	Fluoranthene	340	U
129-00-0	Pyrene	340	U
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	340	U
218-01-9	Chrysene	340	U
117-81-7	bis(2-Ethylhexyl)phthalate	340	U
117-84-0	Di-n-octylphthalate	340	U
205-99-2	Benzo(b)fluoranthene	340	U
207-08-9	Benzo(k)fluoranthene	340	U
50-32-8	Benzo(a)pyrene	340	U
193-39-5	Indeno(1,2,3-cd)pyrene	340	U
53-70-3	Dibenzo(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	340	U
92-52-4	1,1'-Biphenyl	340	U
98-86-2	Acetophenone	340	U
1912-24-9	Atrazine	340	U
100-52-7	Benzaldehyde	340	U
105-60-2	Caprolactum	340	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1120204

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S2D2468

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	80-56-8	.ALPHA.-PINENE	6.12	780	NJ
2.		UNKNOWN	13.35	200	J
3.	39029-41-9	NAPHTHALENE, 1,2,3,4,4A,5,6,	13.57	440	NJ
4.	5951-67-7	CYCLOHEXENE, 6-ETHENYL-6-MET	14.70	140	NJ
5.		UNKNOWN	18.58	190	J
6.		UNKNOWN	19.30	510	J
7.		UNKNOWN	19.77	320	J
8.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	20.75	460	NJ
9.		UNKNOWN	20.91	250	J
10.		UNKNOWN	21.17	7500	J
11.		UNKNOWN	23.32	180	J
12.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2463

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S2D2463

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2465

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2465

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2568

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2568

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	68	J
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SVDUP05

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2568

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	120-58-1	1,3-BENZODIOXOLE, 5-(1-PROPE	10.88	920	NJ
2.		UNKNOWN	27.26	350	J
3.		UNKNOWN	27.87	260	J
4.	1058-61-3	STIGMAST-4-EN-3-ONE	28.61	330	NJ
5.		UNKNOWN	29.99	290	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-021103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: B0257-18D

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9446F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1011617

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-06A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9531F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9523F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-02A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9521F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/27/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9534F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-10A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9535F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9537F

% Moisture: 12 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-14A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9539F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-16A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9481F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1050507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: E1D9524F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1090608

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9522F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1100204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-08A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9533F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-11A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9536F

% Moisture: 19 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	150	P
11096-82-5	Aroclor-1260	40	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1120204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-13A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9538F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1130406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-15A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9540F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/28/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1140406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-17A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9482F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SVDUP05

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: B0257-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9532F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/12/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/27/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

APPENDIX C

SUPPORT DOCUMENTATION

	Sample		Duplicate			
	WOD-SS-109		**WOD-SS-DUP05**			
	UG/KG		UG/KG			
Methyl Acetate	10.0	U	4.0	J	85.7	6
Benzaldehyde	360.0	U	68.0	J	136.4	292

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for tw0 aqueous and sixteen soil samples that were collected on February 11, 2003, and received at Mitkem on February 12, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples SV1050507, SVDUP05, WOD-SS-110 and WOD-SS-111 and high recovery of dibromofluoromethane, 1,2-dichloroethane-d4 and toluene-d8 in sample SV1110507. Sample SV1050507 was re-analyzed with all surrogate recoveries within QC limits. Matrix interference confirmed with re-analysis of samples SVDUP05, WOD-SS-110, WOD-SS-111 and SV1110507 with similar findings.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1130406. Spike recoveries were within the QC limits with the exception of high recovery of 2-hexanone in the matrix spike and high recovery of 2-hexanone and 4-methyl-2-pentanone in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 2-fluorophenol in lab control sample S2MLCS and surrogates diluted out in the initial analysis and re-analysis at dilution for sample SV1011617.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1130406. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: due to sample matrix, sample SV1011617 had 5mL final volume rather than the normal 1mL final volume. This is equivalent to 5x dilution. Sample SV1011617 was initially analyzed at 20x dilution, an overall dilution of 100x. To ensure that all target analtyes were determined within the instrument calibration range, sample SV1011617 was re-analyzed at 50x dilution, an overall dilution of 250x. Internal standard area counts were within QC criteria with the exception of samples SV1110507

and WOD-SS-105. The samples were not re-analyzed at all surrogate recoveries were within the QC limits. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of decachlorobiphenyl in one column in sample SV1011617.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1130406. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1130406. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1130406. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/24/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0257

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0257-01A	TB-021103	
B0257-02A	WOD-SS-109	
B0257-02B	WOD-SS-109	
B0257-02C	WOD-SS-109	
B0257-03A	SV1090608	WOD-SV-109-0608
B0257-03B	SV1090608	WOD-SV-109-0608
B0257-04A	WOD-SS-105	
B0257-04B	WOD-SS-105	
B0257-04C	WOD-SS-105	
B0257-05A	SV1050507	WOD-SV-105-0507
B0257-05B	SV1050507	WOD-SV-105-0507
B0257-06A	SV1011617	FTA-SV-101-1617
B0257-06B	SV1011617	FTA-SV-101-1617
B0257-07A	SVDUP05	WOD-SV-DUP05
B0257-07B	SVDUP05	WOD-SV-DUP05
B0257-08A	SV1100204	WOD-SV-110-0204
B0257-08B	SV1100204	WOD-SV-110-0204
B0257-09A	WOD-SS-110	
B0257-09B	WOD-SS-110	
B0257-09C	WOD-SS-110	
B0257-10A	WOD-SS-111	
B0257-10B	WOD-SS-111	
B0257-10C	WOD-SS-111	
B0257-11A	SV1110507	WOD-SV-111-0507
B0257-11B	SV1110507	WOD-SV-111-0507
B0257-12A	WOD-SS-112	
B0257-12B	WOD-SS-112	
B0257-12C	WOD-SS-112	
B0257-13A	SV1120204	WOD-SV-112-0204
B0257-13B	SV1120204	WOD-SV-112-0204
B0257-14A	WOD-SS-113	
B0257-14B	WOD-SS-113	
B0257-14C	WOD-SS-113	
B0257-15A	SV1130406	WOD-SV-113-0406
B0257-15B	SV1130406	WOD-SV-113-0406
B0257-16A	WOD-SS-114	
B0257-16B	WOD-SS-114	
B0257-16C	WOD-SS-114	
B0257-17A	SV1140406	WOD-SV-114-0406
B0257-17B	SV1140406	WOD-SV-114-0406

**** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"***

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0257-18A	RB-021103	
B0257-18B	RB-021103	
B0257-18C	RB-021103	
B0257-18D	RB-021103	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0257
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA vial HCl; TCL VOC; Sparge Enclosure sample; TCL VOC; 40z Amber glass widemouth; TCL SVOC, PCB; 40z Amber glass widemouth; TAL Metals + Hg; 40 Amber glass widemouth; TOC, % Moisture; 40z Amber glass widemouth; TAL Metals, % Moisture; 8oz Amber glass widemouth; Grain Size

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	TCL VOC	Sparge Enclosure sample	TCL VOC	40z Amber glass widemouth	TCL SVOC, PCB	40z Amber glass widemouth	TAL Metals + Hg	40 Amber glass widemouth	TOC, % Moisture	40z Amber glass widemouth	TAL Metals, % Moisture	8oz Amber glass widemouth	Grain Size	COMMENTS
TB-021103	2/11/03 /		X	X			01	2	2*														Trip Blank
WOD-SS-109	2/11/03 / 0755		X		X		02	7		3*	1*	1*	1*			1*							
WOD-SU-109-0608	2/11/03 / 0830		X		X		03	5		3	1			1									
WOD-SS-105	2/11/03 / 0840		X		X		04	7		3	1	1	1			1							
WOD-SU-105-0507	2/11/03 / 0905		X		X		05	5		3	1			1		+	cm 2/11/03						
FTA-SU-101-1617	2/11/03 / 0845		X		X		06	4		3	1												
WOD-SU-OU3-05	2/11/03 / 0855		X		X		07	6		3	1	1	1			+	cm 2/11/03						
WOD-SB-110-0204	2/11/03 / 0955		X		X		08	5		3	1			1									
WOD-SS-110	2/11/03 / 0925		X		X		09	7		3	1	1	1			1							
WOD-SS-111	2/11/03 / 1040		X		X		10	7		3	1	1	1			1							
WOD-SU-111-0507	2/11/03 / 1110		X		X		11	5		3	1			1									
WOD-SS-112	2/11/03 / 1125		X		X		12	7		3	1	1	1			1							

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/11/03 / 1700	[signature]	2-12-03 / 0900	Blank Water supplied by the Laboratory shipped via Federal Express Airbill No 8286 8471 0232	3.0
		/		/		
		/		/		

000018

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0257
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406			CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA-WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	5 gram Encore sample	TCL VOC 40z Amber Glass Widemouth	TAL Metals 4oz Amber Glass Widemouth %Moisture	SVOC PCB 40z Amber Glass Widemouth	TAL Metals + pH 4oz Amber Glass Widemouth %Moisture	TOC 8oz Amber Glass Widemouth	Grain Size 40ml VOA Vial HCl	VOC 1 Liter Amber Glass	SVOC 1 Liter Amber Glass	PCB 500ml PDM Hard	TAL Metals 40ml VOA Vial HCl	TOC	COMMENTS
WOD-SU-112-0204	2/11/03 1140		X		X		13	5	3	1	1										
WOD-SS-113	2/11/03 1215		X		X		14	7	3		1	1	1	1							
WOD-SU-113-0406	2/11/03 1235		X		X		15	15	9	3	3										DO MS/MSD
WOD-SS-114	2/11/03 1315		X		X		16	7	3		1	1	1	1							
WOD-SU-114-0406	2/11/03 1335		X		X		17	5	9	1	1										
RB-021103	2/11/03 1430		X	X			18	9							2*	2*	2*	1*	2*		Rinsate Blank
	/																				
	/																				
	/																				
	/																				
	/																				
	/																				

TSP#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	2/11/03 1700	[signature]	2-12-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Blank water supplied by the laboratory
shipped via Fed Express
Airbill No 8286 8471 0232

COOLER TEMP: 2.0

000019

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MITKEM CORPORATION

Sample Condition Form

Page 1 of 1

Received By: (NC)	Reviewed By:	Date: 2-12-03	MITKEM Project: B025?7
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed YES / NO*
*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 4c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 2-12-03

8)Time Received 0900

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B025701					H
02					E
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					Y
16					
17					E
B025718	L2				H

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks

Rad OK yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

B0257

HOLDING TIME

04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
%	LCSS	0213LCSS	LCS	B0257	HG	/ /	02/14/03	02/14/03	0	0	0
%	LCSW	0213LCSW	LCS	B0257	HG	/ /	02/13/03	02/14/03	0	1	0
MG/KG	PBS	0213PBS	M_BLANK	B0257	HG	/ /	02/14/03	02/14/03	0	0	0
UG/L	PBW	0213PBW	M_BLANK	B0257	HG	/ /	02/13/03	02/14/03	0	1	0
UG/L	RB-021103	B0257-18C	NORMAL	B0257	HG	02/11/03	02/13/03	02/14/03	2	1	3
MG/KG	WOD-SS-105	B0257-04A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-109	B0257-02A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-110	B0257-09A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-111	B0257-10A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-112	B0257-12A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-113	B0257-14A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-114	B0257-16A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-113-0406DUP	B0257-15ADUP	DUPLICATE	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0213LCSS	LCS	B0257	M	/ /	02/13/03	02/13/03	0	0	0
%	LCSW	0213LCSW	LCS	B0257	M	/ /	02/13/03	02/13/03	0	0	0
%	LCSW1	0214LCSW	LCS	B0257	M	/ /	02/14/03	02/14/03	0	0	0
MG/KG	PBS	0213PBS	M_BLANK	B0257	M	/ /	02/13/03	02/13/03	0	0	0
UG/L	PBW	0213PBW	M_BLANK	B0257	M	/ /	02/13/03	02/13/03	0	0	0
UG/L	PBW1	0214PBW	M_BLANK	B0257	M	/ /	02/14/03	02/14/03	0	0	0
UG/L	RB-021103	B0257-18C	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-105	B0257-04A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-109	B0257-02A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-110	B0257-09A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-111	B0257-10A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-112	B0257-12A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-113	B0257-14A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-114	B0257-16A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	M	02/11/03	02/13/03	02/14/03	2	1	3
MG/KG	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-113-0406DUP	B0257-15ADUP	DUPLICATE	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
UG/L	WOD-SV-114-0406L	B0257-17AL	NORMAL	B0257	M	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
%	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	FTA-SV-101-1617DL	B0257-06ADL	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	RB-021103	B0257-18D	NORMAL	B0257	OS	02/11/03	02/12/03	02/19/03	1	7	8
%	SBLK2M	MB-5791	M_BLANK	B0257	OS	/ /	02/25/03	03/10/03	0	13	0
%	SBLK2MLCS	LCS-5791	LCS	B0257	OS	/ /	02/25/03	03/10/03	0	13	0
UG/L	SBLK2R	MB-5612	M_BLANK	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCS	LCS-5612	LCS	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCSD	LCSD-5612	LCSD	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	WOD-SS-105	B0257-04A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SS-109	B0257-02A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-110	B0257-09A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-111	B0257-10A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-112	B0257-12A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-113	B0257-14A	NORMAL	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SS-114	B0257-16A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SV-113-0406MSD	B0257-15AMSD	MSD	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	OS	02/11/03	02/12/03	03/14/03	1	30	31
%	FTA-SV-101-1617	B0257-06B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
UG/L	RB-021103	B0257-18A	NORMAL	B0257	OV	02/11/03	02/23/03	02/23/03	12	0	12
%	TB-021103	B0257-01A	NORMAL	B0257	OV	02/11/03	02/23/03	02/23/03	12	0	12
%	VBLK5V	V5B0214A	M_BLANK	B0257	OV	/ /	02/14/03	02/14/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5VLCS	V5L0214A	LCS	B0257	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK5X	V5B0215A	M_BLANK	B0257	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5XLCS	V5L0215A	LCS	B0257	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0257	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0257	OV	/ /	02/17/03	02/17/03	0	0	0
UG/L	VBLK6J	V6B0223A	M_BLANK	B0257	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK6JLCS	V6L0223A	LCS	B0257	OV	/ /	02/23/03	02/23/03	0	0	0
%	WOD-SS-105	B0257-04C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-109	B0257-02C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-110	B0257-09C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-110RE	B0257-09CRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-111	B0257-10C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-111RE	B0257-10CRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-112	B0257-12C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-113	B0257-14C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
UG/KG	WOD-SS-114	B0257-16C	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-105-0507	B0257-05B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-105-0507RE	B0257-05BRE	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-109-0608	B0257-03B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SV-110-0204	B0257-08B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-111-0507	B0257-11B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-111-0507RE	B0257-11BRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SV-112-0204	B0257-13B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406	B0257-15B	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-113-0406MS	B0257-15BMS	MS	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406MSD	B0257-15BMSD	MSD	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-114-0406	B0257-17B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-DUP05	B0257-07B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-DUP05RE	B0257-07BRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	BBLK1A	MB-5743	M_BLANK	B0257	PCB	/ /	02/21/03	02/27/03	0	6	0
%	BBLK1ALCS	LCS-5743	LCS	B0257	PCB	/ /	02/21/03	02/27/03	0	6	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	RB-021103	B0257-18D	NORMAL	B0257	PCB	02/11/03	02/18/03	02/23/03	7	5	12
%	WOD-SS-105	B0257-04A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SS-109	B0257-02A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SS-110	B0257-09A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-111	B0257-10A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-112	B0257-12A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-113	B0257-14A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-114	B0257-16A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/25/03	10	4	14
%	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406MSD	B0257-15AMSD	MSD	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/25/03	10	4	14
%	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
S.U.	WOD-SS-105	B0257-04A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
S.U.	WOD-SS-109	B0257-02A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-110	B0257-09A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-111	B0257-10A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-112	B0257-12A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-113	B0257-14A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-114	B0257-16A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
%	LCS-6168	LCS-6168	LCS	B0257	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0257	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021103	B0257-18B	NORMAL	B0257	TOC	02/11/03	02/28/03	02/28/03	17	0	17

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3892 Lab Sample ID: V5B0214A

Date Analyzed: 02/14/03 Time Analyzed: 1021

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5VLCS	V5L0214A	V5E3893	1054
02	SV1130406MS	B0257-15BMS	V5E3900	1421
03	SV1130406MSD	B0257-15BMSD	V5E3901	1450
04	SV1050507	B0257-05B	V5E3905	1646
05	SVDUP05	B0257-07B	V5E3907	1744
06	SV1100204	B0257-08B	V5E3908	1813
07	WOD-SS-110	B0257-09C	V5E3909	1842
08	WOD-SS-111	B0257-10C	V5E3910	1912
09	SV1110507	B0257-11B	V5E3911	1941
10	WOD-SS-112	B0257-12C	V5E3912	2010
11	SV1120204	B0257-13B	V5E3913	2039
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5V

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0214A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	12	NJ
2.					
3.					
4.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3932 Lab Sample ID: V5B0215A

Date Analyzed: 02/15/03 Time Analyzed: 1021

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5XLCS	V5L0215A	V5E3933	1057
02	WOD-SS-109	B0257-02C	V5E3935	1213
03	SV1090608	B0257-03B	V5E3936	1242
04	WOD-SS-105	B0257-04C	V5E3937	1311
05	SV1011617	B0257-06B	V5E3939	1409
06	SVDUP05RE	B0257-07BRE	V5E3940	1438
07	WOD-SS-110RE	B0257-09CRE	V5E3941	1507
08	WOD-SS-111RE	B0257-10CRE	V5E3942	1536
09	SV1110507RE	B0257-11BRE	V5E3943	1605
10	WOD-SS-113	B0257-14C	V5E3944	1634
11	SV1140406	B0257-17B	V5E3947	1801
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COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	10	NJ
2.					
3.					
4.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3963 Lab Sample ID: V5B0217A

Date Analyzed: 02/17/03 Time Analyzed: 1214

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5YLCS	V5L0217A	V5E3964	1244
02	SV1050507RE	B0257-05BRE	V5E3965	1317
03	SV1130406	B0257-15B	V5E3966	1347
04	WOD-SS-114	B0257-16C	V5E3967	1416
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	2	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	7	NJ
2.					
3.					
4.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V6C5083 Lab Sample ID: V6B0223A

Date Analyzed: 02/23/03 Time Analyzed: 1022

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V6JLCS	V6L0223A	V6C5084	1053
02	TB-021103	B0257-01A	V6C5096	1642
03	RB-021103	B0257-18A	V6C5097	1710
04				
05				
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COMMENTS:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: V6B0223A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5083

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: V6B0223A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5083

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: V6B0223A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5083

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3670 BFB Injection Date: 02/07/03

Instrument ID: V5 BFB Injection Time: 0942

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.6
75	30.0 - 60.0% of mass 95	48.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.7
175	5.0 - 9.0% of mass 174	5.9 (7.3)1
176	95.0 - 101.0% of mass 174	79.6 (97.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505K	V5S0207A	V5E3671	02/07/03	1037
02	VSTD2005K	V5S0207C	V5E3673	02/07/03	1147
03	VSTD1005K	V5S0207D	V5E3674	02/07/03	1216
04	VSTD0055K	V5S0207B	V5E3677	02/07/03	1434
05	VSTD0205K	V5S0207E	V5E3678	02/07/03	1509
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.275	0.287	0.289	0.277	0.259	0.277	4.3
*	Chloromethane	0.450	0.448	0.482	0.411	0.452	0.449	5.7*
	Vinyl Chloride	0.391	0.415	0.428	0.409	0.406	0.410	3.3
	Bromomethane	0.289	0.250	0.236	0.221	0.181	0.235	16.8
	Chloroethane	0.208	0.219	0.224	0.205	0.175	0.206	9.1
	Trichlorofluoromethane	0.284	0.343	0.354	0.368	0.337	0.337	9.4
	1,1-Dichloroethene	0.275	0.293	0.288	0.296	0.290	0.288	2.9
	Acetone	0.154	0.123	0.135	0.099	0.084	0.119	23.6
	Carbon Disulfide	0.794	0.819	0.844	0.819	0.737	0.803	5.1
	Methylene Chloride	0.370	0.416	0.394	0.376	0.364	0.384	5.5
	trans-1,2-Dichloroethene	0.282	0.304	0.298	0.309	0.303	0.299	3.5
	Methyl tert-butyl ether	0.790	0.850	0.843	0.931	0.816	0.846	6.3
*	1,1-Dichloroethane	0.559	0.590	0.590	0.608	0.607	0.591	3.3*
	2-Butanone	0.153	0.183	0.191	0.178	0.155	0.172	9.9
	cis-1,2-Dichloroethene	0.299	0.317	0.312	0.328	0.322	0.316	3.5
	Chloroform	0.494	0.507	0.521	0.547	0.535	0.521	4.1
	1,1,1-Trichloroethane	0.340	0.368	0.346	0.357	0.351	0.352	3.0
	Carbon Tetrachloride	0.301	0.344	0.336	0.355	0.354	0.338	6.6
	1,2-Dichloroethane	0.340	0.386	0.412	0.408	0.397	0.389	7.5
	Benzene	1.203	1.223	1.222	1.294	1.262	1.241	3.0
	Trichloroethene	0.298	0.319	0.311	0.336	0.330	0.319	4.7
	1,2-Dichloropropane	0.313	0.333	0.347	0.351	0.337	0.336	4.4
	Bromodichloromethane	0.338	0.372	0.418	0.417	0.412	0.391	9.1
	cis-1,3-Dichloropropene	0.438	0.494	0.556	0.558	0.548	0.519	10.0
	4-Methyl-2-pentanone	0.282	0.353	0.344	0.383	0.315	0.335	11.4
	Toluene	1.139	1.195	1.208	1.254	1.236	1.206	3.7
	trans-1,3-Dichloropropene	0.389	0.436	0.521	0.494	0.489	0.466	11.3
	1,1,2-Trichloroethane	0.233	0.247	0.298	0.267	0.259	0.261	9.3
	Tetrachloroethene	0.322	0.337	0.323	0.297	0.333	0.322	4.8
	2-Hexanone	0.258	0.317	0.288	0.331	0.289	0.297	9.6
	Dibromochloromethane	0.348	0.396	0.468	0.386	0.440	0.408	11.6
	1,2-Dibromoethane	0.334	0.373	0.414	0.343	0.391	0.371	8.9
*	Chlorobenzene	1.048	1.072	1.176	0.957	1.104	1.071	7.5*
	Ethylbenzene	0.509	0.533	0.565	0.490	0.551	0.530	5.7
	m,p-Xylene	0.631	0.654	0.716	0.606	0.669	0.655	6.4
	o-Xylene	0.595	0.646	0.718	0.603	0.671	0.647	7.8
	Xylene (Total)	0.619	0.651	0.717	0.605	0.670	0.652	6.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD	
Styrene		0.963	1.072	1.273	1.048	1.143	1.100	10.6	
Bromoform	*	0.220	0.260	0.346	0.270	0.305	0.280	17.0	*
Isopropylbenzene		1.491	1.591	1.801	1.522	1.707	1.622	8.0	
1,1,2,2-Tetrachloroethane	*	1.001	1.076	1.337	0.835	1.016	1.053	17.3	*
1,3,5-Trimethylbenzene		2.785	2.848	3.316	2.309	2.835	2.819	12.7	
1,2,4-Trimethylbenzene		2.811	2.821	3.415	2.382	2.886	2.863	12.9	
1,3-Dichlorobenzene		1.608	1.645	1.960	1.396	1.698	1.661	12.2	
1,4-Dichlorobenzene		1.661	1.657	1.973	1.416	1.706	1.683	11.8	
1,2-Dichlorobenzene		1.524	1.538	1.919	1.322	1.569	1.574	13.7	
1,2-Dibromo-3-chloropropane		0.117	0.155	0.210	0.136	0.170	0.158	22.3	
1,2,4-Trichlorobenzene		0.667	0.779	1.062	0.823	1.013	0.869	19.0	
1,1,2-Trichlo-1,2,2-trifluor		0.211	0.283	0.249	0.251	0.216	0.242	12.1	
Methyl Acetate		0.286	0.327	0.327	0.320	0.275	0.307	7.9	
Cyclohexane		0.486	0.515	0.507	0.510	0.462	0.496	4.4	
Methylcyclohexane		0.462	0.508	0.489	0.521	0.462	0.488	5.5	
Dibromofluoromethane		0.278	0.289	0.273	0.313	0.298	0.290	5.4	
1,2-Dichloroethane-d4		0.048	0.061	0.057	0.065	0.061	0.058	10.7	
Toluene-d8		1.208	1.229	1.117	1.133	1.253	1.188	5.0	
Bromofluorobenzene		0.479	0.503	0.465	0.481	0.523	0.490	4.7	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3890 BFB Injection Date: 02/14/03

Instrument ID: V5 BFB Injection Time: 0933

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.3
75	30.0 - 60.0% of mass 95	46.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.6
175	5.0 - 9.0% of mass 174	5.6 (6.9)1
176	95.0 - 101.0% of mass 174	78.7 (96.5)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505V	V5S0214A	V5E3891	02/14/03	0950
02	VBLK5V	V5B0214A	V5E3892	02/14/03	1021
03	V5VLCS	V5L0214A	V5E3893	02/14/03	1054
04	SV1130406MS	B0257-15BMS	V5E3900	02/14/03	1421
05	SV1130406MSD	B0257-15BMSD	V5E3901	02/14/03	1450
06	SV1050507	B0257-05B	V5E3905	02/14/03	1646
07	SVDUP05	B0257-07B	V5E3907	02/14/03	1744
08	SV1100204	B0257-08B	V5E3908	02/14/03	1813
09	WOD-SS-110	B0257-09C	V5E3909	02/14/03	1842
10	WOD-SS-111	B0257-10C	V5E3910	02/14/03	1912
11	SV1110507	B0257-11B	V5E3911	02/14/03	1941
12	WOD-SS-112	B0257-12C	V5E3912	02/14/03	2010
13	SV1120204	B0257-13B	V5E3913	02/14/03	2039
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/14/03 Time: 0950

Lab File ID: V5E3891 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.254	0.01	8.3	20.0
Chloromethane	0.449	0.426	0.1	5.1	20.0
Vinyl Chloride	0.410	0.390	0.01	4.9	20.0
Bromomethane	0.235	0.226	0.01	3.8	20.0
Chloroethane	0.206	0.210	0.01	1.9	20.0
Trichlorofluoromethane	0.337	0.356	0.01	5.6	20.0
1,1-Dichloroethene	0.288	0.265	0.01	8.0	20.0
Acetone	0.119	0.112	0.01	5.9	20.0
Carbon Disulfide	0.803	0.853	0.01	6.2	20.0
Methylene Chloride	0.384	0.356	0.01	7.3	20.0
trans-1,2-Dichloroethene	0.299	0.277	0.01	7.4	20.0
Methyl tert-butyl ether	0.846	0.818	0.01	3.3	20.0
1,1-Dichloroethane	0.591	0.526	0.1	11.0	20.0
2-Butanone	0.172	0.179	0.01	4.1	20.0
cis-1,2-Dichloroethene	0.316	0.289	0.01	8.5	20.0
Chloroform	0.521	0.469	0.01	10.0	20.0
1,1,1-Trichloroethane	0.352	0.324	0.01	8.0	20.0
Carbon Tetrachloride	0.338	0.304	0.01	10.0	20.0
1,2-Dichloroethane	0.389	0.356	0.01	8.5	20.0
Benzene	1.241	1.125	0.01	9.3	20.0
Trichloroethene	0.319	0.292	0.01	8.5	20.0
1,2-Dichloropropane	0.336	0.305	0.01	9.2	20.0
Bromodichloromethane	0.391	0.358	0.01	8.4	20.0
cis-1,3-Dichloropropene	0.519	0.486	0.01	6.4	20.0
4-Methyl-2-pentanone	0.335	0.345	0.01	3.0	20.0
Toluene	1.206	1.113	0.01	7.7	20.0
trans-1,3-Dichloropropene	0.466	0.433	0.01	7.1	20.0
1,1,2-Trichloroethane	0.261	0.236	0.01	9.6	20.0
Tetrachloroethene	0.322	0.282	0.01	12.4	20.0
2-Hexanone	0.297	0.312	0.01	5.0	20.0
Dibromochloromethane	0.408	0.384	0.01	5.9	20.0
1,2-Dibromoethane	0.371	0.350	0.01	5.7	20.0
Chlorobenzene	1.071	0.989	0.3	7.6	20.0
Ethylbenzene	0.530	0.487	0.01	8.1	20.0
m,p-Xylene	0.655	0.612	0.01	6.6	20.0
o-Xylene	0.647	0.604	0.01	6.6	20.0
Xylene (Total)	0.652	0.610	0.01	6.4	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/14/03 Time: 0950

Lab File ID: V5E3891 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.050	0.01	4.5	20.0
Bromoform	0.280	0.263	0.1	6.1	20.0
Isopropylbenzene	1.622	1.501	0.01	7.4	20.0
1,1,2,2-Tetrachloroethane	1.053	0.990	0.3	6.0	20.0
1,3,5-Trimethylbenzene	2.819	2.596	0.01	7.9	20.0
1,2,4-Trimethylbenzene	2.863	2.675	0.01	6.6	20.0
1,3-Dichlorobenzene	1.661	1.528	0.01	8.0	20.0
1,4-Dichlorobenzene	1.683	1.536	0.01	8.7	20.0
1,2-Dichlorobenzene	1.574	1.458	0.01	7.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.148	0.01	6.3	20.0
1,2,4-Trichlorobenzene	0.869	0.816	0.01	6.1	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.246	0.01	1.6	20.0
Methyl Acetate	0.307	0.313	0.01	2.0	20.0
Cyclohexane	0.496	0.491	0.01	1.0	20.0
Methylcyclohexane	0.488	0.473	0.01	3.1	20.0
Dibromofluoromethane	0.290	0.282	0.01	2.8	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.01	3.4	20.0
Toluene-d8	1.188	1.163	0.01	2.1	20.0
Bromofluorobenzene	0.490	0.493	0.01	0.6	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3930 BFB Injection Date: 02/15/03

Instrument ID: V5 BFB Injection Time: 0931

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.2
75	30.0 - 60.0% of mass 95	46.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	83.9
175	5.0 - 9.0% of mass 174	5.6 (6.7)1
176	95.0 - 101.0% of mass 174	81.4 (97.0)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505X	V5S0215A	V5E3931	02/15/03	0948
02	VBLK5X	V5B0215A	V5E3932	02/15/03	1021
03	V5XLCS	V5L0215A	V5E3933	02/15/03	1057
04	WOD-SS-109	B0257-02C	V5E3935	02/15/03	1213
05	SV1090608	B0257-03B	V5E3936	02/15/03	1242
06	WOD-SS-105	B0257-04C	V5E3937	02/15/03	1311
07	SV1011617	B0257-06B	V5E3939	02/15/03	1409
08	SVDUP05RE	B0257-07BRE	V5E3940	02/15/03	1438
09	WOD-SS-110RE	B0257-09CRE	V5E3941	02/15/03	1507
10	WOD-SS-111RE	B0257-10CRE	V5E3942	02/15/03	1536
11	SV1110507RE	B0257-11BRE	V5E3943	02/15/03	1605
12	WOD-SS-113	B0257-14C	V5E3944	02/15/03	1634
13	SV1140406	B0257-17B	V5E3947	02/15/03	1801
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/15/03 Time: 0948

Lab File ID: V5E3931 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.247	0.01	10.8	20.0
Chloromethane	0.449	0.437	0.1	2.7	20.0
Vinyl Chloride	0.410	0.408	0.01	0.5	20.0
Bromomethane	0.235	0.241	0.01	2.6	20.0
Chloroethane	0.206	0.221	0.01	7.3	20.0
Trichlorofluoromethane	0.337	0.355	0.01	5.3	20.0
1,1-Dichloroethene	0.288	0.268	0.01	6.9	20.0
Acetone	0.119	0.110	0.01	7.6	20.0
Carbon Disulfide	0.803	0.827	0.01	3.0	20.0
Methylene Chloride	0.384	0.341	0.01	11.2	20.0
trans-1,2-Dichloroethene	0.299	0.274	0.01	8.4	20.0
Methyl tert-butyl ether	0.846	0.840	0.01	0.7	20.0
1,1-Dichloroethane	0.591	0.536	0.1	9.3	20.0
2-Butanone	0.172	0.163	0.01	5.2	20.0
cis-1,2-Dichloroethene	0.316	0.292	0.01	7.6	20.0
Chloroform	0.521	0.477	0.01	8.4	20.0
1,1,1-Trichloroethane	0.352	0.303	0.01	13.9	20.0
Carbon Tetrachloride	0.338	0.291	0.01	13.9	20.0
1,2-Dichloroethane	0.389	0.357	0.01	8.2	20.0
Benzene	1.241	1.132	0.01	8.8	20.0
Trichloroethene	0.319	0.285	0.01	10.6	20.0
1,2-Dichloropropane	0.336	0.314	0.01	6.5	20.0
Bromodichloromethane	0.391	0.360	0.01	7.9	20.0
cis-1,3-Dichloropropene	0.519	0.486	0.01	6.4	20.0
4-Methyl-2-pentanone	0.335	0.317	0.01	5.4	20.0
Toluene	1.206	1.109	0.01	8.0	20.0
trans-1,3-Dichloropropene	0.466	0.430	0.01	7.7	20.0
1,1,2-Trichloroethane	0.261	0.236	0.01	9.6	20.0
Tetrachloroethene	0.322	0.273	0.01	15.2	20.0
2-Hexanone	0.297	0.296	0.01	0.3	20.0
Dibromochloromethane	0.408	0.383	0.01	6.1	20.0
1,2-Dibromoethane	0.371	0.347	0.01	6.5	20.0
Chlorobenzene	1.071	0.987	0.3	7.8	20.0
Ethylbenzene	0.530	0.488	0.01	7.9	20.0
m,p-Xylene	0.655	0.609	0.01	7.0	20.0
o-Xylene	0.647	0.611	0.01	5.6	20.0
Xylene (Total)	0.652	0.610	0.01	6.4	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/15/03 Time: 0948

Lab File ID: V5E3931 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.054	0.01	4.2	20.0
Bromoform	0.280	0.260	0.1	7.1	20.0
Isopropylbenzene	1.622	1.484	0.01	8.5	20.0
1,1,2,2-Tetrachloroethane	1.053	0.953	0.3	9.5	20.0
1,3,5-Trimethylbenzene	2.819	2.613	0.01	7.3	20.0
1,2,4-Trimethylbenzene	2.863	2.697	0.01	5.8	20.0
1,3-Dichlorobenzene	1.661	1.561	0.01	6.0	20.0
1,4-Dichlorobenzene	1.683	1.573	0.01	6.5	20.0
1,2-Dichlorobenzene	1.574	1.489	0.01	5.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.143	0.01	9.5	20.0
1,2,4-Trichlorobenzene	0.869	0.852	0.01	2.0	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.252	0.01	4.1	20.0
Methyl Acetate	0.307	0.296	0.01	3.6	20.0
Cyclohexane	0.496	0.488	0.01	1.6	20.0
Methylcyclohexane	0.488	0.478	0.01	2.0	20.0
Dibromofluoromethane	0.290	0.293	0.01	1.0	20.0
1,2-Dichloroethane-d4	0.058	0.061	0.01	5.2	20.0
Toluene-d8	1.188	1.191	0.01	0.2	20.0
Bromofluorobenzene	0.490	0.500	0.01	2.0	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V5E3960 BFB Injection Date: 02/17/03

Instrument ID: V5 BFB Injection Time: 1055

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.7
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.5 (6.9)1
176	95.0 - 101.0% of mass 174	76.5 (95.2)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505Y	V5S0217A	V5E3962	02/17/03	1144
02	VBLK5Y	V5B0217A	V5E3963	02/17/03	1214
03	V5YLCS	V5L0217A	V5E3964	02/17/03	1244
04	SV1050507RE	B0257-05BRE	V5E3965	02/17/03	1317
05	SV1130406	B0257-15B	V5E3966	02/17/03	1347
06	WOD-SS-114	B0257-16C	V5E3967	02/17/03	1416
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.223	0.01	19.5	20.0
Chloromethane	0.449	0.392	0.1	12.7	20.0
Vinyl Chloride	0.410	0.376	0.01	8.3	20.0
Bromomethane	0.235	0.215	0.01	8.5	20.0
Chloroethane	0.206	0.202	0.01	1.9	20.0
Trichlorofluoromethane	0.337	0.332	0.01	1.5	20.0
1,1-Dichloroethene	0.288	0.243	0.01	15.6	20.0
Acetone	0.119	0.106	0.01	10.9	20.0
Carbon Disulfide	0.803	0.770	0.01	4.1	20.0
Methylene Chloride	0.384	0.313	0.01	18.5	20.0
trans-1,2-Dichloroethene	0.299	0.258	0.01	13.7	20.0
Methyl tert-butyl ether	0.846	0.856	0.01	1.2	20.0
1,1-Dichloroethane	0.591	0.500	0.1	15.4	20.0
2-Butanone	0.172	0.174	0.01	1.2	20.0
cis-1,2-Dichloroethene	0.316	0.275	0.01	13.0	20.0
Chloroform	0.521	0.440	0.01	15.5	20.0
1,1,1-Trichloroethane	0.352	0.291	0.01	17.3	20.0
Carbon Tetrachloride	0.338	0.280	0.01	17.2	20.0
1,2-Dichloroethane	0.389	0.333	0.01	14.4	20.0
Benzene	1.241	1.060	0.01	14.6	20.0
Trichloroethene	0.319	0.273	0.01	14.4	20.0
1,2-Dichloropropane	0.336	0.293	0.01	12.8	20.0
Bromodichloromethane	0.391	0.339	0.01	13.3	20.0
cis-1,3-Dichloropropene	0.519	0.461	0.01	11.2	20.0
4-Methyl-2-pentanone	0.335	0.351	0.01	4.8	20.0
Toluene	1.206	1.034	0.01	14.3	20.0
trans-1,3-Dichloropropene	0.466	0.408	0.01	12.4	20.0
1,1,2-Trichloroethane	0.261	0.227	0.01	13.0	20.0
Tetrachloroethene	0.322	0.276	0.01	14.3	20.0
2-Hexanone	0.297	0.340	0.01	14.5	20.0
Dibromochloromethane	0.408	0.382	0.01	6.4	20.0
1,2-Dibromoethane	0.371	0.342	0.01	7.8	20.0
Chlorobenzene	1.071	0.964	0.3	10.0	20.0
Ethylbenzene	0.530	0.475	0.01	10.4	20.0
m,p-Xylene	0.655	0.592	0.01	9.6	20.0
o-Xylene	0.647	0.578	0.01	10.7	20.0
Xylene (Total)	0.652	0.587	0.01	10.0	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	0.987	0.01	10.3	20.0
Bromoform	0.280	0.264	0.1	5.7	20.0
Isopropylbenzene	1.622	1.423	0.01	12.3	20.0
1,1,2,2-Tetrachloroethane	1.053	0.941	0.3	10.6	20.0
1,3,5-Trimethylbenzene	2.819	2.381	0.01	15.5	20.0
1,2,4-Trimethylbenzene	2.863	2.448	0.01	14.5	20.0
1,3-Dichlorobenzene	1.661	1.445	0.01	13.0	20.0
1,4-Dichlorobenzene	1.683	1.450	0.01	13.8	20.0
1,2-Dichlorobenzene	1.574	1.364	0.01	13.3	20.0
1,2-Dibromo-3-chloropropane	0.158	0.136	0.01	13.9	20.0
1,2,4-Trichlorobenzene	0.869	0.728	0.01	16.2	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.232	0.01	4.1	20.0
Methyl Acetate	0.307	0.318	0.01	3.6	20.0
Cyclohexane	0.496	0.458	0.01	7.7	20.0
Methylcyclohexane	0.488	0.480	0.01	1.6	20.0
Dibromofluoromethane	0.290	0.283	0.01	2.4	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.01	3.4	20.0
Toluene-d8	1.188	1.192	0.01	0.3	20.0
Bromofluorobenzene	0.490	0.491	0.01	0.2	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V6C5020 BFB Injection Date: 02/20/03

Instrument ID: V6 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	6.8 (6.9)1
176	95.0 - 101.0% of mass 174	97.3 (99.7)1
177	5.0 - 9.0% of mass 176	7.6 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506H	V6S0220A	V6C5021	02/20/03	0952
02	VSTD0056H	V6S0220B	V6C5022	02/20/03	1042
03	VSTD2006H	V6S0220D	V6C5024	02/20/03	1141
04	VSTD1006H	V6S0220E	V6C5025	02/20/03	1212
05	VSTD0206H	V6S0220F	V6C5026	02/20/03	1242
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.954	1.080	1.091	1.074	1.061	1.052	5.3
Bromoform	*	0.213	0.231	0.257	0.231	0.229	0.232	6.8*
Isopropylbenzene		1.532	1.587	1.452	1.479	1.396	1.489	4.9
1,1,2,2-Tetrachloroethane	*	0.549	0.600	0.643	0.553	0.542	0.577	7.5*
1,3,5-Trimethylbenzene		2.373	2.532	2.271	2.375	2.311	2.372	4.2
1,2,4-Trimethylbenzene		2.470	2.594	2.412	2.400	2.316	2.438	4.2
1,3-Dichlorobenzene		1.469	1.567	1.477	1.493	1.482	1.498	2.7
1,4-Dichlorobenzene		1.583	1.616	1.529	1.504	1.461	1.539	4.0
1,2-Dichlorobenzene		1.360	1.468	1.427	1.398	1.381	1.407	3.0
1,2-Dibromo-3-chloropropane		0.106	0.096	0.116	0.092	0.088	0.100	11.1
1,2,4-Trichlorobenzene		0.957	0.967	0.925	0.901	0.912	0.932	3.1
1,1,2-Trichlo-1,2,2-trifluor		0.467	0.504	0.378	0.451	0.423	0.445	10.6
Methyl Acetate		0.194	0.197	0.202	0.167	0.155	0.183	11.3
Cyclohexane		0.415	0.407	0.362	0.411	0.402	0.399	5.4
Methylcyclohexane		0.448	0.458	0.424	0.468	0.465	0.453	3.9
Dibromofluoromethane		0.204	0.266	0.277	0.271	0.262	0.256	11.6
1,2-Dichloroethane-d4		0.047	0.060	0.065	0.058	0.057	0.057	11.1
Toluene-d8		0.916	1.191	1.162	1.179	1.055	1.101	10.6
Bromofluorobenzene		0.345	0.421	0.444	0.432	0.413	0.411	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: V6C5080 BFB Injection Date: 02/23/03

Instrument ID: V6 BFB Injection Time: 0904

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.2
75	30.0 - 60.0% of mass 95	57.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	92.0
175	5.0 - 9.0% of mass 174	6.2 (6.7)1
176	95.0 - 101.0% of mass 174	89.9 (97.7)1
177	5.0 - 9.0% of mass 176	5.3 (5.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506J	V6S0223A	V6C5082	02/23/03	0951
02	VBLK6J	V6B0223A	V6C5083	02/23/03	1022
03	V6JLCS	V6L0223A	V6C5084	02/23/03	1053
04	TB-021103	B0257-01A	V6C5096	02/23/03	1642
05	RB-021103	B0257-18A	V6C5097	02/23/03	1710
06					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V6 Calibration Date: 02/23/03 Time: 0951

Lab File ID: V6C5082 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.215	0.270	0.01	25.6	20.0	<-
Chloromethane	0.393	0.405	0.1	3.0	20.0	
Vinyl Chloride	0.432	0.452	0.01	4.6	20.0	
Bromomethane	0.380	0.403	0.01	6.0	20.0	
Chloroethane	0.295	0.329	0.01	11.5	20.0	
Trichlorofluoromethane	0.658	0.728	0.01	10.6	20.0	
1,1-Dichloroethene	0.440	0.428	0.01	2.7	20.0	
Acetone	0.099	0.072	0.01	27.3	20.0	<-
Carbon Disulfide	0.762	0.843	0.01	10.6	20.0	
Methylene Chloride	0.276	0.268	0.01	2.9	20.0	
trans-1,2-Dichloroethene	0.279	0.279	0.01	0.0	20.0	
Methyl tert-butyl ether	0.755	0.659	0.01	12.7	20.0	
1,1-Dichloroethane	0.456	0.490	0.1	7.4	20.0	
2-Butanone	0.088	0.073	0.01	17.0	20.0	
cis-1,2-Dichloroethene	0.289	0.293	0.01	1.4	20.0	
Chloroform	0.489	0.509	0.01	4.1	20.0	
1,1,1-Trichloroethane	0.387	0.415	0.01	7.2	20.0	
Carbon Tetrachloride	0.401	0.423	0.01	5.5	20.0	
1,2-Dichloroethane	0.376	0.367	0.01	2.4	20.0	
Benzene	1.025	1.093	0.01	6.6	20.0	
Trichloroethene	0.296	0.298	0.01	0.7	20.0	
1,2-Dichloropropane	0.257	0.265	0.01	3.1	20.0	
Bromodichloromethane	0.371	0.373	0.01	0.5	20.0	
cis-1,3-Dichloropropene	0.423	0.424	0.01	0.2	20.0	
4-Methyl-2-pentanone	0.167	0.143	0.01	14.4	20.0	
Toluene	1.113	1.189	0.01	6.8	20.0	
trans-1,3-Dichloropropene	0.382	0.369	0.01	3.4	20.0	
1,1,2-Trichloroethane	0.215	0.204	0.01	5.1	20.0	
Tetrachloroethene	0.317	0.323	0.01	1.9	20.0	
2-Hexanone	0.136	0.117	0.01	14.0	20.0	
Dibromochloromethane	0.355	0.328	0.01	7.6	20.0	
1,2-Dibromoethane	0.282	0.256	0.01	9.2	20.0	
Chlorobenzene	0.979	1.005	0.3	2.6	20.0	
Ethylbenzene	0.509	0.536	0.01	5.3	20.0	
m,p-Xylene	0.638	0.680	0.01	6.6	20.0	
o-Xylene	0.640	0.669	0.01	4.5	20.0	
Xylene (Total)	0.639	0.677	0.01	5.9	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: V6 Calibration Date: 02/23/03 Time: 0951

Lab File ID: V6C5082 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.052	1.134	0.01	7.8	20.0	
Bromoform	0.232	0.198	0.1	14.6	20.0	
Isopropylbenzene	1.489	1.624	0.01	9.1	20.0	
1,1,2,2-Tetrachloroethane	0.577	0.509	0.3	11.8	20.0	
1,3,5-Trimethylbenzene	2.372	2.558	0.01	7.8	20.0	
1,2,4-Trimethylbenzene	2.438	2.610	0.01	7.0	20.0	
1,3-Dichlorobenzene	1.498	1.540	0.01	2.8	20.0	
1,4-Dichlorobenzene	1.539	1.581	0.01	2.7	20.0	
1,2-Dichlorobenzene	1.407	1.409	0.01	0.1	20.0	
1,2-Dibromo-3-chloropropane	0.100	0.074	0.01	26.0	20.0	<-
1,2,4-Trichlorobenzene	0.932	0.842	0.01	9.6	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.445	0.483	0.01	8.5	20.0	
Methyl Acetate	0.183	0.150	0.01	18.0	20.0	
Cyclohexane	0.399	0.471	0.01	18.0	20.0	
Methylcyclohexane	0.453	0.507	0.01	11.9	20.0	
Dibromofluoromethane	0.256	0.265	0.01	3.5	20.0	
1,2-Dichloroethane-d4	0.057	0.055	0.01	3.5	20.0	
Toluene-d8	1.101	1.235	0.01	12.2	20.0	
Bromofluorobenzene	0.411	0.424	0.01	3.2	20.0	

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK6J	96	90	106	97	0
02	V6JLCS	106	98	110	102	0
03	TB-021103	94	89	104	92	0
04	RB-021103	93	86	106	93	0
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		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER(BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5V	100	105	101	101	0
02	V5VLCS	95	100	98	101	0
03	SV1130406MS	108	122	103	106	0
04	SV1130406MSD	110	126	102	105	0
05	SV1050507	112	133*	100	100	1
06	SVDUP05	109	130*	109	90	1
07	SV1100204	107	125	101	98	0
08	WOD-SS-110	113	133*	112	83	1
09	WOD-SS-111	112	132*	105	92	1
10	SV1110507	145*	172*	159*	53	3
11	WOD-SS-112	110	125	112	84	0
12	SV1120204	105	121	101	99	0
13	VBLK5X	95	101	96	93	0
14	V5XLCS	96	99	98	97	0
15	WOD-SS-109	101	110	109	83	0
16	SV1090608	103	116	101	99	0
17	WOD-SS-105	107	121	111	85	0
18	SV1011617	108	123	112	84	0
19	SVDUP05RE	109	128*	108	88	1
20	WOD-SS-110RE	115	144*	105	88	1
21	WOD-SS-111RE	108	130*	102	91	1
22	SV1110507RE	148*	171*	174*	48*	4
23	WOD-SS-113	108	125	103	93	0
24	SV1140406	100	115	100	95	0
25	VBLK5Y	97	100	100	91	0
26	V5YLCS	96	103	101	101	0
27	SV1050507RE	91	91	109	71	0
28	SV1130406	101	114	98	94	0
29	WOD-SS-114	104	122	110	83	0
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER(BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	61	0.0	54	88	58-131
Chloromethane	61	0.0	59	97	63-120
Vinyl Chloride	61	0.0	60	98	61-134
Bromomethane	61	0.0	57	93	10-215
Chloroethane	61	0.0	62	102	55-146
Trichlorofluoromethane	61	0.0	60	98	63-126
1,1-Dichloroethene	61	0.0	60	98	67-127
Acetone	61	7	64	93	0-154
Carbon Disulfide	61	0.0	64	105	63-126
Methylene Chloride	61	7	61	88	62-128
trans-1,2-Dichloroethen	61	0.0	61	100	76-120
Methyl tert-butyl ether	61	0.0	75	123	52-130
1,1-Dichloroethane	61	0.0	61	100	74-118
2-Butanone	61	0.0	75	123	14-154
cis-1,2-Dichloroethene	61	0.0	63	103	83-115
Chloroform	61	0.0	62	102	77-120
1,1,1-Trichloroethane	61	0.0	58	95	72-126
Carbon Tetrachloride	61	0.0	58	95	69-135
1,2-Dichloroethane	61	0.0	67	110	65-126
Benzene	61	0.0	61	100	78-121
Trichloroethene	61	0.0	60	98	75-125
1,2-Dichloropropane	61	0.0	63	103	78-117
Bromodichloromethane	61	0.0	63	103	75-118
cis-1,3-Dichloropropene	61	0.0	64	105	78-120
4-Methyl-2-pentanone	61	0.0	82	134	45-141
Toluene	61	0.0	61	100	80-126
trans-1,3-Dichloroprope	61	0.0	65	106	73-123
1,1,2-Trichloroethane	61	0.0	66	108	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	61	0.0	55	90	65-134
2-Hexanone	61	0.0	84	138*	37-136
Dibromochloromethane	61	0.0	66	108	76-115
1,2-Dibromoethane	61	0.0	70	115	72-117
Chlorobenzene	61	0.0	60	98	78-117
Ethylbenzene	61	0.0	60	98	79-129
Xylene (Total)	180	0.0	180	100	83-125
Styrene	61	0.0	53	87	83-122
Bromoform	61	0.0	68	111	67-126
Isopropylbenzene	61	0.0	58	95	80-135
1,1,2,2-Tetrachloroetha	61	0.0	71	116	70-117
1,3,5-Trimethylbenzene	61	0.0	60	98	72-133
1,2,4-Trimethylbenzene	61	0.0	61	100	73-126
1,3-Dichlorobenzene	61	0.0	60	98	75-115
1,4-Dichlorobenzene	61	0.0	60	98	72-110
1,2-Dichlorobenzene	61	0.0	62	102	78-113
1,2-Dibromo-3-chloropro	61	0.0	75	123	52-128
1,2,4-Trichlorobenzene	61	0.0	61	100	49-126
1,1,2-Trichlo-1,2,2-tri	61	0.0	66	108	70-130
Methyl Acetate	61	0.0	65	106	70-130
Cyclohexane	61	0.0	61	100	70-130
Methylcyclohexane	61	0.0	59	97	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	66	55	83	6	40	58-131
Chloromethane	66	57	86	12	40	63-120
Vinyl Chloride	66	58	88	11	40	61-134
Bromomethane	66	55	83	11	40	10-215
Chloroethane	66	63	95	7	40	55-146
Trichlorofluoromethane	66	61	92	6	40	63-126
1,1-Dichloroethene	66	60	91	7	40	67-127
Acetone	66	68	92	1	40	0-154
Carbon Disulfide	66	62	94	11	40	63-126
Methylene Chloride	66	62	83	6	40	62-128
trans-1,2-Dichloroethen	66	59	89	12	40	76-120
Methyl tert-butyl ether	66	76	115	7	40	52-130
1,1-Dichloroethane	66	61	92	8	40	74-118
2-Butanone	66	86	130	6	40	14-154
cis-1,2-Dichloroethene	66	62	94	9	40	83-115
Chloroform	66	62	94	8	40	77-120
1,1,1-Trichloroethane	66	58	88	8	40	72-126
Carbon Tetrachloride	66	58	88	8	40	69-135
1,2-Dichloroethane	66	67	102	8	40	65-126
Benzene	66	61	92	8	40	78-121
Trichloroethene	66	60	91	7	40	75-125
1,2-Dichloropropane	66	63	95	8	40	78-117
Bromodichloromethane	66	62	94	9	40	75-118
cis-1,3-Dichloropropene	66	64	97	8	40	78-120
4-Methyl-2-pentanone	66	100	152*	12	40	45-141
Toluene	66	60	91	9	40	80-126
trans-1,3-Dichloroprope	66	66	100	6	40	73-123
1,1,2-Trichloroethane	66	69	104	4	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	66	54	82	9	40	65-134
2-Hexanone	66	100	152*	10	40	37-136
Dibromochloromethane	66	67	102	6	40	76-115
1,2-Dibromoethane	66	70	106	8	40	72-117
Chlorobenzene	66	60	91	7	40	78-117
Ethylbenzene	66	59	89	10	40	79-129
Xylene (Total)	200	180	90	10	40	83-125
Styrene	66	61	92	6	40	83-122
Bromoform	66	70	106	5	40	67-126
Isopropylbenzene	66	58	88	8	40	80-135
1,1,2,2-Tetrachloroetha	66	74	112	4	40	70-117
1,3,5-Trimethylbenzene	66	59	89	10	40	72-133
1,2,4-Trimethylbenzene	66	60	91	9	40	73-126
1,3-Dichlorobenzene	66	60	91	7	40	75-115
1,4-Dichlorobenzene	66	60	91	7	40	72-110
1,2-Dichlorobenzene	66	63	95	7	40	78-113
1,2-Dibromo-3-chloropro	66	82	124	1	40	52-128
1,2,4-Trichlorobenzene	66	62	94	6	40	49-126
1,1,2-Trichlo-1,2,2-tri	66	66	100	8	40	70-130
Methyl Acetate	66	65	98	8	40	70-130
Cyclohexane	66	59	89	12	40	70-130
Methylcyclohexane	66	58	88	10	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 3 out of 100 outside limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V6JLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		58	116	48-135
Chloromethane	50		52	104	60-118
Vinyl Chloride	50		51	102	65-113
Bromomethane	50		53	106	73-122
Chloroethane	50		55	110	72-118
Trichlorofluoromethane	50		52	104	68-129
1,1-Dichloroethene	50		48	96	67-121
Acetone	50		47	94	38-161
Carbon Disulfide	50		54	108	53-137
Methylene Chloride	50		54	108	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		44	88	75-123
1,1-Dichloroethane	50		53	106	83-116
2-Butanone	50		44	88	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		53	106	89-118
1,1,1-Trichloroethane	50		53	106	81-122
Carbon Tetrachloride	50		51	102	79-125
1,2-Dichloroethane	50		50	100	83-123
Benzene	50		54	108	81-120
Trichloroethene	50		51	102	77-121
1,2-Dichloropropane	50		53	106	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		50	100	78-119
4-Methyl-2-pentanone	50		45	90	57-138
Toluene	50		54	108	81-121
trans-1,3-Dichloroprope	50		48	96	85-118
1,1,2-Trichloroethane	50		49	98	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V6JLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		49	98	73-121
2-Hexanone	50		44	88	53-145
Dibromochloromethane	50		46	92	80-124
1,2-Dibromoethane	50		45	90	80-124
Chlorobenzene	50		50	100	82-118
Ethylbenzene	50		51	102	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		52	104	77-128
Bromoform	50		44	88	77-130
Isopropylbenzene	50		53	106	58-148
1,1,2,2-Tetrachloroetha	50		45	90	76-125
1,3,5-Trimethylbenzene	50		54	108	76-116
1,2,4-Trimethylbenzene	50		53	106	77-117
1,3-Dichlorobenzene	50		51	102	80-116
1,4-Dichlorobenzene	50		51	102	80-114
1,2-Dichlorobenzene	50		50	100	81-116
1,2-Dibromo-3-chloropro	50		40	80	71-126
1,2,4-Trichlorobenzene	50		45	90	67-114
1,1,2-Trichlo-1,2,2-tri	50		54	108	70-130
Methyl Acetate	50		44	88	70-130
Cyclohexane	50		57	114	70-130
Methylcyclohexane	50		55	110	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5VLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		44	88	58-131
Chloromethane	50		46	92	63-120
Vinyl Chloride	50		48	96	61-134
Bromomethane	50		47	94	10-215
Chloroethane	50		50	100	55-146
Trichlorofluoromethane	50		49	98	63-126
1,1-Dichloroethene	50		45	90	67-127
Acetone	50		40	80	0-154
Carbon Disulfide	50		50	100	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		50	100	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		48	96	14-154
cis-1,2-Dichloroethene	50		47	94	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		44	88	72-126
Carbon Tetrachloride	50		44	88	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		45	90	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		45	90	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		45	90	73-123
1,1,2-Trichloroethane	50		44	88	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5VLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		45	90	65-134
2-Hexanone	50		51	102	37-136
Dibromochloromethane	50		47	94	76-115
1,2-Dibromoethane	50		47	94	72-117
Chlorobenzene	50		47	94	78-117
Ethylbenzene	50		47	94	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		48	96	83-122
Bromoform	50		47	94	67-126
Isopropylbenzene	50		46	92	80-135
1,1,2,2-Tetrachloroetha	50		46	92	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		46	92	73-126
1,3-Dichlorobenzene	50		47	94	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		47	94	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		51	102	70-130
Methyl Acetate	50		49	98	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		50	100	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5XLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		46	92	58-131
Chloromethane	50		47	94	63-120
Vinyl Chloride	50		49	98	61-134
Bromomethane	50		49	98	10-215
Chloroethane	50		51	102	55-146
Trichlorofluoromethane	50		50	100	63-126
1,1-Dichloroethene	50		48	96	67-127
Acetone	50		45	90	0-154
Carbon Disulfide	50		51	102	63-126
Methylene Chloride	50		46	92	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		51	102	52-130
1,1-Dichloroethane	50		47	94	74-118
2-Butanone	50		53	106	14-154
cis-1,2-Dichloroethene	50		48	96	83-115
Chloroform	50		46	92	77-120
1,1,1-Trichloroethane	50		45	90	72-126
Carbon Tetrachloride	50		47	94	69-135
1,2-Dichloroethane	50		47	94	65-126
Benzene	50		47	94	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		48	96	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		51	102	45-141
Toluene	50		47	94	80-126
trans-1,3-Dichloroprope	50		48	96	73-123
1,1,2-Trichloroethane	50		47	94	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5XLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		47	94	65-134
2-Hexanone	50		55	110	37-136
Dibromochloromethane	50		49	98	76-115
1,2-Dibromoethane	50		50	100	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		49	98	67-126
Isopropylbenzene	50		48	96	80-135
1,1,2,2-Tetrachloroetha	50		50	100	70-117
1,3,5-Trimethylbenzene	50		48	96	72-133
1,2,4-Trimethylbenzene	50		48	96	73-126
1,3-Dichlorobenzene	50		49	98	75-115
1,4-Dichlorobenzene	50		48	96	72-110
1,2-Dichlorobenzene	50		48	96	78-113
1,2-Dibromo-3-chloropro	50		53	106	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		55	110	70-130
Cyclohexane	50		49	98	70-130
Methylcyclohexane	50		51	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		44	88	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		46	92	67-127
Acetone	50		41	82	0-154
Carbon Disulfide	50		48	96	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		49	98	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		49	98	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		43	86	72-126
Carbon Tetrachloride	50		45	90	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		46	92	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		52	104	37-136
Dibromochloromethane	50		49	98	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		49	98	67-126
Isopropylbenzene	50		47	94	80-135
1,1,2,2-Tetrachloroetha	50		49	98	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		49	98	52-128
1,2,4-Trichlorobenzene	50		49	98	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		50	100	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		48	96	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): V5E3891 Date Analyzed: 02/14/03

Instrument ID: V5 Time Analyzed: 0950

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	905820	6.25	698497	9.47	368112	12.21
	UPPER LIMIT	1811640	6.75	1396994	9.97	736224	12.71
	LOWER LIMIT	452910	5.75	349249	8.97	184056	11.71
	EPA SAMPLE NO.						
01	VBLK5V	940256	6.25	711882	9.47	326455	12.21
02	V5VLCS	871829	6.25	658759	9.47	347757	12.22
03	SV1130406MS	741089	6.25	579036	9.47	300171	12.22
04	SV1130406MSD	777743	6.25	613916	9.48	313654	12.21
05	SV1050507	679104	6.26	540134	9.48	228997	12.21
06	SVDUP05	793716	6.25	553639	9.47	197558	12.22
07	SV1100204	789735	6.25	614465	9.47	272120	12.22
08	WOD-SS-110	728241	6.25	485122	9.47	141772*	12.21
09	WOD-SS-111	735751	6.26	543796	9.47	196528	12.21
10	SV1110507	411738*	6.25	159085*	9.47	22359*	12.22
11	WOD-SS-112	732632	6.25	489081	9.47	150746*	12.21
12	SV1120204	822099	6.25	620086	9.47	276352	12.22
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): V5E3931 Date Analyzed: 02/15/03

Instrument ID: V5 Time Analyzed: 0948

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	917665	6.25	711077	9.47	374227	12.21
	UPPER LIMIT	1835330	6.75	1422154	9.97	748454	12.71
	LOWER LIMIT	458833	5.75	355539	8.97	187114	11.71
	EPA SAMPLE NO.						
01	VBLK5X	974217	6.25	750903	9.47	347587	12.22
02	V5XLCS	835906	6.25	631839	9.47	325453	12.21
03	WOD-SS-109	897975	6.25	605781	9.47	191774	12.22
04	SV1090608	937772	6.25	720567	9.47	328422	12.22
05	WOD-SS-105	788362	6.25	534031	9.47	166196*	12.21
06	SV1011617	696095	6.26	455529	9.48	122298*	12.21
07	SVDUP05RE	735283	6.25	511512	9.47	167505*	12.22
08	WOD-SS-110RE	619406	6.25	436232	9.47	143741*	12.21
09	WOD-SS-111RE	695449	6.25	519448	9.47	194176	12.22
10	SV1110507RE	434514*	6.26	136689*	9.48	17428*	12.21
11	WOD-SS-113	784387	6.26	567367	9.47	217781	12.22
12	SV1140406	546642	6.25	422604	9.47	179485*	12.21
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

<10% MA

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): V5E3962 Date Analyzed: 02/17/03

Instrument ID: V5 Time Analyzed: 1144

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	957125	6.25	718869	9.47	378053	12.21
	UPPER LIMIT	1914250	6.75	1437738	9.97	756106	12.71
	LOWER LIMIT	478563	5.75	359435	8.97	189027	11.71
	EPA SAMPLE NO.						
01	VBLK5Y	925512	6.25	703213	9.47	304493	12.22
02	V5YLCS	903742	6.25	674995	9.47	351616	12.21
03	SV1050507RE	140595*	6.25	91678*	9.47	21863*	12.22
04	SV1130406	949161	6.25	733812	9.47	326936	12.22
05	WOD-SS-114	828349	6.25	536660	9.48	165191*	12.21
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07							
08							
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20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): V6C5082 Date Analyzed: 02/23/03

Instrument ID: V6 Time Analyzed: 0951

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1484309	7.03	1187394	10.77	662084	13.59
	UPPER LIMIT	2968618	7.53	2374788	11.27	1324168	14.09
	LOWER LIMIT	742155	6.53	593697	10.27	331042	13.09
	EPA SAMPLE NO.						
01	VBLK6J	1542095	7.03	1191383	10.77	624209	13.59
02	V6JLCS	1373186	7.03	1115756	10.77	610038	13.59
03	TB-021103	1275083	7.04	1000742	10.77	523632	13.59
04	RB-021103	1283085	7.03	995205	10.77	521928	13.59
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20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030215.B\V5E3939.D
Report Date: 07-Mar-2003 15:13

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030215.B\V5E3939.D
Lab Smp Id: B0257-06B Client Smp ID: SV1011617
Inj Date : 15-FEB-2003 14:09
Operator : AN Inst ID: v5.i
Smp Info : TETRA,B0257-06B,SV1011617,V5B0215A,,B0257
Misc Info : 12-FEB-03,,,,,,,5.1,,12
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030215.B\v58260H.m
Meth Date : 07-Mar-2003 15:12 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	5.100	Weight of sample (g)
M	12.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
9	Acetone	43	3.409	3.413	(0.545)	48707	29.3591	33
14	Methylene Chloride	84	3.842	3.856	(0.614)	25665	4.79886	5(a)
23	cis-1,2-Dichloroethene	96	5.113	5.117	(0.817)	39951	9.09049	10(a)
22	2-Butanone	43	5.113	5.117	(0.817)	14416	6.01463	7(a)
$ 30	Dibromofluoromethane	113	5.576	5.580	(0.891)	218116	53.9645	60
31	1,1,1-Trichloroethane	97	5.615	5.619	(0.898)	41458	8.44679	9(a)
$ 35	1,2-Dichloroethane-d4	102	5.911	5.915	(0.945)	50188	61.6024	69
* 38	Fluorobenzene	96	6.255	6.250	(1.000)	696095	50.0000	
114	Methylcyclohexane	83	6.837	6.831	(1.093)	13293	1.95544	2(aQ)
$ 47	Toluene-d8	98	7.881	7.885	(0.832)	605879	55.9729	62
48	Toluene	91	7.959	7.954	(1.272)	938505	55.8795	62
53	Tetrachloroethene	164	8.560	8.554	(0.903)	131488	44.7368	50
* 57	Chlorobenzene-d5	117	9.476	9.470	(1.000)	455529	50.0000	
60	Ethylbenzene	106	9.624	9.628	(1.016)	37472	7.76591	9(a)
61	m,p-Xylene	106	9.752	9.756	(1.029)	102649	17.1917	19

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0257
SUBJECT	VOA		
BASED ON	8260B	DRAWING NUMBER	
BY SCS	CHECKED BY	APPROVED BY	DATE

FTA-SV-101-1617 (B0757-06B) 2/15/03

Toluene 62 ug/kg

$$\frac{(938505\ \text{area})(250\ \text{ng})(1)}{(696095\ \text{area})(1.206)(5.1\ \text{g})(0.88)} = 62.27\ \text{ng/g}$$

$\simeq 62$ ug/kg

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: MB-5612

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1908

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2R

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: MB-5612

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D1908

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 02/19/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: MB-5791

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2461

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: MB-5791

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2461

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U

(1) - Cannot be separated from Diphenylamine

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D1732 DFTPP Injection Date: 02/14/03

Instrument ID: S2 DFTPP Injection Time: 1250

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	46.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	22.7
365	Greater than 1.0% of mass 198	2.49
441	Present, but less than mass 443	12.2
442	40.0 - 99.9% of mass 198	73.1
443	17.0 - 23.0% of mass 442	14.2 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502L	SS0214A	S2D1733	02/14/03	1311
02	SSTD1602L	SS0214B	S2D1734	02/14/03	1358
03	SSTD0102L	SS0214C	S2D1735	02/14/03	1441
04	SSTD0202L	SS0214D	S2D1736	02/14/03	1527
05	SSTD0802L	SS0214E	S2D1737	02/14/03	1614
06	SSTD1202L	SS0214F	S2D1738	02/14/03	1658
07					
08					
09					
10					
11					
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17					
18					
19					
20					
21					
22					

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF10 =S2D1735 RRF20 =S2D1736
RRF50 =S2D1733 RRF80 =S2D1737 RRF120=S2D1738

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.802		1.744	1.696	1.736			*
bis(2-Chloroethyl)Ether	*	1.428		1.345	1.267	1.298			*
2-Chlorophenol	*	1.395		1.326	1.284	1.302			*
2-Methylphenol	*	1.268		1.197	1.146	1.179			*
2,2'-oxybis(1-Chloropropane)	*	2.071		1.940	1.793	1.812			*
4-Methylphenol	*	1.299		1.258	1.166	1.241			*
N-Nitroso-di-n-propylamine	*	0.831		0.790	0.724	0.756			*
Hexachloroethane	*	0.559		0.518	0.510	0.514			*
Nitrobenzene	*	0.429		0.396	0.394	0.406			*
Isophorone	*	0.739		0.700	0.695	0.708			*
2-Nitrophenol	*	0.232		0.221	0.232	0.236			*
2,4-Dimethylphenol	*	0.335		0.334	0.344	0.362			*
2,4-Dichlorophenol	*	0.318		0.303	0.313	0.318			*
Naphthalene	*	1.100		1.020	1.015	1.012			*
4-Chloroaniline	*	0.436		0.380	0.402	0.408			*
bis(2-Chloroethoxy)methane	*	0.478		0.442	0.436	0.449			*
Hexachlorobutadiene	*	0.173		0.162	0.168	0.166			*
4-Chloro-3-Methylphenol	*	0.325		0.320	0.329	0.343			*
2-Methylnaphthalene	*	0.735		0.684	0.686	0.698			*
Hexachlorocyclopentadiene	*	0.160		0.199	0.266	0.270			*
2,4,6-Trichlorophenol	*	0.366		0.364	0.387	0.392			*
2,4,5-Trichlorophenol	*		0.429	0.411	0.434	0.440			*
2-Chloronaphthalene	*	1.183		1.096	1.117	1.121			*
2-Nitroaniline	*		0.400	0.380	0.379	0.398			*
Dimethylphthalate	*	1.408		1.334	1.378	1.386			*
Acenaphthylene	*	1.949		1.788	1.841	1.832			*
2,6-Dinitrotoluene	*	0.344		0.342	0.360	0.369			*
3-Nitroaniline	*		0.376	0.360	0.374	0.382			*
Acenaphthene	*	1.193		1.110	1.116	1.114			*
2,4-Dinitrophenol	*		0.066	0.070	0.179	0.207			*
4-Nitrophenol	*		0.148	0.150	0.166	0.173			*
Dibenzofuran	*	1.706		1.593	1.608	1.605			*
2,4-Dinitrotoluene	*	0.431		0.430	0.456	0.463			*
Diethylphthalate	*	1.384		1.294	1.344	1.355			*
4-Chlorophenyl-phenylether	*	0.627		0.592	0.603	0.589			*
Fluorene	*	1.328		1.239	1.230	1.194			*
4-Nitroaniline	*		0.403	0.355	0.359	0.371			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF10 =S2D1735 RRF20 =S2D1736
RRF50 =S2D1733 RRF80 =S2D1737 RRF120=S2D1738

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.107	0.100	0.170	0.183			*
N-Nitrosodiphenylamine (1)	*	0.560		0.528	0.538	0.557			*
4-Bromophenyl-phenylether	*	0.231		0.215	0.221	0.225			*
Hexachlorobenzene	*	0.242		0.225	0.236	0.236			*
Pentachlorophenol	*		0.083	0.101	0.139	0.148			*
Phenanthrene	*	1.111		1.012	1.029	1.058			*
Anthracene	*	1.137		1.006	1.020	1.054			*
Di-n-butylphthalate	*	1.479		1.360	1.351	1.363			*
Fluoranthene	*	1.152		1.050	1.090	1.079			*
Pyrene	*	1.368		1.276	1.212	1.287			*
Butylbenzylphthalate	*	0.677		0.638	0.634	0.667			*
3,3'-Dichlorobenzidine	*	0.436		0.402	0.424	0.437			*
Benzo(a)anthracene	*	1.160		1.055	1.063	1.112			*
Chrysene	*	1.044		0.970	0.960	0.980			*
bis(2-Ethylhexyl)phthalate	*	0.965		0.896	0.883	0.897			*
Di-n-octylphthalate	*	2.505		2.291	2.261	2.330			*
Benzo(b)fluoranthene	*	1.601		1.547	1.614	1.607			*
Benzo(k)fluoranthene	*	1.482		1.347	1.341	1.467			*
Benzo(a)pyrene	*	1.431		1.328	1.379	1.442			*
Indeno(1,2,3-cd)pyrene	*	1.420		1.448	1.501	1.595			*
Dibenzo(a,h)anthracene	*	1.327		1.352	1.375	1.438			*
Benzo(g,h,i)perylene	*	1.315		1.330	1.359	1.424			*
Nitrobenzene-d5		0.436		0.408	0.410	0.420			*
2-Fluorobiphenyl	*	1.388		1.291	1.308	1.316			*
Terphenyl-d14	*	0.910		0.856	0.840	0.877			*
Phenol-d5	*	1.641		1.579	1.540	1.590			*
2-Fluorophenol	*	1.278		1.164	1.224	1.254			*
2,4,6-Tribromophenol	*	0.108		0.111	0.114	0.117			*
2-Chlorophenol-d4	*	1.354		1.269	1.255	1.282			*
1,2-Dichlorobenzene-d4	*	0.878		0.826	0.816	0.831			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF160=S2D1734

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.662					1.728	3.1*
bis(2-Chloroethyl)Ether	* 1.245					1.317	5.5*
2-Chlorophenol	* 1.243					1.310	4.3*
2-Methylphenol	* 1.068					1.172	6.2*
2,2'-oxybis(1-Chloropropane)	* 1.731					1.869	7.3*
4-Methylphenol	* 1.176					1.228	4.6*
N-Nitroso-di-n-propylamine	* 0.468					0.714	20.1*
Hexachloroethane	* 0.483					0.517	5.3*
Nitrobenzene	* 0.398					0.405	3.6*
Isophorone	* 0.693					0.707	2.7*
2-Nitrophenol	* 0.233					0.231	2.6*
2,4-Dimethylphenol	* 0.363					0.348	4.1*
2,4-Dichlorophenol	* 0.304					0.311	2.3*
Naphthalene	* 0.956					1.021	5.0*
4-Chloroaniline	* 0.393					0.404	5.2*
bis(2-Chloroethoxy)methane	* 0.434					0.448	4.0*
Hexachlorobutadiene	* 0.159					0.166	3.3*
4-Chloro-3-Methylphenol	* 0.330					0.329	2.6*
2-Methylnaphthalene	* 0.644					0.689	4.8*
Hexachlorocyclopentadiene	* 0.274					0.234	22.1*
2,4,6-Trichlorophenol	* 0.391					0.380	3.6*
2,4,5-Trichlorophenol	* 0.398					0.422	4.1*
2-Chloronaphthalene	* 1.102					1.124	3.1*
2-Nitroaniline	* 0.387					0.389	2.5*
Dimethylphthalate	* 1.320					1.365	2.7*
Acenaphthylene	* 1.750					1.832	4.1*
2,6-Dinitrotoluene	* 0.354					0.354	3.1*
3-Nitroaniline	* 0.362					0.371	2.6*
Acenaphthene	* 1.063					1.119	4.2*
2,4-Dinitrophenol	* 0.173					0.139	47.2*
4-Nitrophenol	* 0.159					0.159	6.7*
Dibenzofuran	* 1.510					1.604	4.3*
2,4-Dinitrotoluene	* 0.409					0.438	5.0*
Diethylphthalate	* 1.229					1.321	4.6*
4-Chlorophenyl-phenylether	* 0.530					0.588	6.1*
Fluorene	* 1.070					1.212	7.7*
4-Nitroaniline	* 0.337					0.365	6.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 02/14/03 02/14/03

Calibration Time(s): 1311 1658

LAB FILE ID: RRF160=S2D1734

COMPOUND		RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	*	0.171						0.146	27.0*
N-Nitrosodiphenylamine (1)	*	0.561						0.549	2.7*
4-Bromophenyl-phenylether	*	0.226						0.224	2.6*
Hexachlorobenzene	*	0.233						0.234	2.6*
Pentachlorophenol	*	0.148						0.124	24.2*
Phenanthrene	*	1.020						1.046	3.9*
Anthracene	*	1.012						1.046	5.2*
Di-n-butylphthalate	*	1.268						1.364	5.5*
Fluoranthene	*	1.022						1.079	4.5*
Pyrene	*	1.223						1.273	4.9*
Butylbenzylphthalate	*	0.643						0.652	2.9*
3,3'-Dichlorobenzidine	*	0.432						0.426	3.4*
Benzo(a)anthracene	*	1.078						1.094	3.9*
Chrysene	*	0.955						0.982	3.7*
bis(2-Ethylhexyl)phthalate	*	0.854						0.899	4.5*
Di-n-octylphthalate	*	2.176						2.313	5.3*
Benzo(b)fluoranthene	*	1.612						1.596	1.7*
Benzo(k)fluoranthene	*	1.368						1.401	4.9*
Benzo(a)pyrene	*	1.411						1.398	3.3*
Indeno(1,2,3-cd)pyrene	*	1.547						1.502	4.8*
Dibenzo(a,h)anthracene	*	1.451						1.389	3.9*
Benzo(g,h,i)perylene	*	1.439						1.373	4.0*
Nitrobenzene-d5		0.418						0.418	2.7*
2-Fluorobiphenyl	*	1.281						1.317	3.2*
Terphenyl-d14	*	0.836						0.864	3.5*
Phenol-d5	*	1.538						1.578	2.7*
2-Fluorophenol	*	1.204						1.225	3.6*
2,4,6-Tribromophenol	*	0.116						0.113	3.4*
2-Chlorophenol-d4	*	1.259						1.284	3.2*
1,2-Dichlorobenzene-d4	*	0.777						0.826	4.4*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D1906 DFTPP Injection Date: 02/19/03

Instrument ID: S2 DFTPP Injection Time: 1410

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	40.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	49.0
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	44.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	23.4
365	Greater than 1.0% of mass 198	2.65
441	Present, but less than mass 443	4.6
442	40.0 - 99.9% of mass 198	71.7
443	17.0 - 23.0% of mass 442	13.7 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502U	SS0219B	S2D1907	02/19/03	1431
02	SBLK2R	MB-5612	S2D1908	02/19/03	1514
03	S2RLCS	LCS-5612	S2D1909	02/19/03	1557
04	S2RLCSD	LCSD-5612	S2D1910	02/19/03	1640
05	RB-021103	B0257-18D	S2D1913	02/19/03	1845
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 02/19/03 Time: 1431

Lab File ID: S2D1907 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.728	1.841	0.05	6.5	20.0
bis(2-Chloroethyl)Ether	1.317	1.327	0.05	0.8	100
2-Chlorophenol	1.310	1.374	0.05	4.9	100
2-Methylphenol	1.172	1.264	0.05	7.8	100
2,2'-oxybis(1-Chloropropane)	1.869	1.775	0.05	5.0	100
4-Methylphenol	1.228	1.319	0.05	7.4	100
N-Nitroso-di-n-propylamine	0.714	0.755	0.05	5.7	100
Hexachloroethane	0.517	0.538	0.05	4.1	100
Nitrobenzene	0.405	0.422	0.05	4.2	100
Isophorone	0.707	0.734	0.05	3.8	100
2-Nitrophenol	0.231	0.240	0.05	3.9	20.0
2,4-Dimethylphenol	0.348	0.365	0.05	4.9	100
2,4-Dichlorophenol	0.311	0.337	0.05	8.4	20.0
Naphthalene	1.021	1.096	0.05	7.3	100
4-Chloroaniline	0.404	0.413	0.05	2.2	100
bis(2-Chloroethoxy)methane	0.448	0.450	0.05	0.4	100
Hexachlorobutadiene	0.166	0.186	0.05	12.0	20.0
4-Chloro-3-Methylphenol	0.329	0.370	0.05	12.5	20.0
2-Methylnaphthalene	0.689	0.761	0.05	10.4	100
Hexachlorocyclopentadiene	0.234	0.093	0.05	60.2	100
2,4,6-Trichlorophenol	0.380	0.396	0.05	4.2	100
2,4,5-Trichlorophenol	0.422	0.441	0.05	4.5	100
2-Chloronaphthalene	1.124	1.151	0.05	2.4	100
2-Nitroaniline	0.389	0.395	0.05	1.5	100
Dimethylphthalate	1.365	1.469	0.05	7.6	100
Acenaphthylene	1.832	1.872	0.05	2.2	100
2,6-Dinitrotoluene	0.354	0.376	0.05	6.2	100
3-Nitroaniline	0.371	0.374	0.05	0.8	100
Acenaphthene	1.119	1.170	0.05	4.6	20.0
2,4-Dinitrophenol	0.139	0.179	0.05	28.8	100
4-Nitrophenol	0.159	0.199	0.05	25.2	100
Dibenzofuran	1.604	1.730	0.05	7.8	100
2,4-Dinitrotoluene	0.438	0.503	0.05	14.8	100
Diethylphthalate	1.321	1.456	0.05	10.2	100
4-Chlorophenyl-phenylether	0.588	0.670	0.05	13.9	100
Fluorene	1.212	1.383	0.05	14.1	100
4-Nitroaniline	0.365	0.368	0.05	0.8	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 02/19/03 Time: 1431

Lab File ID: S2D1907 Init. Calib. Date(s): 02/14/03 02/14/03

Init. Calib. Times: 1311 1658

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.146	0.162	0.05	11.0	100
N-Nitrosodiphenylamine	0.549	0.545	0.05	0.7	20.0
4-Bromophenyl-phenylether	0.224	0.228	0.05	1.8	100
Hexachlorobenzene	0.234	0.248	0.05	6.0	100
Pentachlorophenol	0.124	0.133	0.05	7.2	20.0
Phenanthrene	1.046	1.100	0.05	5.2	100
Anthracene	1.046	1.098	0.05	5.0	100
Carbazole	0.921	0.963	0.05	4.6	100
Di-n-butylphthalate	1.364	1.471	0.05	7.8	100
Fluoranthene	1.079	1.242	0.05	15.1	20.0
Pyrene	1.273	1.240	0.05	2.6	100
Butylbenzylphthalate	0.652	0.633	0.05	2.9	100
3,3'-Dichlorobenzidine	0.426	0.431	0.05	1.2	100
Benzo(a)anthracene	1.094	1.152	0.05	5.3	100
Chrysene	0.982	1.042	0.05	6.1	100
bis(2-Ethylhexyl)phthalate	0.899	0.918	0.05	2.1	100
Di-n-octylphthalate	2.313	2.565	0.05	10.9	20.0
Benzo(b)fluoranthene	1.596	1.842	0.05	15.4	100
Benzo(k)fluoranthene	1.401	1.605	0.05	14.6	100
Benzo(a)pyrene	1.398	1.638	0.05	17.2	20.0
Indeno(1,2,3-cd)pyrene	1.502	1.745	0.05	16.2	100
Dibenzo(a,h)anthracene	1.389	1.673	0.05	20.4	100
Benzo(g,h,i)perylene	1.373	1.616	0.05	17.7	100
Nitrobenzene-d5	0.418	0.434	0.05	3.8	100
2-Fluorobiphenyl	1.317	1.361	0.05	3.3	100
Terphenyl-d14	0.864	0.853	0.05	1.3	100
Phenol-d5	1.578	1.631	0.05	3.4	100
2-Fluorophenol	1.225	1.216	0.05	0.7	100
2,4,6-Tribromophenol	0.113	0.120	0.05	6.2	100
2-Chlorophenol-d4	1.284	1.364	0.05	6.2	100
1,2-Dichlorobenzene-d4	0.826	0.885	0.05	7.1	100

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2432 DFTPP Injection Date: 03/09/03

Instrument ID: S2 DFTPP Injection Time: 1954

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	42.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	3.18
441	Present, but less than mass 443	6.0
442	40.0 - 99.9% of mass 198	51.4
443	17.0 - 23.0% of mass 442	10.0 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502D	SS0309B	S2D2433	03/09/03	2012
02	SSTD1602D	SS0309C	S2D2434	03/09/03	2052
03	SSTD0102D	SS0309D	S2D2435	03/09/03	2132
04	SSTD1202D	SS0309E	S2D2436	03/09/03	2212
05	SSTD0802D	SS0309F	S2D2437	03/09/03	2252
06	SSTD0202D	SS0309G	S2D2438	03/09/03	2331
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF10 =S2D2435 RRF20 =S2D2438
RRF50 =S2D2433 RRF80 =S2D2437 RRF120=S2D2436

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.152		1.265	1.260	1.258			*
bis(2-Chloroethyl)Ether	*	0.865		0.929	0.941	0.994			*
2-Chlorophenol	*	1.117		1.189	1.171	1.180			*
2-Methylphenol	*	0.917		0.990	0.949	0.979			*
2,2'-oxybis(1-Chloropropane)	*	1.244		1.235	1.218	1.248			*
4-Methylphenol	*	0.960		1.033	1.058	1.070			*
N-Nitroso-di-n-propylamine	*	0.750		0.820	0.764	0.672			*
Hexachloroethane	*	0.567		0.555	0.542	0.538			*
Nitrobenzene	*	0.372		0.409	0.387	0.405			*
Isophorone	*	0.544		0.544	0.537	0.533			*
2-Nitrophenol	*	0.206		0.224	0.212	0.223			*
2,4-Dimethylphenol	*	0.369		0.392	0.391	0.394			*
2,4-Dichlorophenol	*	0.299		0.340	0.347	0.365			*
Naphthalene	*	0.990		1.048	1.085	1.158			*
4-Chloroaniline	*	0.423		0.501	0.496	0.532			*
bis(2-Chloroethoxy)methane	*	0.316		0.336	0.345	0.365			*
Hexachlorobutadiene	*	0.241		0.247	0.248	0.257			*
4-Chloro-3-Methylphenol	*	0.306		0.331	0.338	0.339			*
2-Methylnaphthalene	*	0.888		0.984	1.040	1.116			*
Hexachlorocyclopentadiene	*	0.119		0.238	0.265	0.294			*
2,4,6-Trichlorophenol	*	0.352		0.378	0.367	0.368			*
2,4,5-Trichlorophenol	*		0.371	0.404	0.390	0.406			*
2-Chloronaphthalene	*	1.061		1.171	1.171	1.194			*
2-Nitroaniline	*		0.489	0.472	0.475	0.460			*
Dimethylphthalate	*	1.457		1.527	1.472	1.422			*
Acenaphthylene	*	1.763		1.830	1.821	1.798			*
2,6-Dinitrotoluene	*	0.332		0.353	0.341	0.329			*
3-Nitroaniline	*		0.332	0.362	0.361	0.366			*
Acenaphthene	*	1.084		1.162	1.166	1.153			*
2,4-Dinitrophenol	*		0.086	0.157	0.160	0.171			*
4-Nitrophenol	*		0.118	0.165	0.182	0.186			*
Dibenzofuran	*	2.095		2.326	2.315	2.277			*
2,4-Dinitrotoluene	*	0.425		0.471	0.455	0.448			*
Diethylphthalate	*	1.455		1.529	1.507	1.463			*
4-Chlorophenyl-phenylether	*	0.668		0.713	0.717	0.718			*
Fluorene	*	1.268		1.391	1.416	1.451			*
4-Nitroaniline	*		0.285	0.263	0.241	0.203			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF10 =S2D2435 RRF20 =S2D2438
RRF50 =S2D2433 RRF80 =S2D2437 RRF120=S2D2436

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.144	0.182	0.178	0.181			*
N-Nitrosodiphenylamine (1)	*	0.476		0.492	0.476	0.502			*
4-Bromophenyl-phenylether	*	0.234		0.251	0.248	0.260			*
Hexachlorobenzene	*	0.284		0.295	0.285	0.293			*
Pentachlorophenol	*		0.059	0.098	0.093	0.109			*
Phenanthrene	*	1.072		1.159	1.142	1.219			*
Anthracene	*	1.063		1.163	1.143	1.202			*
Carbazole	*	0.846		0.728	0.704	0.683			*
Di-n-butylphthalate	*	1.311		1.344	1.347	1.414			*
Fluoranthene	*	1.138		1.212	1.217	1.277			*
Pyrene	*	1.082		1.137	1.139	1.123			*
Butylbenzylphthalate	*	0.545		0.564	0.565	0.555			*
3,3'-Dichlorobenzidine		0.425		0.338	0.324	0.344			
Benzo(a)anthracene	*	1.067		1.121	1.094	1.140			*
Chrysene	*	0.946		0.947	0.946	0.962			*
bis(2-Ethylhexyl)phthalate	*	0.709		0.731	0.744	0.780			*
Di-n-octylphthalate	*	1.847		1.995	2.110	2.250			*
Benzo(b)fluoranthene	*	1.561		1.730	1.684	1.834			*
Benzo(k)fluoranthene	*	1.490		1.526	1.621	1.673			*
Benzo(a)pyrene	*	1.333		1.462	1.498	1.569			*
Indeno(1,2,3-cd)pyrene	*	1.550		1.725	1.754	1.808			*
Dibenzo(a,h)anthracene	*	1.303		1.457	1.493	1.566			*
Benzo(g,h,i)perylene	*	1.238		1.391	1.406	1.369			*
1,1'-Biphenyl	*	1.372		1.508	1.553	1.577			*
Acetophenone	*	1.581		1.727	1.687	1.676			*
Atrazine	*	0.242		0.240	0.225	0.234			*
Benzaldehyde	*	0.546		0.643	0.641	0.567			*
Caprolactum	*	0.083		0.098	0.083	0.078			*
Nitrobenzene-d5		0.414		0.445	0.449	0.455			*
2-Fluorobiphenyl	*	1.431		1.546	1.531	1.541			*
Terphenyl-d14	*	0.875		0.930	0.910	0.888			*
Phenol-d5	*	1.107		1.229	1.206	1.208			*
2-Fluorophenol	*	0.829		0.950	0.924	0.933			*
2,4,6-Tribromophenol	*	0.116		0.124	0.121	0.124			*
2-Chlorophenol-d4	*	1.140		1.235	1.195	1.224			*
1,2-Dichlorobenzene-d4	*	0.905		0.932	0.904	0.929			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.318					1.251	4.8*
bis(2-Chloroethyl)Ether	* 1.073					0.960	8.1*
2-Chlorophenol	* 1.203					1.172	2.8*
2-Methylphenol	* 1.028					0.973	4.3*
2,2'-oxybis(1-Chloropropane)	* 1.271					1.243	1.5*
4-Methylphenol	* 1.094					1.043	4.9*
N-Nitroso-di-n-propylamine	* 0.628					0.727	10.5*
Hexachloroethane	* 0.543					0.549	2.1*
Nitrobenzene	* 0.417					0.398	4.6*
Isophorone	* 0.554					0.542	1.5*
2-Nitrophenol	* 0.237					0.220	5.4*
2,4-Dimethylphenol	* 0.412					0.392	3.9*
2,4-Dichlorophenol	* 0.384					0.347	9.2*
Naphthalene	* 1.250					1.106	9.1*
4-Chloroaniline	* 0.567					0.504	10.6*
bis(2-Chloroethoxy)methane	* 0.388					0.350	7.9*
Hexachlorobutadiene	* 0.273					0.253	5.0*
4-Chloro-3-Methylphenol	* 0.364					0.336	6.1*
2-Methylnaphthalene	* 1.211					1.048	11.8*
Hexachlorocyclopentadiene	* 0.330					0.249	32.2*
2,4,6-Trichlorophenol	* 0.392					0.371	4.0*
2,4,5-Trichlorophenol	* 0.436					0.401	6.0*
2-Chloronaphthalene	* 1.257					1.171	6.0*
2-Nitroaniline	* 0.466					0.472	2.3*
Dimethylphthalate	* 1.512					1.478	2.9*
Acenaphthylene	* 1.907					1.824	2.9*
2,6-Dinitrotoluene	* 0.364					0.344	4.3*
3-Nitroaniline	* 0.391					0.362	5.8*
Acenaphthene	* 1.228					1.159	4.4*
2,4-Dinitrophenol	* 0.194					0.154	26.4*
4-Nitrophenol	* 0.204					0.171	19.0*
Dibenzofuran	* 2.464					2.295	5.8*
2,4-Dinitrotoluene	* 0.460					0.452	3.8*
Diethylphthalate	* 1.508					1.492	2.1*
4-Chlorophenyl-phenylether	* 0.765					0.716	4.8*
Fluorene	* 1.551					1.415	7.2*
4-Nitroaniline	* 0.174					0.233	19.3*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.199					0.177	11.4*
N-Nitrosodiphenylamine (1)	* 0.528					0.495	4.3*
4-Bromophenyl-phenylether	* 0.273					0.253	5.7*
Hexachlorobenzene	* 0.310					0.293	3.6*
Pentachlorophenol	* 0.128					0.097	26.1*
Phenanthrene	* 1.303					1.179	7.4*
Anthracene	* 1.269					1.168	6.5*
Carbazole	* 0.746					0.741	8.5*
Di-n-butylphthalate	* 1.495					1.382	5.3*
Fluoranthene	* 1.375					1.244	7.1*
Pyrene	* 1.156					1.127	2.5*
Butylbenzylphthalate	* 0.584					0.563	2.5*
3,3'-Dichlorobenzidine	0.319					0.350	12.3
Benzo(a)anthracene	* 1.155					1.115	3.1*
Chrysene	* 0.983					0.957	1.7*
bis(2-Ethylhexyl)phthalate	* 0.816					0.756	5.6*
Di-n-octylphthalate	* 2.414					2.123	10.4*
Benzo(b)fluoranthene	* 2.163					1.794	12.7*
Benzo(k)fluoranthene	* 1.693					1.601	5.6*
Benzo(a)pyrene	* 1.614					1.495	7.2*
Indeno(1,2,3-cd)pyrene	* 1.873					1.742	7.0*
Dibenzo(a,h)anthracene	* 1.629					1.490	8.3*
Benzo(g,h,i)perylene	* 1.443					1.369	5.7*
1,1'-Biphenyl	* 1.666					1.535	7.0*
Acetophenone	* 1.713					1.677	3.4*
Atrazine	* 0.234					0.235	2.9*
Benzaldehyde	* 0.428					0.565	15.6*
Caprolactum	* 0.082					0.085	8.8*
Nitrobenzene-d5	0.464					0.445	4.2*
2-Fluorobiphenyl	* 1.648					1.539	5.0*
Terphenyl-d14	* 0.927					0.906	2.7*
Phenol-d5	* 1.238					1.198	4.4*
2-Fluorophenol	* 0.958					0.919	5.7*
2,4,6-Tribromophenol	* 0.130					0.123	4.1*
2-Chlorophenol-d4	* 1.259					1.211	3.8*
1,2-Dichlorobenzene-d4	* 0.964					0.927	2.6*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2440 DFTPP Injection Date: 03/10/03

Instrument ID: S2 DFTPP Injection Time: 0044

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	43.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	26.9
365	Greater than 1.0% of mass 198	3.06
441	Present, but less than mass 443	5.6
442	40.0 - 99.9% of mass 198	48.1
443	17.0 - 23.0% of mass 442	9.4 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502E	SS0310A	S2D2441	03/10/03	0101
02	WOD-SS-105	B0257-04A	S2D2455	03/10/03	1012
03	SV1110507	B0257-11A	S2D2456	03/10/03	1053
04	SV1011617	B0257-06A	S2D2457	03/10/03	1133
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.251	1.266	0.05	1.2	20.0
bis(2-Chloroethyl)Ether	0.960	0.920	0.05	4.2	100
2-Chlorophenol	1.172	1.173	0.05	0.1	100
2-Methylphenol	0.973	0.972	0.05	0.1	100
2,2'-oxybis(1-Chloropropane)	1.243	1.270	0.05	2.2	100
4-Methylphenol	1.043	1.042	0.05	0.1	100
N-Nitroso-di-n-propylamine	0.727	0.824	0.05	13.3	100
Hexachloroethane	0.549	0.558	0.05	1.6	100
Nitrobenzene	0.398	0.388	0.05	2.5	100
Isophorone	0.542	0.556	0.05	2.6	100
2-Nitrophenol	0.220	0.220	0.05	0.0	20.0
2,4-Dimethylphenol	0.392	0.382	0.05	2.6	100
2,4-Dichlorophenol	0.347	0.331	0.05	4.6	20.0
Naphthalene	1.106	1.051	0.05	5.0	100
4-Chloroaniline	0.504	0.482	0.05	4.4	100
bis(2-Chloroethoxy)methane	0.350	0.340	0.05	2.8	100
Hexachlorobutadiene	0.253	0.240	0.05	5.1	20.0
4-Chloro-3-Methylphenol	0.336	0.331	0.05	1.5	20.0
2-Methylnaphthalene	1.048	0.976	0.05	6.9	100
Hexachlorocyclopentadiene	0.249	0.246	0.05	1.2	100
2,4,6-Trichlorophenol	0.371	0.373	0.05	0.5	100
2,4,5-Trichlorophenol	0.401	0.405	0.05	1.0	100
2-Chloronaphthalene	1.171	1.163	0.05	0.7	100
2-Nitroaniline	0.472	0.481	0.05	1.9	100
Dimethylphthalate	1.478	1.503	0.05	1.7	100
Acenaphthylene	1.824	1.811	0.05	0.7	100
2,6-Dinitrotoluene	0.344	0.354	0.05	2.9	100
3-Nitroaniline	0.362	0.367	0.05	1.4	100
Acenaphthene	1.159	1.156	0.05	0.2	20.0
2,4-Dinitrophenol	0.154	0.148	0.05	3.9	100
4-Nitrophenol	0.171	0.169	0.05	1.2	100
Dibenzofuran	2.295	2.290	0.05	0.2	100
2,4-Dinitrotoluene	0.452	0.465	0.05	2.9	100
Diethylphthalate	1.492	1.517	0.05	1.7	100
4-Chlorophenyl-phenylether	0.716	0.702	0.05	2.0	100
Fluorene	1.415	1.400	0.05	1.1	100
4-Nitroaniline	0.233	0.297	0.05	27.5	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.177	0.178	0.05	0.6	100
N-Nitrosodiphenylamine	0.495	0.480	0.05	3.0	20.0
4-Bromophenyl-phenylether	0.253	0.244	0.05	3.6	100
Hexachlorobenzene	0.293	0.290	0.05	1.0	100
Pentachlorophenol	0.097	0.089	0.05	8.2	20.0
Phenanthrene	1.179	1.159	0.05	1.7	100
Anthracene	1.168	1.133	0.05	3.0	100
Carbazole	0.741	0.748	0.05	0.9	100
Di-n-butylphthalate	1.382	1.359	0.05	1.7	100
Fluoranthene	1.244	1.226	0.05	1.4	20.0
Pyrene	1.127	1.139	0.05	1.1	100
Butylbenzylphthalate	0.563	0.571	0.05	1.4	100
3,3'-Dichlorobenzidine	0.350	0.374	0.05	6.8	100
Benzo(a)anthracene	1.115	1.114	0.05	0.1	100
Chrysene	0.957	0.966	0.05	0.9	100
bis(2-Ethylhexyl)phthalate	0.756	0.742	0.05	1.8	100
Di-n-octylphthalate	2.123	2.100	0.05	1.1	20.0
Benzo(b)fluoranthene	1.794	1.649	0.05	8.1	100
Benzo(k)fluoranthene	1.601	1.616	0.05	0.9	100
Benzo(a)pyrene	1.495	1.473	0.05	1.5	20.0
Indeno(1,2,3-cd)pyrene	1.742	1.746	0.05	0.2	100
Dibenzo(a,h)anthracene	1.490	1.467	0.05	1.5	100
Benzo(g,h,i)perylene	1.369	1.410	0.05	3.0	100
1,1'-Biphenyl	1.535	1.502	0.05	2.1	100
Acetophenone	1.677	1.728	0.05	3.0	100
Atrazine	0.235	0.240	0.05	2.1	100
Benzaldehyde	0.565	0.765	0.05	35.4	100
Caprolactum	0.085	0.087	0.05	2.4	100
Nitrobenzene-d5	0.445	0.446	0.05	0.2	100
2-Fluorobiphenyl	1.539	1.527	0.05	0.8	100
Terphenyl-d14	0.906	0.917	0.05	1.2	100
Phenol-d5	1.198	1.215	0.05	1.4	100
2-Fluorophenol	0.919	0.940	0.05	2.3	100
2,4,6-Tribromophenol	0.123	0.121	0.05	1.6	100
2-Chlorophenol-d4	1.211	1.213	0.05	0.2	100
1,2-Dichlorobenzene-d4	0.927	0.933	0.05	0.6	100

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2458 DFTPP Injection Date: 03/10/03

Instrument ID: S2 DFTPP Injection Time: 1447

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.0
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	42.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.4
275	10.0 - 30.0% of mass 198	29.2
365	Greater than 1.0% of mass 198	3.32
441	Present, but less than mass 443	3.9
442	40.0 - 99.9% of mass 198	61.2
443	17.0 - 23.0% of mass 442	11.5 (18.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502G	SS0310C	S2D2460	03/10/03	1605
02	SBLK2M	MB-5791	S2D2461	03/10/03	1652
03	S2MLCS	LCS-5791	S2D2462	03/10/03	1732
04	SV1130406	B0257-15A	S2D2463	03/10/03	1812
05	SV1090608	B0257-03A	S2D2464	03/10/03	1852
06	SV1140406	B0257-17A	S2D2465	03/10/03	1932
07	SV1050507	B0257-05A	S2D2466	03/10/03	2011
08	SV1100204	B0257-08A	S2D2467	03/10/03	2051
09	SV1120204	B0257-13A	S2D2468	03/10/03	2130
10	WOD-SS-113	B0257-14A	S2D2474	03/11/03	0125
11	SV1130406MS	B0257-15AMS	S2D2475	03/11/03	0204
12	SV1130406MSD	B0257-15AMSD	S2D2476	03/11/03	0243
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/10/03 Time: 1605

Lab File ID: S2D2460 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.251	1.222	0.05	2.3	20.0
bis(2-Chloroethyl)Ether	0.960	0.913	0.05	4.9	100
2-Chlorophenol	1.172	1.170	0.05	0.2	100
2-Methylphenol	0.973	0.968	0.05	0.5	100
2,2'-oxybis(1-Chloropropane)	1.243	1.302	0.05	4.7	100
4-Methylphenol	1.043	1.007	0.05	3.4	100
N-Nitroso-di-n-propylamine	0.727	0.790	0.05	8.7	100
Hexachloroethane	0.549	0.571	0.05	4.0	100
Nitrobenzene	0.398	0.412	0.05	3.5	100
Isophorone	0.542	0.553	0.05	2.0	100
2-Nitrophenol	0.220	0.226	0.05	2.7	20.0
2,4-Dimethylphenol	0.392	0.338	0.05	13.8	100
2,4-Dichlorophenol	0.347	0.346	0.05	0.3	20.0
Naphthalene	1.106	1.048	0.05	5.2	100
4-Chloroaniline	0.504	0.343	0.05	31.9	100
bis(2-Chloroethoxy)methane	0.350	0.342	0.05	2.3	100
Hexachlorobutadiene	0.253	0.259	0.05	2.4	20.0
4-Chloro-3-Methylphenol	0.336	0.348	0.05	3.6	20.0
2-Methylnaphthalene	1.048	1.012	0.05	3.4	100
Hexachlorocyclopentadiene	0.249	0.203	0.05	18.5	100
2,4,6-Trichlorophenol	0.371	0.381	0.05	2.7	100
2,4,5-Trichlorophenol	0.401	0.414	0.05	3.2	100
2-Chloronaphthalene	1.171	1.142	0.05	2.5	100
2-Nitroaniline	0.472	0.507	0.05	7.4	100
Dimethylphthalate	1.478	1.520	0.05	2.8	100
Acenaphthylene	1.824	1.811	0.05	0.7	100
2,6-Dinitrotoluene	0.344	0.351	0.05	2.0	100
3-Nitroaniline	0.362	0.404	0.05	11.6	100
Acenaphthene	1.159	1.152	0.05	0.6	20.0
2,4-Dinitrophenol	0.154	0.133	0.05	13.6	100
4-Nitrophenol	0.171	0.176	0.05	2.9	100
Dibenzofuran	2.295	2.329	0.05	1.5	100
2,4-Dinitrotoluene	0.452	0.492	0.05	8.8	100
Diethylphthalate	1.492	1.564	0.05	4.8	100
4-Chlorophenyl-phenylether	0.716	0.727	0.05	1.5	100
Fluorene	1.415	1.421	0.05	0.4	100
4-Nitroaniline	0.233	0.379	0.05	62.7	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/10/03 Time: 1605

Lab File ID: S2D2460 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.177	0.162	0.05	8.5	100
N-Nitrosodiphenylamine	0.495	0.444	0.05	10.3	20.0
4-Bromophenyl-phenylether	0.253	0.245	0.05	3.2	100
Hexachlorobenzene	0.293	0.294	0.05	0.3	100
Pentachlorophenol	0.097	0.081	0.05	16.5	20.0
Phenanthrene	1.179	1.122	0.05	4.8	100
Anthracene	1.168	1.119	0.05	4.2	100
Carbazole	0.741	0.863	0.05	16.5	100
Di-n-butylphthalate	1.382	1.358	0.05	1.7	100
Fluoranthene	1.244	1.251	0.05	0.6	20.0
Pyrene	1.127	1.102	0.05	2.2	100
Butylbenzylphthalate	0.563	0.546	0.05	3.0	100
3,3'-Dichlorobenzidine	0.350	0.453	0.01	29.4	100
Benzo(a)anthracene	1.115	1.116	0.05	0.1	100
Chrysene	0.957	0.940	0.05	1.8	100
bis(2-Ethylhexyl)phthalate	0.756	0.703	0.05	7.0	100
Di-n-octylphthalate	2.123	2.012	0.05	5.2	20.0
Benzo(b)fluoranthene	1.794	1.602	0.05	10.7	100
Benzo(k)fluoranthene	1.601	1.681	0.05	5.0	100
Benzo(a)pyrene	1.495	1.414	0.05	5.4	20.0
Indeno(1,2,3-cd)pyrene	1.742	1.764	0.05	1.3	100
Dibenzo(a,h)anthracene	1.490	1.495	0.05	0.3	100
Benzo(g,h,i)perylene	1.369	1.410	0.05	3.0	100
1,1'-Biphenyl	1.535	1.480	0.05	3.6	100
Acetophenone	1.677	1.761	0.05	5.0	100
Atrazine	0.235	0.239	0.05	1.7	100
Benzaldehyde	0.565	0.856	0.05	51.5	100
Caprolactum	0.085	0.100	0.05	17.6	100
Nitrobenzene-d5	0.445	0.452	0.05	1.6	100
2-Fluorobiphenyl	1.539	1.517	0.05	1.4	100
Terphenyl-d14	0.906	0.907	0.05	0.1	100
Phenol-d5	1.198	1.198	0.05	0.0	100
2-Fluorophenol	0.919	0.921	0.05	0.2	100
2,4,6-Tribromophenol	0.123	0.136	0.05	10.6	100
2-Chlorophenol-d4	1.211	1.207	0.05	0.3	100
1,2-Dichlorobenzene-d4	0.927	0.944	0.05	1.8	100

FORM VII SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2555 DFTPP Injection Date: 03/13/03

Instrument ID: S2 DFTPP Injection Time: 1621

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.3
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	43.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	2.87
441	Present, but less than mass 443	7.4
442	40.0 - 99.9% of mass 198	53.6
443	17.0 - 23.0% of mass 442	10.6 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502M	SS0313B	S2D2556	03/13/03	2138
02	SSTD1602M	SS0313C	S2D2557	03/13/03	2218
03	SSTD0102M	SS0313D	S2D2558	03/13/03	2258
04	SSTD1202M	SS0313E	S2D2559	03/13/03	2338
05	SSTD0202M	SS0313F	S2D2560	03/14/03	0018
06	SSTD0802M	SS0313G	S2D2561	03/14/03	0057
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 2138 0057

LAB FILE ID: RRF10 =S2D2558 RRF20 =S2D2560
RRF50 =S2D2556 RRF80 =S2D2561 RRF120=S2D2559

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.772		1.714	1.633	1.476			*
bis(2-Chloroethyl)Ether	*	1.558		1.422	1.325	1.268			*
2-Chlorophenol	*	1.472		1.389	1.306	1.249			*
2-Methylphenol	*	1.318		1.197	1.140	1.092			*
2,2'-oxybis(1-Chloropropane)	*	2.543		2.222	2.158	1.952			*
4-Methylphenol	*	1.338		1.240	1.163	1.039			*
N-Nitroso-di-n-propylamine	*	1.003		0.916	0.832	0.734			*
Hexachloroethane	*	0.640		0.602	0.564	0.535			*
Nitrobenzene	*	0.453		0.439	0.415	0.401			*
Isophorone	*	0.703		0.667	0.639	0.619			*
2-Nitrophenol	*	0.226		0.229	0.222	0.214			*
2,4-Dimethylphenol	*	0.346		0.284	0.282	0.280			*
2,4-Dichlorophenol	*	0.296		0.301	0.287	0.278			*
Naphthalene	*	1.184		1.089	1.038	0.982			*
4-Chloroaniline	*	0.634		0.264	0.248	0.196			*
bis(2-Chloroethoxy)methane	*	0.503		0.481	0.452	0.438			*
Hexachlorobutadiene	*	0.172		0.166	0.154	0.150			*
4-Chloro-3-Methylphenol	*	0.332		0.324	0.314	0.303			*
2-Methylnaphthalene	*	0.964		0.869	0.822	0.785			*
Hexachlorocyclopentadiene	*	0.102		0.205	0.229	0.255			*
2,4,6-Trichlorophenol	*	0.344		0.368	0.355	0.356			*
2,4,5-Trichlorophenol	*		0.381	0.402	0.396	0.403			*
2-Chloronaphthalene	*	1.230		1.180	1.120	1.090			*
2-Nitroaniline	*		0.622	0.610	0.590	0.588			*
Dimethylphthalate	*	1.478		1.448	1.400	1.383			*
Acenaphthylene	*	2.067		1.974	1.898	1.860			*
2,6-Dinitrotoluene	*	0.343		0.350	0.350	0.352			*
3-Nitroaniline	*		0.551	0.520	0.525	0.502			*
Acenaphthene	*	1.238		1.176	1.155	1.136			*
2,4-Dinitrophenol	*		0.060	0.092	0.144	0.160			*
4-Nitrophenol	*		0.097	0.105	0.122	0.119			*
Dibenzofuran	*	2.256		2.090	2.013	1.940			*
2,4-Dinitrotoluene	*	0.429		0.444	0.475	0.468			*
Diethylphthalate	*	1.521		1.469	1.420	1.391			*
4-Chlorophenyl-phenylether	*	0.653		0.610	0.593	0.579			*
Fluorene	*	1.376		1.275	1.263	1.213			*
4-Nitroaniline	*		0.555	0.528	0.492	0.506			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 2138 0057

LAB FILE ID: RRF10 =S2D2558 RRF20 =S2D2560
RRF50 =S2D2556 RRF80 =S2D2561 RRF120=S2D2559

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.126	0.138	0.167	0.169			*
N-Nitrosodiphenylamine (1)	*	0.540		0.395	0.348	0.320			*
4-Bromophenyl-phenylether	*	0.234		0.229	0.218	0.210			*
Hexachlorobenzene	*	0.272		0.260	0.244	0.239			*
Pentachlorophenol	*		0.052	0.089	0.092	0.105			*
Phenanthrene	*	1.191		1.097	1.048	0.992			*
Anthracene	*	1.257		1.069	1.002	0.960			*
Carbazole	*	1.142		0.992	0.871	0.829			*
Di-n-butylphthalate	*	1.739		1.642	1.528	1.426			*
Fluoranthene	*	1.308		1.196	1.126	1.068			*
Pyrene	*	1.289		1.188	1.108	1.093			*
Butylbenzylphthalate	*	0.741		0.714	0.675	0.666			*
3,3'-Dichlorobenzidine		0.506		0.433	0.394	0.376			
Benzo(a)anthracene	*	1.147		1.090	1.022	0.997			*
Chrysene	*	1.129		0.988	0.960	0.951			*
bis(2-Ethylhexyl)phthalate	*	1.075		1.028	0.958	0.927			*
Di-n-octylphthalate	*	2.549		2.516	2.446	2.311			*
Benzo(b)fluoranthene	*	1.580		1.476	1.558	1.521			*
Benzo(k)fluoranthene	*	1.633		1.638	1.399	1.360			*
Benzo(a)pyrene	*	1.434		1.320	1.258	1.248			*
Indeno(1,2,3-cd)pyrene	*	1.477		1.569	1.516	1.516			*
Dibenzo(a,h)anthracene	*	1.228		1.289	1.251	1.257			*
Benzo(g,h,i)perylene	*	1.237		1.321	1.263	1.264			*
1,1'-Biphenyl	*	1.620		1.528	1.426	1.353			*
Acetophenone	*	1.923		1.779	1.694	1.566			*
Atrazine	*	0.226		0.160	0.143	0.102			*
Benzaldehyde	*	0.797		1.093	0.956	0.760			*
Caprolactum	*	0.136		0.134	0.102	0.096			*
Nitrobenzene-d5		0.476		0.453	0.444	0.430			*
2-Fluorobiphenyl	*	1.444		1.402	1.326	1.311			*
Terphenyl-d14	*	0.934		0.856	0.806	0.788			*
Phenol-d5	*	1.751		1.646	1.560	1.484			*
2-Fluorophenol	*	1.360		1.320	1.247	1.223			*
2,4,6-Tribromophenol	*	0.117		0.119	0.115	0.117			*
2-Chlorophenol-d4	*	1.486		1.385	1.310	1.263			*
1,2-Dichlorobenzene-d4	*	0.985		0.908	0.854	0.817			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 2138 0057

LAB FILE ID: RRF160=S2D2557

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 0.959					1.511	21.7*
bis(2-Chloroethyl)Ether	* 1.230					1.361	9.7*
2-Chlorophenol	* 1.227					1.329	7.7*
2-Methylphenol	* 1.060					1.161	8.7*
2,2'-oxybis(1-Chloropropane)	* 1.825					2.140	12.9*
4-Methylphenol	* 1.004					1.157	12.0*
N-Nitroso-di-n-propylamine	* 0.680					0.833	15.7*
Hexachloroethane	* 0.520					0.572	8.6*
Nitrobenzene	* 0.405					0.423	5.4*
Isophorone	* 0.620					0.650	5.5*
2-Nitrophenol	* 0.218					0.222	2.7*
2,4-Dimethylphenol	* 0.294					0.297	9.4*
2,4-Dichlorophenol	* 0.282					0.289	3.3*
Naphthalene	* 0.992					1.057	7.8*
4-Chloroaniline	* 0.168					0.302	62.7*
bis(2-Chloroethoxy)methane	* 0.438					0.462	6.2*
Hexachlorobutadiene	* 0.153					0.159	5.9*
4-Chloro-3-Methylphenol	* 0.308					0.316	3.7*
2-Methylnaphthalene	* 0.770					0.842	9.3*
Hexachlorocyclopentadiene	* 0.264					0.211	30.9*
2,4,6-Trichlorophenol	* 0.359					0.356	2.5*
2,4,5-Trichlorophenol	* 0.403					0.397	2.4*
2-Chloronaphthalene	* 1.069					1.138	5.8*
2-Nitroaniline	* 0.587					0.599	2.6*
Dimethylphthalate	* 1.398					1.421	2.8*
Acenaphthylene	* 1.814					1.923	5.2*
2,6-Dinitrotoluene	* 0.353					0.350	1.2*
3-Nitroaniline	* 0.515					0.523	3.5*
Acenaphthene	* 1.112					1.163	4.1*
2,4-Dinitrophenol	* 0.163					0.124	37.0*
4-Nitrophenol	* 0.124					0.113	10.6*
Dibenzofuran	* 1.898					2.039	7.0*
2,4-Dinitrotoluene	* 0.464					0.456	4.2*
Diethylphthalate	* 1.380					1.436	4.1*
4-Chlorophenyl-phenylether	* 0.572					0.601	5.4*
Fluorene	* 1.223					1.270	5.1*
4-Nitroaniline	* 0.496					0.515	5.0*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 2138 0057

LAB FILE ID: RRF160=S2D2557

COMPOUND	RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.174						0.155	13.9*
N-Nitrosodiphenylamine (1)	* 0.317						0.384	24.2*
4-Bromophenyl-phenylether	* 0.218						0.222	4.3*
Hexachlorobenzene	* 0.244						0.252	5.5*
Pentachlorophenol	* 0.107						0.089	25.0*
Phenanthrene	* 1.007						1.067	7.5*
Anthracene	* 1.006						1.059	11.1*
Carbazole	* 0.869						0.941	13.6*
Di-n-butylphthalate	* 1.460						1.559	8.3*
Fluoranthene	* 1.125						1.165	7.9*
Pyrene	* 1.084						1.152	7.5*
Butylbenzylphthalate	* 0.674						0.694	4.7*
3,3'-Dichlorobenzidine	0.364						0.415	13.8
Benzo(a)anthracene	* 1.024						1.056	5.8*
Chrysene	* 0.950						0.996	7.7*
bis(2-Ethylhexyl)phthalate	* 0.928						0.983	6.7*
Di-n-octylphthalate	* 2.184						2.401	6.3*
Benzo(b)fluoranthene	* 1.570						1.541	2.8*
Benzo(k)fluoranthene	* 1.337						1.473	10.2*
Benzo(a)pyrene	* 1.248						1.302	6.1*
Indeno(1,2,3-cd)pyrene	* 1.540						1.524	2.2*
Dibenzo(a,h)anthracene	* 1.262						1.257	1.7*
Benzo(g,h,i)perylene	* 1.285						1.274	2.4*
1,1'-Biphenyl	* 1.350						1.455	8.0*
Acetophenone	* 1.526						1.698	9.5*
Atrazine	* 0.078						0.142	40.2*
Benzaldehyde	* 0.668						0.855	19.7*
Caprolactum	* 0.098						0.113	17.8*
Nitrobenzene-d5	0.432						0.447	4.2*
2-Fluorobiphenyl	* 1.288						1.354	4.9*
Terphenyl-d14	* 0.804						0.838	7.1*
Phenol-d5	* 1.315						1.551	10.6*
2-Fluorophenol	* 1.235						1.277	4.7*
2,4,6-Tribromophenol	* 0.122						0.118	2.4*
2-Chlorophenol-d4	* 1.244						1.338	7.4*
1,2-Dichlorobenzene-d4	* 0.795						0.872	8.8*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2563 DFTPP Injection Date: 03/14/03

Instrument ID: S2 DFTPP Injection Time: 0211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	66.8
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	50.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	20.7
365	Greater than 1.0% of mass 198	2.41
441	Present, but less than mass 443	10.2
442	40.0 - 99.9% of mass 198	60.2
443	17.0 - 23.0% of mass 442	11.4 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502N	SS0314A	S2D2564	03/14/03	0228
02	SVDUP05	B0257-07A	S2D2568	03/14/03	0506
03	WOD-SS-109	B0257-02A	S2D2572	03/14/03	0743
04	WOD-SS-110	B0257-09A	S2D2573	03/14/03	0823
05	WOD-SS-111	B0257-10A	S2D2574	03/14/03	0903
06	WOD-SS-112	B0257-12A	S2D2575	03/14/03	0943
07	WOD-SS-114	B0257-16A	S2D2576	03/14/03	1023
08					
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/14/03 Time: 0228

Lab File ID: S2D2564 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 2138 0057

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.511	1.763	0.05	16.7	20.0
bis(2-Chloroethyl)Ether	1.361	1.460	0.05	7.3	100
2-Chlorophenol	1.329	1.401	0.05	5.4	100
2-Methylphenol	1.161	1.216	0.05	4.7	100
2,2'-oxybis(1-Chloropropane)	2.140	2.358	0.05	10.2	100
4-Methylphenol	1.157	1.255	0.05	8.5	100
N-Nitroso-di-n-propylamine	0.833	0.947	0.05	13.7	100
Hexachloroethane	0.572	0.598	0.05	4.5	100
Nitrobenzene	0.423	0.453	0.05	7.1	100
Isophorone	0.650	0.674	0.05	3.7	100
2-Nitrophenol	0.222	0.236	0.05	6.3	20.0
2,4-Dimethylphenol	0.297	0.284	0.05	4.4	100
2,4-Dichlorophenol	0.289	0.298	0.05	3.1	20.0
Naphthalene	1.057	1.102	0.05	4.2	100
4-Chloroaniline	0.302	0.263	0.05	12.9	100
bis(2-Chloroethoxy)methane	0.462	0.488	0.05	5.6	100
Hexachlorobutadiene	0.159	0.163	0.05	2.5	20.0
4-Chloro-3-Methylphenol	0.316	0.323	0.05	2.2	20.0
2-Methylnaphthalene	0.842	0.874	0.05	3.8	100
Hexachlorocyclopentadiene	0.211	0.215	0.05	1.9	100
2,4,6-Trichlorophenol	0.356	0.356	0.05	0.0	100
2,4,5-Trichlorophenol	0.397	0.401	0.05	1.0	100
2-Chloronaphthalene	1.138	1.176	0.05	3.3	100
2-Nitroaniline	0.599	0.599	0.05	0.0	100
Dimethylphthalate	1.421	1.424	0.05	0.2	100
Acenaphthylene	1.923	1.968	0.05	2.3	100
2,6-Dinitrotoluene	0.350	0.366	0.05	4.6	100
3-Nitroaniline	0.523	0.550	0.05	5.2	100
Acenaphthene	1.163	1.192	0.05	2.5	20.0
2,4-Dinitrophenol	0.124	0.131	0.05	5.6	100
4-Nitrophenol	0.113	0.116	0.05	2.6	100
Dibenzofuran	2.039	2.082	0.05	2.1	100
2,4-Dinitrotoluene	0.456	0.484	0.05	6.1	100
Diethylphthalate	1.436	1.477	0.05	2.8	100
4-Chlorophenyl-phenylether	0.601	0.613	0.05	2.0	100
Fluorene	1.270	1.294	0.05	1.9	100
4-Nitroaniline	0.515	0.501	0.05	2.7	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/14/03 Time: 0228

Lab File ID: S2D2564 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 2138 0057

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.155	0.161	0.05	3.9	100
N-Nitrosodiphenylamine	0.384	0.388	0.05	1.0	20.0
4-Bromophenyl-phenylether	0.222	0.226	0.05	1.8	100
Hexachlorobenzene	0.252	0.248	0.05	1.6	100
Pentachlorophenol	0.089	0.088	0.05	1.1	20.0
Phenanthrene	1.067	1.100	0.05	3.1	100
Anthracene	1.059	1.055	0.05	0.4	100
Carbazole	0.941	0.942	0.05	0.1	100
Di-n-butylphthalate	1.559	1.611	0.05	3.3	100
Fluoranthene	1.165	1.187	0.05	1.9	20.0
Pyrene	1.152	1.186	0.05	3.0	100
Butylbenzylphthalate	0.694	0.724	0.05	4.3	100
3,3'-Dichlorobenzidine	0.415	0.432	0.01	4.1	100
Benzo(a)anthracene	1.056	1.087	0.05	2.9	100
Chrysene	0.996	1.009	0.05	1.3	100
bis(2-Ethylhexyl)phthalate	0.983	1.025	0.05	4.3	100
Di-n-octylphthalate	2.401	2.529	0.05	5.3	20.0
Benzo(b)fluoranthene	1.541	1.525	0.05	1.0	100
Benzo(k)fluoranthene	1.473	1.598	0.05	8.5	100
Benzo(a)pyrene	1.302	1.331	0.05	2.2	20.0
Indeno(1,2,3-cd)pyrene	1.524	1.562	0.05	2.5	100
Dibenzo(a,h)anthracene	1.257	1.297	0.05	3.2	100
Benzo(g,h,i)perylene	1.274	1.300	0.05	2.0	100
1,1'-Biphenyl	1.455	1.512	0.05	3.9	100
Acetophenone	1.698	1.814	0.05	6.8	100
Atrazine	0.142	0.157	0.05	10.6	100
Benzaldehyde	0.855	1.127	0.05	31.8	100
Caprolactum	0.113	0.132	0.05	16.8	100
Nitrobenzene-d5	0.447	0.468	0.05	4.7	100
2-Fluorobiphenyl	1.354	1.375	0.05	1.6	100
Terphenyl-d14	0.838	0.857	0.05	2.3	100
Phenol-d5	1.551	1.674	0.05	7.9	100
2-Fluorophenol	1.277	1.284	0.05	0.5	100
2,4,6-Tribromophenol	0.118	0.118	0.05	0.0	100
2-Chlorophenol-d4	1.338	1.391	0.05	4.0	100
1,2-Dichlorobenzene-d4	0.872	0.918	0.05	5.3	100

FORM VII SV

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID: S2D2582 DFTPP Injection Date: 03/14/03

Instrument ID: S2 DFTPP Injection Time: 1549

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	70.0
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	52.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	19.5
365	Greater than 1.0% of mass 198	2.02
441	Present, but less than mass 443	9.0
442	40.0 - 99.9% of mass 198	53.9
443	17.0 - 23.0% of mass 442	10.7 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502P	SS0314B	S2D2583	03/14/03	1607
02	SV1011617DL	B0257-06ADL	S2D2590	03/14/03	2047
03					
04					
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/14/03 Time: 1607

Lab File ID: S2D2583 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 2138 0057

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.511	1.741	0.05	15.2	20.0
bis(2-Chloroethyl)Ether	1.361	1.434	0.05	5.4	100
2-Chlorophenol	1.329	1.409	0.05	6.0	100
2-Methylphenol	1.161	1.188	0.05	2.3	100
2,2'-oxybis(1-Chloropropane)	2.140	2.231	0.05	4.2	100
4-Methylphenol	1.157	1.239	0.05	7.1	100
N-Nitroso-di-n-propylamine	0.833	0.908	0.05	9.0	100
Hexachloroethane	0.572	0.606	0.05	5.9	100
Nitrobenzene	0.423	0.434	0.05	2.6	100
Isophorone	0.650	0.646	0.05	0.6	100
2-Nitrophenol	0.222	0.235	0.05	5.8	20.0
2,4-Dimethylphenol	0.297	0.281	0.05	5.4	100
2,4-Dichlorophenol	0.289	0.296	0.05	2.4	20.0
Naphthalene	1.057	1.090	0.05	3.1	100
4-Chloroaniline	0.302	0.243	0.05	19.5	100
bis(2-Chloroethoxy)methane	0.462	0.478	0.05	3.5	100
Hexachlorobutadiene	0.159	0.161	0.05	1.2	20.0
4-Chloro-3-Methylphenol	0.316	0.315	0.05	0.3	20.0
2-Methylnaphthalene	0.842	0.846	0.05	0.5	100
Hexachlorocyclopentadiene	0.211	0.219	0.05	3.8	100
2,4,6-Trichlorophenol	0.356	0.383	0.05	7.6	100
2,4,5-Trichlorophenol	0.397	0.418	0.05	5.3	100
2-Chloronaphthalene	1.138	1.200	0.05	5.4	100
2-Nitroaniline	0.599	0.622	0.05	3.8	100
Dimethylphthalate	1.421	1.430	0.05	0.6	100
Acenaphthylene	1.923	2.006	0.05	4.3	100
2,6-Dinitrotoluene	0.350	0.362	0.05	3.4	100
3-Nitroaniline	0.523	0.530	0.05	1.3	100
Acenaphthene	1.163	1.216	0.05	4.6	20.0
2,4-Dinitrophenol	0.124	0.162	0.05	30.6	100
4-Nitrophenol	0.113	0.137	0.05	21.2	100
Dibenzofuran	2.039	2.088	0.05	2.4	100
2,4-Dinitrotoluene	0.456	0.479	0.05	5.0	100
Diethylphthalate	1.436	1.482	0.05	3.2	100
4-Chlorophenyl-phenylether	0.601	0.611	0.05	1.7	100
Fluorene	1.270	1.313	0.05	3.4	100
4-Nitroaniline	0.515	0.519	0.05	0.8	100

FORM VII SV

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: S2 Calibration Date: 03/14/03 Time: 1607

Lab File ID: S2D2583 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 2138 0057

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.155	0.182	0.05	17.4	100
N-Nitrosodiphenylamine	0.384	0.398	0.05	3.6	20.0
4-Bromophenyl-phenylether	0.222	0.229	0.05	3.2	100
Hexachlorobenzene	0.252	0.253	0.05	0.4	100
Pentachlorophenol	0.089	0.106	0.05	19.1	20.0
Phenanthrene	1.067	1.100	0.05	3.1	100
Anthracene	1.059	1.072	0.05	1.2	100
Carbazole	0.941	0.962	0.05	2.2	100
Di-n-butylphthalate	1.559	1.598	0.05	2.5	100
Fluoranthene	1.165	1.163	0.05	0.2	20.0
Pyrene	1.152	1.212	0.05	5.2	100
Butylbenzylphthalate	0.694	0.744	0.05	7.2	100
3,3'-Dichlorobenzidine	0.415	0.406	0.01	2.2	100
Benzo(a)anthracene	1.056	1.081	0.05	2.4	100
Chrysene	0.996	1.040	0.05	4.4	100
bis(2-Ethylhexyl)phthalate	0.983	1.041	0.05	5.9	100
Di-n-octylphthalate	2.401	2.687	0.05	11.9	20.0
Benzo(b)fluoranthene	1.541	1.590	0.05	3.2	100
Benzo(k)fluoranthene	1.473	1.533	0.05	4.1	100
Benzo(a)pyrene	1.302	1.340	0.05	2.9	20.0
Indeno(1,2,3-cd)pyrene	1.524	1.585	0.05	4.0	100
Dibenzo(a,h)anthracene	1.257	1.333	0.05	6.0	100
Benzo(g,h,i)perylene	1.274	1.334	0.05	4.7	100
1,1'-Biphenyl	1.455	1.538	0.05	5.7	100
Acetophenone	1.698	1.737	0.05	2.3	100
Atrazine	0.142	0.154	0.05	8.4	100
Benzaldehyde	0.855	1.060	0.05	24.0	100
Caprolactum	0.113	0.125	0.05	10.6	100
Nitrobenzene-d5	0.447	0.466	0.05	4.2	100
2-Fluorobiphenyl	1.354	1.430	0.05	5.6	100
Terphenyl-d14	0.838	0.880	0.05	5.0	100
Phenol-d5	1.551	1.643	0.05	5.9	100
2-Fluorophenol	1.277	1.366	0.05	7.0	100
2,4,6-Tribromophenol	0.118	0.122	0.05	3.4	100
2-Chlorophenol-d4	1.338	1.402	0.05	4.8	100
1,2-Dichlorobenzene-d4	0.872	0.896	0.05	2.8	100

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK2R	75	78	85	28	41	90	72	78	0
02	S2RLCS	71	76	88	28	40	85	69	71	0
03	S2RLCSD	81	84	88	29	43	90	79	82	0
04	RB-021103	78	83	94	26	40	88	76	81	0
05										
06										
07										
08										
09										
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26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	WOD-SS-105	57	63	83	63	66	91	66	57	0
02	SV1110507	58	64	87	59	59	93	61	53	0
03	SV1011617	0D	0D	0D	0D	0D	0D	0D	0D	0
04	SBLK2M	88	86	94	95	93	98	93	83	0
05	S2MLCS	86	86	97	96	95*	109	94	84	1
06	SV1130406	79	78	90	87	86	102	87	76	0
07	SV1090608	65	70	78	71	72	84	72	64	0
08	SV1140406	69	74	76	75	76	85	75	67	0
09	SV1050507	61	68	70	66	67	80	69	59	0
10	SV1100204	70	76	79	75	77	92	77	68	0
11	SV1120204	70	76	80	76	78	94	76	69	0
12	WOD-SS-113	63	71	74	70	70	90	72	63	0
13	SV1130406MS	66	66	79	74	73	81	75	65	0
14	SV1130406MSD	70	71	81	79	77	84	76	67	0
15	SVDUP05	66	68	73	78	74	75	75	67	0
16	WOD-SS-109	65	68	68	72	70	69	69	63	0
17	WOD-SS-110	69	70	74	79	77	76	76	68	0
18	WOD-SS-111	71	72	78	80	78	80	78	69	0
19	WOD-SS-112	70	73	76	77	76	83	76	68	0
20	WOD-SS-114	70	73	83	81	78	88	79	69	0
21	SV1011617DL	0D	0D	0D	0D	0D	0D	0D	0D	0
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

\# Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	880	0.0	560	64	45-109
bis(2-Chloroethyl)Ether	880	0.0	470	53	43-104
2-Chlorophenol	880	0.0	540	61	43-107
2-Methylphenol	880	0.0	510	58	45-108
2,2'-oxybis(1-Chloropro	880	0.0	510	58	41-105
4-Methylphenol	880	0.0	470	53	48-109
N-Nitroso-di-n-prop.(1)	880	0.0	540	61	44-111
Hexachloroethane	880	0.0	510	58	40-102
Nitrobenzene	880	0.0	530	60	44-108
Isophorone	880	0.0	670	76	42-113
2-Nitrophenol	880	0.0	500	57	42-111
2,4-Dimethylphenol	880	0.0	380	43	37-107
2,4-Dichlorophenol	880	0.0	500	57	49-110
Naphthalene	880	0.0	470	53	44-112
4-Chloroaniline	880	0.0	210	24	4-102
bis(2-Chloroethoxy)meth	880	0.0	510	58	46-108
Hexachlorobutadiene	880	0.0	520	59	41-108
4-Chloro-3-Methylphenol	880	0.0	560	64	56-117
2-Methylnaphthalene	880	0.0	370	42*	46-110
Hexachlorocyclopentadie	880	0.0	260	30	10-118
2,4,6-Trichlorophenol	880	0.0	540	61	53-115
2,4,5-Trichlorophenol	880	0.0	540	61	59-113
2-Chloronaphthalene	880	0.0	510	58	52-112
2-Nitroaniline	880	0.0	440	50*	63-117
Dimethylphthalate	880	0.0	550	62	62-117
Acenaphthylene	880	0.0	500	57*	58-112
2,6-Dinitrotoluene	880	0.0	580	66	60-118
3-Nitroaniline	880	0.0	340	39	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	880	0.0	520	59	53-116
2,4-Dinitrophenol	880	0.0	210	24	15-136
4-Nitrophenol	880	0.0	600	68	50-129
Dibenzofuran	880	0.0	400	45*	61-112
2,4-Dinitrotoluene	880	0.0	580	66	59-123
Diethylphthalate	880	0.0	580	66	61-120
4-Chlorophenyl-phenylet	880	0.0	550	62	59-116
Fluorene	880	0.0	530	60*	63-115
4-Nitroaniline	880	0.0	580	66	35-124
4,6-Dinitro-2-methylphe	880	0.0	380	43	33-130
N-Nitrosodiphenylamine	880	0.0	640	73	50-150
4-Bromophenyl-phenyleth	880	0.0	520	59*	66-110
Hexachlorobenzene	880	0.0	540	61*	67-112
Pentachlorophenol	880	0.0	310	35	19-130
Phenanthrene	880	0.0	510	58*	70-115
Anthracene	880	0.0	490	56*	63-117
Carbazole	880	0.0	620	70	62-122
Di-n-butylphthalate	880	0.0	550	62*	70-120
Fluoranthene	880	0.0	530	60*	64-121
Pyrene	880	0.0	580	66	66-120
Butylbenzylphthalate	880	0.0	560	64	63-123
3,3'-Dichlorobenzidine	880	0.0	270	31	8-124
Benzo(a)anthracene	880	0.0	530	60	50-129
Chrysene	880	0.0	540	61	41-150
bis(2-Ethylhexyl)phthal	880	0.0	540	61*	64-115
Di-n-octylphthalate	880	0.0	480	54*	69-137
Benzo(b)fluoranthene	880	0.0	510	58*	61-129
Benzo(k)fluoranthene	880	0.0	560	64	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	880	0.0	450	51*	66-119
Indeno(1,2,3-cd)pyrene	880	0.0	540	61	56-128
Dibenzo(a,h)anthracene	880	0.0	520	59	58-128
Benzo(g,h,i)perylene	880	0.0	530	60	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	880	610	69	8	40	45-109
bis(2-Chloroethyl)Ether	880	510	58	9	40	43-104
2-Chlorophenol	880	560	64	5	40	43-107
2-Methylphenol	880	540	61	5	40	45-108
2,2'-oxybis(1-Chloropro	880	550	62	7	40	41-105
4-Methylphenol	880	530	60	12	40	48-109
N-Nitroso-di-n-prop.(1)	880	540	61	0	40	44-111
Hexachloroethane	880	540	61	5	40	40-102
Nitrobenzene	880	600	68	12	40	44-108
Isophorone	880	720	82	8	40	42-113
2-Nitrophenol	880	550	62	8	40	42-111
2,4-Dimethylphenol	880	350	40	7	40	37-107
2,4-Dichlorophenol	880	560	64	12	40	49-110
Naphthalene	880	500	57	7	40	44-112
4-Chloroaniline	880	230	26	8	40	4-102
bis(2-Chloroethoxy)meth	880	550	62	7	40	46-108
Hexachlorobutadiene	880	550	62	5	40	41-108
4-Chloro-3-Methylphenol	880	610	69	8	40	56-117
2-Methylnaphthalene	880	390	44*	5	40	46-110
Hexachlorocyclopentadie	880	280	32	6	40	10-118
2,4,6-Trichlorophenol	880	580	66	8	40	53-115
2,4,5-Trichlorophenol	880	540	61	0	40	59-113
2-Chloronaphthalene	880	560	64	10	40	52-112
2-Nitroaniline	880	500	57*	13	40	63-117
Dimethylphthalate	880	600	68	9	40	62-117
Acenaphthylene	880	540	61	7	40	58-112
2,6-Dinitrotoluene	880	620	70	6	40	60-118
3-Nitroaniline	880	410	46	16	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	880	570	65	10	40	53-116
2,4-Dinitrophenol	880	200	23	4	40	15-136
4-Nitrophenol	880	610	69	1	40	50-129
Dibenzofuran	880	420	48*	6	40	61-112
2,4-Dinitrotoluene	880	660	75	13	40	59-123
Diethylphthalate	880	640	73	10	40	61-120
4-Chlorophenyl-phenylet	880	580	66	6	40	59-116
Fluorene	880	570	65	8	40	63-115
4-Nitroaniline	880	700	80	19	40	35-124
4,6-Dinitro-2-methylphe	880	450	51	17	40	33-130
N-Nitrosodiphenylamine	880	620	70	4	40	50-150
4-Bromophenyl-phenyleth	880	560	64*	8	40	66-110
Hexachlorobenzene	880	580	66*	8	40	67-112
Pentachlorophenol	880	370	42	18	40	19-130
Phenanthrene	880	570	65*	11	40	70-115
Anthracene	880	520	59*	5	40	63-117
Carbazole	880	730	83	17	40	62-122
Di-n-butylphthalate	880	610	69*	11	40	70-120
Fluoranthene	880	590	67	11	40	64-121
Pyrene	880	620	70	6	40	66-120
Butylbenzylphthalate	880	610	69	8	40	63-123
3,3'-Dichlorobenzidine	880	350	40	25	40	8-124
Benzo(a)anthracene	880	580	66	10	40	50-129
Chrysene	880	590	67	9	40	41-150
bis(2-Ethylhexyl)phthal	880	590	67	9	40	64-115
Di-n-octylphthalate	880	500	57*	5	40	69-137
Benzo(b)fluoranthene	880	520	59*	2	40	61-129
Benzo(k)fluoranthene	880	560	64	0	40	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - EPA Sample No.: SV1130406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzo(a)pyrene	880	510	58*	13	40	66-119
Indeno(1,2,3-cd)pyrene	880	570	65	6	40	56-128
Dibenzo(a,h)anthracene	880	540	61	3	40	58-128
Benzo(g,h,i)perylene	880	580	66	10	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 60 outside limits
Spike Recovery: 26 out of 120 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2MLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		820	99	45-109
bis(2-Chloroethyl)Ether	830		690	83	43-104
2-Chlorophenol	830		730	88	43-107
2-Methylphenol	830		680	82	45-108
2,2'-oxybis(1-Chloropro	830		730	88	41-105
4-Methylphenol	830		700	84	48-109
N-Nitroso-di-n-prop.(1)	830		740	89	44-111
Hexachloroethane	830		710	86	40-102
Nitrobenzene	830		740	89	44-108
Isophorone	830		940	113	42-113
2-Nitrophenol	830		750	90	42-111
2,4-Dimethylphenol	830		330	40	37-107
2,4-Dichlorophenol	830		740	89	49-110
Naphthalene	830		680	82	44-112
4-Chloroaniline	830		380	46	4-102
bis(2-Chloroethoxy)meth	830		750	90	46-108
Hexachlorobutadiene	830		710	86	41-108
4-Chloro-3-Methylphenol	830		820	99	56-117
2-Methylnaphthalene	830		520	63	46-110
Hexachlorocyclopentadie	830		440	53	10-118
2,4,6-Trichlorophenol	830		770	93	53-115
2,4,5-Trichlorophenol	830		780	94	59-113
2-Chloronaphthalene	830		720	87	52-112
2-Nitroaniline	830		660	80	63-117
Dimethylphthalate	830		810	98	62-117
Acenaphthylene	830		720	87	58-112
2,6-Dinitrotoluene	830		820	99	60-118
3-Nitroaniline	830		550	66	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2MLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		760	92	53-116
2,4-Dinitrophenol	830		530	64	15-136
4-Nitrophenol	830		840	101	50-129
Dibenzofuran	830		570	69	61-112
2,4-Dinitrotoluene	830		890	107	59-123
Diethylphthalate	830		850	102	61-120
4-Chlorophenyl-phenylet	830		800	96	59-116
Fluorene	830		750	90	63-115
4-Nitroaniline	830		900	108	35-124
4,6-Dinitro-2-methylphe	830		600	72	33-130
N-Nitrosodiphenylamine	830		800	96	50-150
4-Bromophenyl-phenyleth	830		770	93	66-110
Hexachlorobenzene	830		800	96	67-112
Pentachlorophenol	830		490	59	19-130
Phenanthrene	830		740	89	70-115
Anthracene	830		730	88	63-117
Carbazole	830		1000	120	62-122
Di-n-butylphthalate	830		810	98	70-120
Fluoranthene	830		790	95	64-121
Pyrene	830		800	96	66-120
Butylbenzylphthalate	830		800	96	63-123
3,3'-Dichlorobenzidine	830		640	77	8-124
Benzo(a)anthracene	830		790	95	50-129
Chrysene	830		800	96	41-150
bis(2-Ethylhexyl)phthal	830		730	88	64-115
Di-n-octylphthalate	830		660	80	69-137
Benzo(b)fluoranthene	830		730	88	61-129
Benzo(k)fluoranthene	830		760	92	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2MLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	830		710	86	66-119
Indeno(1,2,3-cd)pyrene	830		780	94	56-128
Dibenzo(a,h)anthracene	830		750	90	58-128
Benzo(g,h,i)perylene	830		790	95	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 60 outside limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		7	28	0-127
bis(2-Chloroethyl)Ether	25		17	68	46-109
2-Chlorophenol	25		17	68	22-117
2-Methylphenol	25		14	56	40-104
2,2'-oxybis(1-Chloropro	25		16	64	10-134
4-Methylphenol	25		14	56	35-106
N-Nitroso-di-n-prop.(1)	25		22	88	44-122
Hexachloroethane	25		17	68	24-104
Nitrobenzene	25		18	72	47-112
Isophorone	25		20	80	48-118
2-Nitrophenol	25		18	72	29-122
2,4-Dimethylphenol	25		9	36	14-109
2,4-Dichlorophenol	25		19	76	31-122
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		6	24	0-152
bis(2-Chloroethoxy)meth	25		19	76	49-112
Hexachlorobutadiene	25		18	72	28-109
4-Chloro-3-Methylphenol	25		20	80	48-117
2-Methylnaphthalene	25		19	76	43-113
Hexachlorocyclopentadie	25		10	40	34-103
2,4,6-Trichlorophenol	25		18	72	34-127
2,4,5-Trichlorophenol	25		19	76	32-131
2-Chloronaphthalene	25		19	76	47-116
2-Nitroaniline	25		20	80	51-120
Dimethylphthalate	25		22	88	53-124
Acenaphthylene	25		20	80	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		19	76	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		20	80	50-121
2,4-Dinitrophenol	25		14	56	0-144
4-Nitrophenol	25		9	36	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		24	96	52-126
Diethylphthalate	25		23	92	53-126
4-Chlorophenyl-phenylet	25		22	88	50-124
Fluorene	25		22	88	52-125
4-Nitroaniline	25		20	80	47-117
4,6-Dinitro-2-methylphe	25		20	80	3-151
N-Nitrosodiphenylamine	25		24	96	50-150
4-Bromophenyl-phenyleth	25		20	80	51-124
Hexachlorobenzene	25		22	88	52-124
Pentachlorophenol	25		16	64	5-125
Phenanthrene	25		22	88	52-128
Anthracene	25		22	88	52-127
Di-n-butylphthalate	25		23	92	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		21	84	53-131
Butylbenzylphthalate	25		22	88	54-128
3,3'-Dichlorobenzidine	25		16	64	41-117
Benzo(a)anthracene	25		22	88	56-124
Chrysene	25		22	88	53-123
bis(2-Ethylhexyl)phthal	25		21	84	56-127
Di-n-octylphthalate	25		21	84	59-138
Benzo(b)fluoranthene	25		22	88	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		22	88	23-152
Dibenzo(a,h)anthracene	25		23	92	60-122
Benzo(g,h,i)perylene	25		23	92	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	7	28	0	40	0-127
bis(2-Chloroethyl)Ether	25	19	76	11	40	46-109
2-Chlorophenol	25	18	72	6	40	22-117
2-Methylphenol	25	14	56	0	40	40-104
2,2'-oxybis(1-Chloropro	25	18	72	12	40	10-134
4-Methylphenol	25	14	56	0	40	35-106
N-Nitroso-di-n-prop.(1)	25	23	92	4	40	44-122
Hexachloroethane	25	19	76	11	40	24-104
Nitrobenzene	25	20	80	10	40	47-112
Isophorone	25	22	88	10	40	48-118
2-Nitrophenol	25	19	76	5	40	29-122
2,4-Dimethylphenol	25	8	32	12	40	14-109
2,4-Dichlorophenol	25	20	80	5	40	31-122
Naphthalene	25	20	80	10	40	38-117
4-Chloroaniline	25	5	20	18	40	0-152
bis(2-Chloroethoxy)meth	25	20	80	5	40	49-112
Hexachlorobutadiene	25	19	76	5	40	28-109
4-Chloro-3-Methylphenol	25	21	84	5	40	48-117
2-Methylnaphthalene	25	20	80	5	40	43-113
Hexachlorocyclopentadie	25	12	48	18	40	34-103
2,4,6-Trichlorophenol	25	19	76	5	40	34-127
2,4,5-Trichlorophenol	25	20	80	5	40	32-131
2-Chloronaphthalene	25	20	80	5	40	47-116
2-Nitroaniline	25	20	80	0	40	51-120
Dimethylphthalate	25	22	88	0	40	53-124
Acenaphthylene	25	21	84	5	40	50-119
2,6-Dinitrotoluene	25	22	88	0	40	52-122
3-Nitroaniline	25	18	72	5	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	21	84	5	40	50-121
2,4-Dinitrophenol	25	15	60	7	40	0-144
4-Nitrophenol	25	8	32	12	40	0-160
Dibenzofuran	25	22	88	10	40	51-122
2,4-Dinitrotoluene	25	24	96	0	40	52-126
Diethylphthalate	25	23	92	0	40	53-126
4-Chlorophenyl-phenylet	25	23	92	4	40	50-124
Fluorene	25	22	88	0	40	52-125
4-Nitroaniline	25	20	80	0	40	47-117
4,6-Dinitro-2-methylphe	25	20	80	0	40	3-151
N-Nitrosodiphenylamine	25	23	92	4	40	50-150
4-Bromophenyl-phenyleth	25	20	80	0	40	51-124
Hexachlorobenzene	25	22	88	0	40	52-124
Pentachlorophenol	25	17	68	6	40	5-125
Phenanthrene	25	22	88	0	40	52-128
Anthracene	25	22	88	0	40	52-127
Di-n-butylphthalate	25	23	92	0	40	56-132
Fluoranthene	25	24	96	4	40	53-130
Pyrene	25	21	84	0	40	53-131
Butylbenzylphthalate	25	22	88	0	40	54-128
3,3'-Dichlorobenzidine	25	15	60	6	40	41-117
Benzo(a)anthracene	25	22	88	0	40	56-124
Chrysene	25	22	88	0	40	53-123
bis(2-Ethylhexyl)phthal	25	21	84	0	40	56-127
Di-n-octylphthalate	25	20	80	5	40	59-138
Benzo(b)fluoranthene	25	22	88	0	40	58-126
Benzo(k)fluoranthene	25	25	100	4	40	60-124
Benzo(a)pyrene	25	22	88	0	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: S2RLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	22	88	0	40	23-152
Dibenzo(a,h)anthracene	25	22	88	4	40	60-122
Benzo(g,h,i)perylene	25	22	88	4	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 59 outside limits
Spike Recovery: 0 out of 118 outside limits

COMMENTS: _____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D1907 Date Analyzed: 02/19/03

Instrument ID: S2 Time Analyzed: 1431

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	465371		8.11		1628765		10.54		980584		14.07	
	UPPER LIMIT	930742		8.61		3257530		11.04		1961168		14.57	
	LOWER LIMIT	232686		7.61		814383		10.04		490292		13.57	
	EPA SAMPLE NO.												
01	SBLK2R	527989		8.11		1892743		10.54		1130292		14.07	
02	S2RLCS	558831		8.11		1960108		10.54		1174314		14.07	
03	S2RLCSD	564542		8.11		2001787		10.53		1206090		14.07	
04	RB-021103	518637		8.10		1815350		10.53		1085100		14.06	
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D1907 Date Analyzed: 02/19/03

Instrument ID: S2 Time Analyzed: 1431

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	1698732	17.09	1725306	22.50	1055415	25.32
	UPPER LIMIT	3397464	17.59	3450612	23.00	2110830	25.82
	LOWER LIMIT	849366	16.59	862653	22.00	527708	24.82
	EPA SAMPLE NO.						
01	SBLK2R	1925889	17.09	1966619	22.49	1328947	25.32
02	S2RLCS	2025115	17.09	1999156	22.49	1332938	25.32
03	S2RLCSD	2093627	17.09	2062291	22.49	1373185	25.32
04	RB-021103	1849107	17.08	1880090	22.48	1262831	25.31
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2441 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 0101

		IS1 (DCB) AREA	#	RT	#	IS2 (NPT) AREA	#	RT	#	IS3 (ANT) AREA	#	RT	#
	12 HOUR STD	124632		7.41		414966		9.81		264964		13.30	
	UPPER LIMIT	249264		7.91		829932		10.31		529928		13.80	
	LOWER LIMIT	62316		6.91		207483		9.31		132482		12.80	
	EPA SAMPLE NO.												
01	WOD-SS-105	146545		7.42		488891		9.80		300596		13.31	
02	SV1110507	145519		7.42		460711		9.81		288890		13.31	
03	SV1011617	164368		7.42		541711		9.81		334323		13.31	
04													
05													
06													
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17													
18													
19													
20													
21													
22													

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2441 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 0101

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	453486	16.30	486063	21.68	308170	24.36
	UPPER LIMIT	906972	16.80	972126	22.18	616340	24.86
	LOWER LIMIT	226743	15.80	243032	21.18	154085	23.86
	EPA SAMPLE NO.						
01	WOD-SS-105	492082	16.31	414066	21.68	150985*	24.37
02	SV1110507	419135	16.31	362617	21.69	136925*	24.38
03	SV1011617	521030	16.32	539784	21.70	168707	24.38
04							
05							
06							
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18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2460 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 1605

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	73762	7.35	249404	9.75	167848	13.25
	UPPER LIMIT	147524	7.85	498808	10.25	335696	13.75
	LOWER LIMIT	36881	6.85	124702	9.25	83924	12.75
	EPA SAMPLE NO.						
01	SBLK2M	70569	7.35	236732	9.75	159041	13.25
02	S2MLCS	65602	7.36	222127	9.75	151438	13.25
03	SV1130406	62340	7.35	213329	9.75	141104	13.25
04	SV1090608	65543	7.35	221674	9.75	142151	13.25
05	SV1140406	66389	7.36	224223	9.75	142239	13.24
06	SV1050507	66511	7.36	223839	9.75	138540	13.24
07	SV1100204	66201	7.35	223293	9.75	144454	13.24
08	SV1120204	66878	7.35	232599	9.74	144412	13.23
09	WOD-SS-113	66975	7.35	227334	9.74	143614	13.23
10	SV1130406MS	65865	7.35	227945	9.74	154767	13.24
11	SV1130406MSD	65247	7.35	223451	9.74	153294	13.23
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2460 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 1605

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	303910	16.25	342410	21.61	219882	24.29
	UPPER LIMIT	607820	16.75	684820	22.11	439764	24.79
	LOWER LIMIT	151955	15.75	171205	21.11	109941	23.79
	EPA SAMPLE NO.						
01	SBLK2M	285265	16.25	320641	21.60	225133	24.29
02	S2MLCS	282040	16.25	313641	21.61	219483	24.29
03	SV1130406	254926	16.24	273324	21.60	200582	24.29
04	SV1090608	267108	16.24	303586	21.60	215100	24.29
05	SV1140406	271714	16.23	308919	21.60	217942	24.29
06	SV1050507	255779	16.24	279404	21.60	204211	24.29
07	SV1100204	270808	16.24	308149	21.60	214149	24.28
08	SV1120204	260517	16.24	283522	21.60	209148	24.29
09	WOD-SS-113	265686	16.24	296513	21.60	191512	24.28
10	SV1130406MS	286282	16.24	291346	21.60	181143	24.28
11	SV1130406MSD	286537	16.24	303773	21.60	208910	24.28
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2564 Date Analyzed: 03/14/03

Instrument ID: S2 Time Analyzed: 0228

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	320578	7.23	1098299	9.62	556989	13.11
	UPPER LIMIT	641156	7.73	2196598	10.12	1113978	13.61
	LOWER LIMIT	160289	6.73	549150	9.12	278495	12.61
	EPA SAMPLE NO.						
01	SVDUP05	293635	7.22	1065997	9.61	521545	13.09
02	WOD-SS-109	293077	7.22	1038975	9.61	507044	13.09
03	WOD-SS-110	281189	7.22	1016234	9.60	507354	13.10
04	WOD-SS-111	279460	7.22	988081	9.61	512282	13.09
05	WOD-SS-112	289925	7.22	1020227	9.61	503631	13.09
06	WOD-SS-114	298290	7.22	1073246	9.61	543742	13.09
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2564 Date Analyzed: 03/14/03

Instrument ID: S2 Time Analyzed: 0228

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	896259		16.10		912931		21.46		640648		24.14	
	UPPER LIMIT	1792518		16.60		1825862		21.96		1281296		24.64	
	LOWER LIMIT	448130		15.60		456466		20.96		320324		23.64	
	EPA SAMPLE NO.												
01	SVDUP05	816074		16.09		815810		21.45		528978		24.13	
02	WOD-SS-109	805684		16.08		797538		21.45		521998		24.13	
03	WOD-SS-110	833460		16.09		844033		21.45		559605		24.13	
04	WOD-SS-111	812186		16.09		818466		21.45		545618		24.13	
05	WOD-SS-112	790649		16.08		808253		21.45		509775		24.13	
06	WOD-SS-114	862738		16.09		853287		21.45		532553		24.13	
07													
08													
09													
10													
11													
12													
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16													
17													
18													
19													
20													
21													
22													

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2583 Date Analyzed: 03/14/03

Instrument ID: S2 Time Analyzed: 1607

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	356422		7.20		1194706		9.60		564854		13.08	
	UPPER LIMIT	712844		7.70		2389412		10.10		1129708		13.58	
	LOWER LIMIT	178211		6.70		597353		9.10		282427		12.58	
	EPA SAMPLE NO.												
01	SV1011617DL	296123		7.20		1080247		9.59		522587		13.07	
02													
03													
04													
05													
06													
07													
08													
09													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab File ID (Standard): S2D2583 Date Analyzed: 03/14/03

Instrument ID: S2 Time Analyzed: 1607

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	902736		16.07		883351		21.44		609392		24.11	
	UPPER LIMIT	1805472		16.57		1766702		21.94		1218784		24.61	
	LOWER LIMIT	451368		15.57		441676		20.94		304696		23.61	
	EPA SAMPLE NO.												
01	SV1011617DL	806192		16.07		721612		21.43		450074		24.11	
02													
03													
04													
05													
06													
07													
08													
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16													
17													
18													
19													
20													
21													
22													

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) WATER Lab Sample ID: MB-5680

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9441F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix: (soil/water) SOIL Lab Sample ID: MB-5743

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9519F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 02/27/03

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660B1	AR1660B1	02/23/03	0242	6.78	22.14
23	BBLK1L	MB-5680	02/23/03	0352	6.78	22.13
24	B1LLCS	LCS-5680	02/23/03	0427	6.78	22.14
25	B1LLCSD	LCSD-5680	02/23/03	0503	6.78	22.13
26	RB-021103	B0257-18D	02/23/03	0649	6.78	22.14
27	AR1660B2	AR1660B2	02/23/03	1131	6.78	22.14
28	AR1660BU	AR1660BU	02/25/03	2006	6.78	22.14
29	WOD-SS-114	B0257-16A	02/25/03	2228	6.78	22.14
30	SV1140406	B0257-17A	02/25/03	2303	6.78	22.14
31	AR1660BV	AR1660BV	02/26/03	0531	6.78	22.14
32	AR1660BA	AR1660BA	02/27/03	1210	6.78	22.14

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	BBLK1A	MB-5743	02/27/03	1554	6.78	22.14
02	B1ALCS	LCS-5743	02/27/03	1629	6.78	22.14
03	WOD-SS-109	B0257-02A	02/27/03	1705	6.78	22.14
04	SV1090608	B0257-03A	02/27/03	1740	6.78	22.13
05	WOD-SS-105	B0257-04A	02/27/03	1816	6.78	22.13
06	SV1050507	B0257-05A	02/27/03	1851	6.78	22.13
07	AR1254BX	AR1254BX	02/27/03	2112	6.78	22.14
08	AR1660BB	AR1660BB	02/27/03	2147	6.78	22.13
09	SV1011617	B0257-06A	02/27/03	2258	6.79	22.17
10	SVDUP05	B0257-07A	02/27/03	2334	6.77	22.13
11	SV1100204	B0257-08A	02/28/03	0009	6.77	22.13
12	WOD-SS-110	B0257-09A	02/28/03	0044	6.77	22.13
13	WOD-SS-111	B0257-10A	02/28/03	0119	6.77	22.13
14	SV1110507	B0257-11A	02/28/03	0155	6.77	22.13
15	WOD-SS-112	B0257-12A	02/28/03	0230	6.77	22.13
16	SV1120204	B0257-13A	02/28/03	0305	6.78	22.13
17	WOD-SS-113	B0257-14A	02/28/03	0341	6.77	22.13
18	SV1130406	B0257-15A	02/28/03	0416	6.78	22.13
19	AR1254BY	AR1254BY	02/28/03	0637	6.77	22.13
20	AR1660BY	AR1660BY	02/28/03	0712	6.78	22.13
21	SV1130406MS	B0257-15AMS	02/28/03	0823	6.77	22.13
22	SV1130406MSD	B0257-15AMSD	02/28/03	0858	6.78	22.13
23	AR1660BZ	AR1660BZ	02/28/03	1154	6.78	22.13
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660B1	AR1660B1	02/23/03	0242	8.44	25.35
23	BBLK1L	MB-5680	02/23/03	0352	8.44	25.34
24	B1LLCS	LCS-5680	02/23/03	0427	8.44	25.34
25	B1LLCSD	LCSD-5680	02/23/03	0503	8.45	25.34
26	RB-021103	B0257-18D	02/23/03	0649	8.44	25.35
27	AR1660B2	AR1660B2	02/23/03	1131	8.44	25.34
28	AR1660BU	AR1660BU	02/25/03	2006	8.45	25.35
29	WOD-SS-114	B0257-16A	02/25/03	2228	8.45	25.35
30	SV1140406	B0257-17A	02/25/03	2303	8.45	25.35
31	AR1660BV	AR1660BV	02/26/03	0531	8.45	25.35
32	AR1660BA	AR1660BA	02/27/03	1210	8.45	25.35

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	BBLK1A	MB-5743	02/27/03	1554	8.45	25.35
02	B1ALCS	LCS-5743	02/27/03	1629	8.45	25.35
03	WOD-SS-109	B0257-02A	02/27/03	1705	8.45	25.35
04	SV1090608	B0257-03A	02/27/03	1740	8.45	25.35
05	WOD-SS-105	B0257-04A	02/27/03	1816	8.45	25.35
06	SV1050507	B0257-05A	02/27/03	1851	8.44	25.34
07	AR1254BX	AR1254BX	02/27/03	2112	8.45	25.35
08	AR1660BB	AR1660BB	02/27/03	2147	8.44	25.34
09	SV1011617	B0257-06A	02/27/03	2258	8.46	25.34
10	SVDUP05	B0257-07A	02/27/03	2334	8.44	25.34
11	SV1100204	B0257-08A	02/28/03	0009	8.44	25.34
12	WOD-SS-110	B0257-09A	02/28/03	0044	8.44	25.34
13	WOD-SS-111	B0257-10A	02/28/03	0119	8.44	25.34
14	SV1110507	B0257-11A	02/28/03	0155	8.44	25.34
15	WOD-SS-112	B0257-12A	02/28/03	0230	8.44	25.34
16	SV1120204	B0257-13A	02/28/03	0305	8.44	25.34
17	WOD-SS-113	B0257-14A	02/28/03	0341	8.44	25.34
18	SV1130406	B0257-15A	02/28/03	0416	8.44	25.34
19	AR1254BY	AR1254BY	02/28/03	0637	8.44	25.34
20	AR1660BY	AR1660BY	02/28/03	0712	8.44	25.34
21	SV1130406MS	B0257-15AMS	02/28/03	0823	8.44	25.34
22	SV1130406MSD	B0257-15AMSD	02/28/03	0858	8.45	25.35
23	AR1660BZ	AR1660BZ	02/28/03	1154	8.45	25.35
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11582.000	0.01	2.9	15.0
(2)	24115.960	23131.000	0.01	4.1	15.0
(3)	14202.320	13615.000	0.01	4.1	15.0
Aroclor-1260	29455.240	28477.000	0.01	3.3	15.0
(2)	40190.280	43668.000	0.01	8.6	15.0
(3)	23147.960	23315.000	0.01	0.7	15.0
Tetrachloro-m-xylene	503358.00	515350.00	0.01	2.4	15.0
Decachlorobiphenyl	581298.00	566950.00	0.01	2.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45838.000	0.01	2.4	15.0
(2)	24183.600	23075.000	0.01	4.6	15.0
(3)	20737.640	20030.000	0.01	3.4	15.0
Aroclor-1260	45409.320	45242.000	0.01	0.4	15.0
(2)	46248.440	46834.000	0.01	1.3	15.0
(3)	64584.960	69479.000	0.01	7.6	15.0
Tetrachloro-m-xylene	741526.00	731650.00	0.01	1.3	15.0
Decachlorobiphenyl	711418.00	760550.00	0.01	6.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11618.000	0.01	2.6	15.0
(2)	24115.960	22936.000	0.01	4.9	15.0
(3)	14202.320	13450.000	0.01	5.3	15.0
Aroclor-1260	29455.240	28739.000	0.01	2.4	15.0
(2)	40190.280	43187.000	0.01	7.4	15.0
(3)	23147.960	23193.000	0.01	0.2	15.0
Tetrachloro-m-xylene	503358.00	516500.00	0.01	2.6	15.0
Decachlorobiphenyl	581298.00	564750.00	0.01	2.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45717.000	0.01	2.6	15.0
(2)	24183.600	23000.000	0.01	4.9	15.0
(3)	20737.640	20262.000	0.01	2.3	15.0
Aroclor-1260	45409.320	44843.000	0.01	1.2	15.0
(2)	46248.440	46669.000	0.01	0.9	15.0
(3)	64584.960	69305.000	0.01	7.3	15.0
Tetrachloro-m-xylene	741526.00	740050.00	0.01	0.2	15.0
Decachlorobiphenyl	711418.00	766150.00	0.01	7.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/25/03 Time: 2006

Lab File ID: E1D9477F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10501.000	0.01	12.0	15.0	
(2)	24115.960	20054.000	0.01	16.8	15.0	<-
(3)	14202.320	11825.000	0.01	16.7	15.0	<-
Aroclor-1260	29455.240	25201.000	0.01	14.4	15.0	
(2)	40190.280	38482.000	0.01	4.2	15.0	
(3)	23147.960	19963.000	0.01	13.8	15.0	
Tetrachloro-m-xylene	503358.00	467050.00	0.01	7.2	15.0	
Decachlorobiphenyl	581298.00	499800.00	0.01	14.0	15.0	

715/0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/25/03 Time: 2006

Lab File ID: E1D9477R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	41761.000	0.01	11.1	15.0
(2)	24183.600	20863.000	0.01	13.7	15.0
(3)	20737.640	18573.000	0.01	10.4	15.0
Aroclor-1260	45409.320	41967.000	0.01	7.6	15.0
(2)	46248.440	43109.000	0.01	6.8	15.0
(3)	64584.960	63083.000	0.01	2.3	15.0
Tetrachloro-m-xylene	741526.00	673100.00	0.01	9.2	15.0
Decachlorobiphenyl	711418.00	680800.00	0.01	4.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/26/03 Time: 0531

Lab File ID: E1D9493F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10586.000	0.01	11.3	15.0
(2)	24115.960	20810.000	0.01	13.7	15.0
(3)	14202.320	12196.000	0.01	14.1	15.0
Aroclor-1260	29455.240	25550.000	0.01	13.2	15.0
(2)	40190.280	39094.000	0.01	2.7	15.0
(3)	23147.960	20797.000	0.01	10.2	15.0
Tetrachloro-m-xylene	503358.00	467600.00	0.01	7.1	15.0
Decachlorobiphenyl	581298.00	513250.00	0.01	11.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/26/03 Time: 0531

Lab File ID: E1D9493R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	42712.000	0.01	9.0	15.0
(2)	24183.600	21285.000	0.01	12.0	15.0
(3)	20737.640	18829.000	0.01	9.2	15.0
Aroclor-1260	45409.320	43041.000	0.01	5.2	15.0
(2)	46248.440	44400.000	0.01	4.0	15.0
(3)	64584.960	65572.000	0.01	1.5	15.0
Tetrachloro-m-xylene	741526.00	678050.00	0.01	8.6	15.0
Decachlorobiphenyl	711418.00	716450.00	0.01	0.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 1210

Lab File ID: E1D9513F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11004.000	0.01	7.8	15.0
(2)	24115.960	21096.000	0.01	12.5	15.0
(3)	14202.320	12263.000	0.01	13.6	15.0
Aroclor-1260	29455.240	26685.000	0.01	9.4	15.0
(2)	40190.280	40500.000	0.01	0.8	15.0
(3)	23147.960	21191.000	0.01	8.4	15.0
Tetrachloro-m-xylene	503358.00	479900.00	0.01	4.7	15.0
Decachlorobiphenyl	581298.00	523950.00	0.01	9.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 1210

Lab File ID: E1D9513R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	42686.000	0.01	9.1	15.0
(2)	24183.600	21593.000	0.01	10.7	15.0
(3)	20737.640	19116.000	0.01	7.8	15.0
Aroclor-1260	45409.320	42581.000	0.01	6.2	15.0
(2)	46248.440	43735.000	0.01	5.4	15.0
(3)	64584.960	65202.000	0.01	1.0	15.0
Tetrachloro-m-xylene	741526.00	692900.00	0.01	6.6	15.0
Decachlorobiphenyl	711418.00	703850.00	0.01	1.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2112

Lab File ID: E1D9528F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 0130 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1254	14678.160	14634.000	0.01	0.3	15.0
(2)	25933.200	25021.000	0.01	3.5	15.0
(3)	22371.000	21590.000	0.01	3.5	15.0
Tetrachloro-m-xylene	503358.00	475550.00	0.01	5.5	15.0
Decachlorobiphenyl	581298.00	512350.00	0.01	11.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2112

Lab File ID: E1D9528R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 0130 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1254	33918.760	33035.000	0.01	2.6	15.0
(2)	45868.280	45267.000	0.01	1.3	15.0
(3)	36428.320	36675.000	0.01	0.7	15.0
Tetrachloro-m-xylene	741526.00	707850.00	0.01	4.5	15.0
Decachlorobiphenyl	711418.00	709450.00	0.01	0.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2147

Lab File ID: E1D9529F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11250.000	0.01	5.7	15.0
(2)	24115.960	21994.000	0.01	8.8	15.0
(3)	14202.320	12851.000	0.01	9.5	15.0
Aroclor-1260	29455.240	27838.000	0.01	5.5	15.0
(2)	40190.280	42216.000	0.01	5.0	15.0
(3)	23147.960	22380.000	0.01	3.3	15.0
Tetrachloro-m-xylene	503358.00	495250.00	0.01	1.6	15.0
Decachlorobiphenyl	581298.00	549700.00	0.01	5.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2147

Lab File ID: E1D9529R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44357.000	0.01	5.5	15.0
(2)	24183.600	22268.000	0.01	7.9	15.0
(3)	20737.640	19763.000	0.01	4.7	15.0
Aroclor-1260	45409.320	44269.000	0.01	2.5	15.0
(2)	46248.440	45893.000	0.01	0.8	15.0
(3)	64584.960	67428.000	0.01	4.4	15.0
Tetrachloro-m-xylene	741526.00	715400.00	0.01	3.5	15.0
Decachlorobiphenyl	711418.00	743400.00	0.01	4.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 0637

Lab File ID: E1D9544F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 0130 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1254	14678.160	15112.000	0.01	3.0	15.0
(2)	25933.200	26098.000	0.01	0.6	15.0
(3)	22371.000	22951.000	0.01	2.6	15.0
Tetrachloro-m-xylene	503358.00	492750.00	0.01	2.1	15.0
Decachlorobiphenyl	581298.00	534300.00	0.01	8.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 0637

Lab File ID: E1D9544R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 0130 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1254	33918.760	33669.000	0.01	0.7	15.0
(2)	45868.280	46379.000	0.01	1.1	15.0
(3)	36428.320	37522.000	0.01	3.0	15.0
Tetrachloro-m-xylene	741526.00	724500.00	0.01	2.3	15.0
Decachlorobiphenyl	711418.00	717350.00	0.01	0.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 0712

Lab File ID: E1D9545F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11626.000	0.01	2.6	15.0
(2)	24115.960	23728.000	0.01	1.6	15.0
(3)	14202.320	13892.000	0.01	2.2	15.0
Aroclor-1260	29455.240	29158.000	0.01	1.0	15.0
(2)	40190.280	44601.000	0.01	11.0	15.0
(3)	23147.960	24049.000	0.01	3.9	15.0
Tetrachloro-m-xylene	503358.00	517800.00	0.01	2.9	15.0
Decachlorobiphenyl	581298.00	571450.00	0.01	1.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 0712

Lab File ID: E1D9545R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	46583.000	0.01	0.8	15.0
(2)	24183.600	23354.000	0.01	3.4	15.0
(3)	20737.640	20530.000	0.01	1.0	15.0
Aroclor-1260	45409.320	45444.000	0.01	0.1	15.0
(2)	46248.440	46827.000	0.01	1.2	15.0
(3)	64584.960	69767.000	0.01	8.0	15.0
Tetrachloro-m-xylene	741526.00	744450.00	0.01	0.4	15.0
Decachlorobiphenyl	711418.00	771900.00	0.01	8.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 1154

Lab File ID: E1D9553F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11344.000	0.01	4.9	15.0
(2)	24115.960	23651.000	0.01	1.9	15.0
(3)	14202.320	13844.000	0.01	2.5	15.0
Aroclor-1260	29455.240	29283.000	0.01	0.6	15.0
(2)	40190.280	44966.000	0.01	11.9	15.0
(3)	23147.960	24026.000	0.01	3.8	15.0
Tetrachloro-m-xylene	503358.00	519750.00	0.01	3.2	15.0
Decachlorobiphenyl	581298.00	570650.00	0.01	1.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID: E1 Calibration Date: 02/28/03 Time: 1154

Lab File ID: E1D9553R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	46624.000	0.01	0.7	15.0
(2)	24183.600	23501.000	0.01	2.8	15.0
(3)	20737.640	20836.000	0.01	0.5	15.0
Aroclor-1260	45409.320	46032.000	0.01	1.4	15.0
(2)	46248.440	47509.000	0.01	2.7	15.0
(3)	64584.960	71270.000	0.01	10.4	15.0
Tetrachloro-m-xylene	741526.00	755750.00	0.01	1.9	15.0
Decachlorobiphenyl	711418.00	781850.00	0.01	9.9	15.0

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: SV1130406

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	350	0.00	230	66	62-155
Aroclor-1260	350	0.00	240	68	56-173

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	350	260	74	11	40	62-155
Aroclor-1260	350	280	80	16	40	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix Spike - Sample No.: B1ALCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		300	91	62-155
Aroclor-1260	330		320	97	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1L	89	90	94	102			0
02	B1LLCS	97	93	100	109			0
03	B1LLCSD	94	88	97	106			0
04	RB-021103	81	83	86	95			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	WOD-SS-114	76	79	72	81			0
02	SV1140406	55	57	53	60			0
03	BBLK1A	90	91	80	91			0
04	B1ALCS	92	94	85	97			0
05	WOD-SS-109	62	63	60	66			0
06	SV1090608	61	63	59	65			0
07	WOD-SS-105	54	54	53	59			0
08	SV1050507	60	62	58	64			0
09	SV1011617	56	52	927*	78			1
10	SVDUP05	64	61	57	62			0
11	SV1100204	68	66	61	68			0
12	WOD-SS-110	62	61	57	62			0
13	WOD-SS-111	65	65	60	66			0
14	SV1110507	56	52	48	54			0
15	WOD-SS-112	58	58	55	60			0
16	SV1120204	62	55	60	65			0
17	WOD-SS-113	59	62	55	59			0
18	SV1130406	68	69	62	68			0
19	SV1130406MS	63	68	62	68			0
20	SV1130406MSD	71	72	69	77			0
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (42-147)
S2 (DCB) = Decachlorobiphenyl (29-155)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 10
PCB IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Lab Sample ID: B0257-11A Date(s) Analyzed: 02/28/03 02/28/03

Instrument ID (1): E1 Instrument ID (2): E1

GC Column(1): RTXCLPPEST 2 ID: 0.53(mm) GC Column(2): RTXCLPPEST ID: 0.53(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	13.05	13.02	13.16	140		
Aroclor-1254	2	14.82	14.79	14.93	160		
	3	16.79	16.76	16.90	160		
COLUMN 1	4						
	5					150	
	1	16.23	16.18	16.32	140		
	2	17.46	17.42	17.56	140		
	3	19.52	19.46	19.60	1100		
COLUMN 2	4						
	5					460	101.6
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT		JOB NUMBER	
NASA Wallops Island		B0257	
SUBJECT			
PCBs			
BASED ON		DRAWING NUMBER	
8082			
BY	CHECKED BY	APPROVED BY	DATE
SCS			

2/28/03

WOD - SU - 111 - 0507

Aroclor - 1254 150 ug/kg

	Resp #1	RF1
Peak #1	5057	14588
Peak #2	10125	25877
Peak #3	8853	22396
AVG:	8011.66	20,953.66

$$\frac{(8011.66\ \text{area})(10{,}000\ \text{ml})(1)}{(20{,}953.66\ \text{area})(30.8\ \text{g})(0.81)(1\ \text{ml})} = 153\ \text{ug/g}$$

≈ 150 ug/kg

Data File: E1D9536F.D
Report Date: 04-Mar-2003 15:15

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227F.B\E1D9536F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227R.B\E1D9536R.D
Inj Date : 28-FEB-2003 01:55
Sample Info: B0257-11A,SV1110507,MB-5743,pcb.sub,,
Misc Info : 0,,,2,,,,30.8,,,21-FEB-03,12-FEB-03,B0257
Cal Date : 04-MAR-2003 14:20
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.800	Weight of sample extracted (g)
M	19.000	% Moisture

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/Kg)	Conc#2 (ug/Kg)	Target Range	Ratio
Tetrachloro-m-xylene	6.773	8.443	11336	15541	9.0	8.4		100.00
Decachlorobiphenyl	22.127	25.340	11185	15339	7.7	8.6		100.00
Aroclor-1254	13.050	16.230	5057	12297	140	140	80.00- 120.00	100.00
	14.817	17.460	10125	16349	160	140	145.98- 185.98	200.22
	16.787	19.520	8853	98849	160	1100	127.23- 167.23	175.06
			Average of Peak Amounts =		150	460		

SZ 03/05/03

001138

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 21, 2003**

FROM: **ERIN M. FAUST** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, pH AND TOC**
CTO 848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0257

SAMPLES: 16/Soils/

FTA-SU-101-1617	WOD-SS-105	WOD-SS-109
WOD-SS-110	WOD-SS-111	WOD-SS-112
WOD-SS-113	WOD-SS-114	WOD-SU-105-0507
WOD-SU-109-0608	WOD-SU-110-0204	WOD-SU-111-0507
WOD-SU-112-0204	WOD-SU-113-0406	WOD-SU-114-0406
WOD-SS-DUP05		

1/Aqueous/

RB-021103

Overview

The sample set for CTO 848, SDG B0257, NASA Wallops Island, consists of eight (8) surface soil samples, eight (8) subsurface soil samples and one (1) aqueous rinsate blank, RB-021103. One (1) field duplicate pair (WOD-SS-DUP05 / WOD-SS-109) is included within this SDG.

The surface soil samples (WOD-SS-105, WOD-SS-109, WOD-SS-110, WOD-SS-111, WOD-SS-112, WOD-SS-113, WOD-SS-114 and WOD-SS-DUP05) were analyzed for target analyte list (TAL) metals, pH and grain size, with the exception of sample WOD-SS-DUP05, which was not analyzed for grain size. The subsurface soil samples (WOD-SU-105-0507, WOD-SU-109-0608, WOD-SU-110-0204, WOD-SU-111-0507, WOD-SU-112-0204, WOD-SU-113-0406, WOD-SU-114-0406 and FTA-SU-101-1617) were analyzed for TAL metals only. Sample RB-021103 was analyzed for TAL metals and total organic carbon (TOC). The samples were collected by Tetra Tech NUS on February 11, 2003 and analyzed by Mitkem Corporation. Metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 methods 7470A and 7471A. Analyses for pH were conducted using SW-846 method 9045C. Analyses for TOC were conducted using EPA method 415.1. Grain size analyses were conducted using ASTM method D422.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, field duplicate results, laboratory control sample (LCS) results, detection limits and analyte quantitation.

Metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) instrumentation. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) instrumentation.

Areas of concern with respect to data quality are listed below.

Minor Problems

- Analyses for pH should be conducted immediately. The samples were received at the laboratory on 2/12/03 and were analyzed two days later on 2/14/03. All results reported for pH were qualified as estimated, "J".

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Samples Affected: All soil samples

Analyte	Maximum Concentration	Action Level
Aluminum	42.8 µg/L	10.7 mg/kg
Antimony	6.2 µg/L	1.55 mg/kg
Iron	45.5 µg/L	11.38 mg/kg
Magnesium	40.7 µg/L	10.18 mg/kg
Manganese[(1)]	0.12 mg/kg	0.60 mg/kg
Nickel	1.5 µg/L	0.38 mg/kg
Potassium	698.2 µg/L	174.55 mg/kg
Sodium	887 µg/L	221.75 mg/kg

[(1)] Maximum contamination present in a solid preparation blank.

An action level of five times the maximum contaminant level has been established to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results < the action level reported for nickel, potassium and sodium were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetected.

- The interfering analyte aluminum was present in sample FTA-SU-101-1617 at a concentration that was comparable to the level of aluminum in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc were present in the ICS solution at concentrations which exceeded the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for cadmium, selenium and silver in the affected sample. The nondetected result reported for selenium was qualified as biased low, "UL". The positive result reported for cadmium was qualified as biased low, "L". The positive result reported for silver was qualified as biased high, "K".

- The interfering analytes aluminum and iron were present in sample WOD-SS-105 at concentrations that were comparable to the levels of aluminum and iron in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc were present in the ICS solution at concentrations which exceeded the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for antimony, cadmium, selenium and silver in the affected sample. The nondetected results reported for antimony and selenium were qualified as biased low, "UL". The positive

result reported for cadmium was qualified as biased low, "L". The positive result reported for silver was qualified as biased high, "K".

- The interfering analytes aluminum and iron were present in sample WOD-SU-105-0507 at concentrations that were comparable to the levels of aluminum and iron in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc were present in the ICS solution at concentrations which exceeded the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for antimony, arsenic, cadmium, cobalt, selenium, silver and zinc in the affected sample. The nondetected results reported for antimony, cadmium and selenium were qualified as biased low, "UL". The positive results reported for arsenic and zinc were qualified as biased low, "L". The positive results reported for cobalt and silver were qualified as biased high, "K".

- The interfering analytes aluminum, calcium and iron were present in sample WOD-SU-111-0507 at concentrations that were comparable to the levels of aluminum, calcium and iron in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, barium, cadmium, chromium, cobalt, copper, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium and zinc were present in the ICS solution at concentrations which exceeded the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for antimony, arsenic, cadmium, cobalt, potassium, selenium, sodium and thallium in the affected sample. The nondetected result reported for selenium was qualified as biased low, "UL". The positive results reported for antimony, arsenic and cadmium were qualified as biased low, "L". The positive results reported for cobalt, potassium, sodium and thallium were qualified as biased high, "K".

Notes

The rinsate blank was not used to establish blank action levels and was not qualified due to laboratory blank contamination.

Sample WOD-SS-DUP05 was recorded incorrectly on the chain of custody (COC) as WOD-SU-DUP05. The sample ID was corrected in the electronic database.

Although the COC did not indicate metals analyses for sample FTA-SU-101-1617; metals analyses were performed on this sample. These results are included within this SDG.

The laboratory incorrectly identified several sample IDs by labeling sections of the sample ID as "SV" when it should have been "SU". The sample IDs were corrected in the electronic database.

The grain size results were not put into the electronic database, however, the sample result forms are included within Appendix B.

The grain size results were reported incorrectly for sample WOD-SS-110. The laboratory was contacted and faxed corrected results for this sample on May 21, 2003.

Contract Required Detection Limit (CRDL) and ICP serial dilution percent recoveries could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the Interference Check Standard A (ICSA) on the Form 4.

TOC results for the soil samples are included within a separate SDG.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. pH results were qualified due to holding time noncompliance.

Other Factors Affecting Data Quality: Several analytes were qualified due to ICS noncompliance in samples FTA-SU-101-1617, WOD-SS-105, WOD-SU-105-0507 and WOD-SU-111-0507.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 as amended for use within USEPA Region III.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

K - Positive result is considered biased high, "K", as a result of technical noncompliances.

L - Positive result is considered biased low, "L", as a result of technical noncompliances.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	FTA-SU-101-1617	nsample	WOD-SS-105	nsample	WOD-SS-109
samp_date	2/11/2003	samp_date	2/11/2003	samp_date	2/11/2003
lab_id	B0257-06A	lab_id	B0257-04A	lab_id	B0257-02A
qc_type	NM	qc_type	NM	qc_type	NM
units	MG/KG	units	MG/KG	units	MG/KG
Pct_Solids	88	Pct_Solids	85	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5810		
ANTIMONY	3.4		
ARSENIC	2.6		
BARIUM	47.0		
BERYLLIUM	0.15		
CADMIUM	0.07	L	K
CALCIUM	553		
CHROMIUM	8.5		
COBALT	1.7		
COPPER	4.7		
IRON	3830		
LEAD	80.4		
MAGNESIUM	642		
MANGANESE	53.0		
MERCURY	0.05		
NICKEL	25.8		
POTASSIUM	282		
SELENIUM	0.43	UL	K
SILVER	0.21	K	K
SODIUM	132	B	A
THALLIUM	0.14	U	
VANADIUM	58.5		
ZINC	30.2		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8180		
ANTIMONY	0.16	UL	K
ARSENIC	9.5		
BARIUM	51.9		
BERYLLIUM	0.34		
CADMIUM	0.08	L	K
CALCIUM	398		
CHROMIUM	12.2		
COBALT	2.7		
COPPER	6.0		
IRON	7160		
LEAD	39.4		
MAGNESIUM	754		
MANGANESE	168		
MERCURY	0.13		
NICKEL	5.2		
POTASSIUM	331		
SELENIUM	0.49	UL	K
SILVER	0.38	K	K
SODIUM	23.7	B	A
THALLIUM	0.16	U	
VANADIUM	15.1		
ZINC	25.1		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1640		
ANTIMONY	0.14	U	
ARSENIC	1.4		
BARIUM	7.2		
BERYLLIUM	0.06		
CADMIUM	0.03	U	
CALCIUM	137		
CHROMIUM	2.8		
COBALT	0.48		
COPPER	1.0		
IRON	2060		
LEAD	3.3		
MAGNESIUM	148		
MANGANESE	25.8		
MERCURY	0.02	U	
NICKEL	0.81		
POTASSIUM	168		
SELENIUM	0.42	U	
SILVER	0.19		
SODIUM	13.2	B	A
THALLIUM	0.14	U	
VANADIUM	4.6		
ZINC	4.6		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-110		nsample	WOD-SS-111		nsample	WOD-SS-112	
samp_date	2/11/2003		samp_date	2/11/2003		samp_date	2/11/2003	
lab_id	B0257-09A		lab_id	B0257-10A		lab_id	B0257-12A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	90		Pct_Solids	92		Pct_Solids	88	
DUP_OF:			DUP_OF:			DUP_OF:		
Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code
ALUMINUM	1390			ALUMINUM	959			ALUMINUM	1850		
ANTIMONY	0.16	U		ANTIMONY	0.16	U		ANTIMONY	0.16	U	
ARSENIC	1.4			ARSENIC	1.1			ARSENIC	1.2		
BARIUM	5.2			BARIUM	5.4			BARIUM	8.1		
BERYLLIUM	0.05			BERYLLIUM	0.05			BERYLLIUM	0.06		
CADMIUM	0.04	U		CADMIUM	0.04	U		CADMIUM	0.04	U	
CALCIUM	113			CALCIUM	45.4			CALCIUM	64.2		
CHROMIUM	2.1			CHROMIUM	1.5			CHROMIUM	2.4		
COBALT	0.55			COBALT	0.61			COBALT	0.77		
COPPER	0.61			COPPER	1.3			COPPER	1.9		
IRON	1630			IRON	1580			IRON	2090		
LEAD	2.0			LEAD	2.5			LEAD	5.2		
MAGNESIUM	117			MAGNESIUM	74.3			MAGNESIUM	118		
MANGANESE	18.5			MANGANESE	25.0			MANGANESE	22.0		
MERCURY	0.02	U		MERCURY	0.02	U		MERCURY	0.02		
NICKEL	0.56			NICKEL	0.55			NICKEL	0.77		
POTASSIUM	105	B	A	POTASSIUM	81.5	B	A	POTASSIUM	106	B	A
SELENIUM	0.47	U		SELENIUM	0.47	U		SELENIUM	0.47	U	
SILVER	0.19			SILVER	0.15			SILVER	0.36		
SODIUM	7.8	B	A	SODIUM	4.5	B	A	SODIUM	4.9	B	A
THALLIUM	0.16	U		THALLIUM	0.16	U		THALLIUM	0.16	U	
VANADIUM	3.5			VANADIUM	2.6			VANADIUM	5.4		
ZINC	2.7			ZINC	6.6			ZINC	5.7		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-113		nsample	WOD-SS-114		nsample	WOD-SS-DUP05	
samp_date	2/11/2003		samp_date	2/11/2003		samp_date	2/11/2003	
lab_id	B0257-14A		lab_id	B0257-16A		lab_id	B0257-07A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	92		Pct_Solids	91		Pct_Solids	89	
DUP_OF:			DUP_OF:			DUP_OF:	WOD-SS-109	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2010		
ANTIMONY	0.16	U	
ARSENIC	1.5		
BARIUM	8.0		
BERYLLIUM	0.07		
CADMIUM	0.04	U	
CALCIUM	12.8	U	
CHROMIUM	2.8		
COBALT	0.81		
COPPER	0.96		
IRON	2640		
LEAD	1.8		
MAGNESIUM	99.2		
MANGANESE	25.0		
MERCURY	0.01	U	
NICKEL	0.60		
POTASSIUM	116	B	A
SELENIUM	0.48	U	
SILVER	0.22		
SODIUM	4.4	U	
THALLIUM	0.16	U	
VANADIUM	4.4		
ZINC	2.9		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2890		
ANTIMONY	0.16	U	
ARSENIC	2.9		
BARIUM	6.9		
BERYLLIUM	0.07		
CADMIUM	0.04	U	
CALCIUM	12.6	U	
CHROMIUM	3.1		
COBALT	0.82		
COPPER	1.7		
IRON	2610		
LEAD	6.3		
MAGNESIUM	142		
MANGANESE	24.5		
MERCURY	0.02	U	
NICKEL	1.6		
POTASSIUM	101	B	A
SELENIUM	0.47	U	
SILVER	0.29		
SODIUM	4.0	U	
THALLIUM	0.16	U	
VANADIUM	7.0		
ZINC	5.2		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1500		
ANTIMONY	0.16	U	
ARSENIC	1.3		
BARIUM	6.4		
BERYLLIUM	0.05		
CADMIUM	0.04	U	
CALCIUM	127		
CHROMIUM	2.3		
COBALT	0.42		
COPPER	0.86		
IRON	1670		
LEAD	3.2		
MAGNESIUM	113		
MANGANESE	23.4		
MERCURY	0.02	U	
NICKEL	0.66		
POTASSIUM	124	B	A
SELENIUM	0.48	U	
SILVER	0.21		
SODIUM	6.9	B	A
THALLIUM	0.16	U	
VANADIUM	4.3		
ZINC	3.6		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-105-0507
samp_date	2/11/2003
lab_id	B0257-05A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	11700		
ANTIMONY	0.16	UL	K
ARSENIC	2.8	L	K
BARIUM	27.5		
BERYLLIUM	0.24		
CADMIUM	0.04	UL	K
CALCIUM	116		
CHROMIUM	9.2		
COBALT	3.2	K	K
COPPER	2.8		
IRON	6640		
LEAD	3.7		
MAGNESIUM	572		
MANGANESE	64.2		
MERCURY	0.02	U	
NICKEL	5.5		
POTASSIUM	327		
SELENIUM	0.48	UL	K
SILVER	0.35	K	K
SODIUM	25.0	B	A
THALLIUM	0.16	U	
VANADIUM	12.9		
ZINC	8.4	L	K

nsample	WOD-SU-109-0608
samp_date	2/11/2003
lab_id	B0257-03A
qc_type	NM
units	MG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	968		
ANTIMONY	0.15	U	
ARSENIC	0.87		
BARIUM	4.7		
BERYLLIUM	0.03		
CADMIUM	0.03	U	
CALCIUM	1000		
CHROMIUM	1.2		
COBALT	0.09		
COPPER	0.20	U	
IRON	606		
LEAD	0.45		
MAGNESIUM	51.7		
MANGANESE	5.7		
MERCURY	0.02	U	
NICKEL	0.43		
POTASSIUM	60.1	B	A
SELENIUM	0.44	U	
SILVER	0.10	U	
SODIUM	39.6	B	A
THALLIUM	0.15	U	
VANADIUM	1.2		
ZINC	0.76		

nsample	WOD-SU-110-0204
samp_date	2/11/2003
lab_id	B0257-08A
qc_type	NM
units	MG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4100		
ANTIMONY	0.15	U	
ARSENIC	2.1		
BARIUM	13.3		
BERYLLIUM	0.11		
CADMIUM	0.04	U	
CALCIUM	12.0	U	
CHROMIUM	3.9		
COBALT	0.73		
COPPER	1.1		
IRON	2570		
LEAD	2.4		
MAGNESIUM	197		
MANGANESE	30.4		
MERCURY	0.02	U	
NICKEL	1.3		
POTASSIUM	161	B	A
SELENIUM	0.45	U	
SILVER	0.20		
SODIUM	8.0	B	A
THALLIUM	0.15	U	
VANADIUM	5.7		
ZINC	4.2		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-111-0507		nsample	WOD-SU-112-0204		nsample	WOD-SU-113-0406	
samp_date	2/11/2003		samp_date	2/11/2003		samp_date	2/11/2003	
lab_id	B0257-11A		lab_id	B0257-13A		lab_id	B0257-15A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	81		Pct_Solids	93		Pct_Solids	93	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	47600		
ANTIMONY	18.3	L	K
ARSENIC	11.9	L	K
BARIUM	983		
BERYLLIUM	0.12		
CADMIUM	23.4	L	K
CALCIUM	55400		
CHROMIUM	78.6		
COBALT	6.3	K	K
COPPER	3040		
IRON	127000		
LEAD	1100		
MAGNESIUM	3470		
MANGANESE	1100		
MERCURY	0.18		
NICKEL	56.8		
POTASSIUM	1830	K	K
SELENIUM	0.50	UL	K
SILVER	389		
SODIUM	1060	K	K
THALLIUM	3.5	K	K
VANADIUM	92.0		
ZINC	3550		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1230		
ANTIMONY	0.14	U	
ARSENIC	0.90		
BARIUM	3.4		
BERYLLIUM	0.03		
CADMIUM	0.03	U	
CALCIUM	22.4		
CHROMIUM	1.9		
COBALT	0.62		
COPPER	0.73		
IRON	1030		
LEAD	3.0		
MAGNESIUM	89.8		
MANGANESE	30.3		
MERCURY	0.02	U	
NICKEL	0.59		
POTASSIUM	70.6	B	A
SELENIUM	0.42	U	
SILVER	0.11		
SODIUM	3.9	U	
THALLIUM	0.14	U	
VANADIUM	2.7		
ZINC	2.7		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	613		
ANTIMONY	0.14	U	
ARSENIC	0.46		
BARIUM	4.1		
BERYLLIUM	0.02	U	
CADMIUM	0.03	U	
CALCIUM	11.3	U	
CHROMIUM	0.78		
COBALT	0.22		
COPPER	0.31		
IRON	672		
LEAD	0.78		
MAGNESIUM	42.8		
MANGANESE	5.0		
MERCURY	0.02	U	
NICKEL	0.30	B	A
POTASSIUM	59.5	B	A
SELENIUM	0.42	U	
SILVER	0.09	U	
SODIUM	3.9	U	
THALLIUM	0.14	U	
VANADIUM	1.1		
ZINC	0.75		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-114-0406
samp_date	2/11/2003
lab_id	B0257-17A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1980		
ANTIMONY	0.13	U	
ARSENIC	1.3		
BARIUM	4.2		
BERYLLIUM	0.06		
CADMIUM	0.03	U	
CALCIUM	10.8	U	
CHROMIUM	2.0		
COBALT	0.29		
COPPER	1.1		
IRON	3000		
LEAD	2.6		
MAGNESIUM	74.5		
MANGANESE	6.7		
MERCURY	0.02	U	
NICKEL	0.49		
POTASSIUM	106	B	A
SELENIUM	0.40	U	
SILVER	0.18		
SODIUM	3.7	U	
THALLIUM	0.13	U	
VANADIUM	6.1		
ZINC	1.5		

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-105	nsample	WOD-SS-109	nsample	WOD-SS-110
samp_date	2/11/2003	samp_date	2/11/2003	samp_date	2/11/2003
lab_id	B0257-04A	lab_id	B0257-02A	lab_id	B0257-09A
qc_type	NM	qc_type	NM	qc_type	NM
Pct_Solids	85	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.3	J	H

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.1	J	H

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	7.1	J	H

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-111
samp_date	2/11/2003
lab_id	B0257-10A
qc_type	NM
Pct_Solids	92
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.6	J	H

nsample	WOD-SS-112
samp_date	2/11/2003
lab_id	B0257-12A
qc_type	NM
Pct_Solids	88
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.7	J	H

nsample	WOD-SS-113
samp_date	2/11/2003
lab_id	B0257-14A
qc_type	NM
Pct_Solids	92
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.6	J	H

PROJ_NO: 4740

SDG: B0257 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-114
samp_date	2/11/2003
lab_id	B0257-16A
qc_type	NM
Pct_Solids	91
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.6	J	H

nsample	WOD-SS-DUP05
samp_date	2/11/2003
lab_id	B0257-07A
qc_type	NM
Pct_Solids	89
DUP_OF:	WOD-SS-109

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.3	J	H

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1011617

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-06A

Level (low/med): MED Date Received: 02/12/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5810			P
7440-36-0	Antimony	3.4			P
7440-38-2	Arsenic	2.6		*	P
7440-39-3	Barium	47.0		*	P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.067	B		P
7440-70-2	Calcium	553			P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	1.7	B	*	P
7440-50-8	Copper	4.7			P
7439-89-6	Iron	3830			P
7439-92-1	Lead	80.4			P
7439-95-4	Magnesium	642			P
7439-96-5	Manganese	53.0			P
7439-97-6	Mercury	0.048			CV
7440-02-0	Nickel	25.8			P
7440-09-7	Potassium	282			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.21	B		P
7440-23-5	Sodium	132			P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	58.5			P
7440-66-6	Zinc	30.2			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-105

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-04A

Level (low/med): MED Date Received: 02/12/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8180			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	9.5		*	P
7440-39-3	Barium	51.9		*	P
7440-41-7	Beryllium	0.34			P
7440-43-9	Cadmium	0.083	B		P
7440-70-2	Calcium	398			P
7440-47-3	Chromium	12.2			P
7440-48-4	Cobalt	2.7	B	*	P
7440-50-8	Copper	6.0			P
7439-89-6	Iron	7160			P
7439-92-1	Lead	39.4			P
7439-95-4	Magnesium	754			P
7439-96-5	Manganese	168			P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	5.2			P
7440-09-7	Potassium	331			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.38	B		P
7440-23-5	Sodium	23.7	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	15.1			P
7440-66-6	Zinc	25.1			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-109

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-02A

Level (low/med): MED Date Received: 02/12/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1640			P
7440-36-0	Antimony	0.14	U		P
7440-38-2	Arsenic	1.4		*	P
7440-39-3	Barium	7.2	B	*	P
7440-41-7	Beryllium	0.064	B		P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	137			P
7440-47-3	Chromium	2.8			P
7440-48-4	Cobalt	0.48	B	*	P
7440-50-8	Copper	1.0	B	per 2/12/03	P
7439-89-6	Iron	2060			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	148			P
7439-96-5	Manganese	25.8			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	0.81	B		P
7440-09-7	Potassium	168			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.19	B		P
7440-23-5	Sodium	13.2	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	4.6			P
7440-66-6	Zinc	4.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM 1 - IN SW846

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-110

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-09A

Level (low/med): MED Date Received: 02/12/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1390			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	5.2	B		P
7440-41-7	Beryllium	0.053	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	113			P
7440-47-3	Chromium	2.1			P
7440-48-4	Cobalt	0.55	B		P
7440-50-8	Copper	0.61	B	RM 2/13/03	P
7439-89-6	Iron	1630			P
7439-92-1	Lead	2.0			P
7439-95-4	Magnesium	117			P
7439-96-5	Manganese	18.5			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	0.56	B		P
7440-09-7	Potassium	105			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.19	B		P
7440-23-5	Sodium	7.8	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	3.5			P
7440-66-6	Zinc	2.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-111

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-10A

Level (low/med): MED Date Received: 02/12/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	959			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	1.1			P
7440-39-3	Barium	5.4	B		P
7440-41-7	Beryllium	0.051	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	45.4			P
7440-47-3	Chromium	1.5			P
7440-48-4	Cobalt	0.61	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	1580			P
7439-92-1	Lead	2.5			P
7439-95-4	Magnesium	74.3			P
7439-96-5	Manganese	25.0			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	0.55	B		P
7440-09-7	Potassium	81.5			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.15	B		P
7440-23-5	Sodium	4.5	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	2.6	B		P
7440-66-6	Zinc	6.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-112

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-12A

Level (low/med): MED Date Received: 02/12/03

% Solids: 88.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1850			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	1.2		*	P
7440-39-3	Barium	8.1	B	*	P
7440-41-7	Beryllium	0.058	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	64.2			P
7440-47-3	Chromium	2.4			P
7440-48-4	Cobalt	0.77	B	*	P
7440-50-8	Copper	1.9		RM 2/27/03	P
7439-89-6	Iron	2090			P
7439-92-1	Lead	5.2			P
7439-95-4	Magnesium	118			P
7439-96-5	Manganese	22.0			P
7439-97-6	Mercury	0.021	B		CV
7440-02-0	Nickel	0.77	B		P
7440-09-7	Potassium	106			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.36	B		P
7440-23-5	Sodium	4.9	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	5.4			P
7440-66-6	Zinc	5.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-113

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-14A

Level (low/med): MED Date Received: 02/12/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2010			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	1.5		*	P
7440-39-3	Barium	8.0	B	*	P
7440-41-7	Beryllium	0.073	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	12.8	U		P
7440-47-3	Chromium	2.8			P
7440-48-4	Cobalt	0.81	B		P
7440-50-8	Copper	0.96	B		P
7439-89-6	Iron	2640			P
7439-92-1	Lead	1.8			P
7439-95-4	Magnesium	99.2			P
7439-96-5	Manganese	25.0			P
7439-97-6	Mercury	0.014	U		CV
7440-02-0	Nickel	0.60	B		P
7440-09-7	Potassium	116			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.22	B		P
7440-23-5	Sodium	4.4	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	4.4			P
7440-66-6	Zinc	2.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-114

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-16A

Level (low/med): MED Date Received: 02/12/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2890			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	2.9		*	P
7440-39-3	Barium	6.9	B	*	P
7440-41-7	Beryllium	0.065	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	12.6	U		P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	0.82	B	*	P
7440-50-8	Copper	1.7		per elab101	P
7439-89-6	Iron	2610			P
7439-92-1	Lead	6.3			P
7439-95-4	Magnesium	142			P
7439-96-5	Manganese	24.5			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	1.6	B		P
7440-09-7	Potassium	101			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.29	B		P
7440-23-5	Sodium	4.0	U		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	7.0			P
7440-66-6	Zinc	5.2			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1050507

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0257__

Matrix (soil/water): SOIL____ Lab Sample ID: B0257-05A

Level (low/med): MED Date Received: 02/12/03____

% Solids: 90.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11700			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	27.5			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	116			P
7440-47-3	Chromium	9.2			P
7440-48-4	Cobalt	3.2			P
7440-50-8	Copper	2.8		JMG 2/26/03	P
7439-89-6	Iron	6640			P
7439-92-1	Lead	3.7			P
7439-95-4	Magnesium	572			P
7439-96-5	Manganese	64.2			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	5.5			P
7440-09-7	Potassium	327			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.35	B		P
7440-23-5	Sodium	25.0	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	8.4			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1090608

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-03A

Level (low/med): MED Date Received: 02/12/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	968			P
7440-36-0	Antimony	0.15	U		P
7440-38-2	Arsenic	0.87	B	*	P
7440-39-3	Barium	4.7	B	*	P
7440-41-7	Beryllium	0.029	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	1000			P
7440-47-3	Chromium	1.2			P
7440-48-4	Cobalt	0.087	B	*	P
7440-50-8	Copper	0.20	U	TM elevated	P
7439-89-6	Iron	606			P
7439-92-1	Lead	0.45	B		P
7439-95-4	Magnesium	51.7			P
7439-96-5	Manganese	5.7			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	0.43	B		P
7440-09-7	Potassium	60.1			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.098	U		P
7440-23-5	Sodium	39.6	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	1.2	B		P
7440-66-6	Zinc	0.76	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1100204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-08A

Level (low/med): MED Date Received: 02/12/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4100			P
7440-36-0	Antimony	0.15	U		P
7440-38-2	Arsenic	2.1		*	P
7440-39-3	Barium	13.3		*	P
7440-41-7	Beryllium	0.11	B		P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	12.0	U		P
7440-47-3	Chromium	3.9			P
7440-48-4	Cobalt	0.73	B	*	P
7440-50-8	Copper	1.1	B	DW elevated	P
7439-89-6	Iron	2570			P
7439-92-1	Lead	2.4			P
7439-95-4	Magnesium	197			P
7439-96-5	Manganese	30.4			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	161			P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.20	B		P
7440-23-5	Sodium	8.0	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	5.7			P
7440-66-6	Zinc	4.2			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1110507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-11A

Level (low/med): MED Date Received: 02/12/03

% Solids: 81.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	47600			P
7440-36-0	Antimony	18.3			P
7440-38-2	Arsenic	11.9		*	P
7440-39-3	Barium	983		*	P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	23.4			P
7440-70-2	Calcium	55400			P
7440-47-3	Chromium	78.6			P
7440-48-4	Cobalt	6.3		*	P
7440-50-8	Copper	3040			P
7439-89-6	Iron	127000			P
7439-92-1	Lead	1100			P
7439-95-4	Magnesium	3470			P
7439-96-5	Manganese	1100			P
7439-97-6	Mercury	0.18			CV
7440-02-0	Nickel	56.8			P
7440-09-7	Potassium	1830			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	389			P
7440-23-5	Sodium	1060			P
7440-28-0	Thallium	3.5			P
7440-62-2	Vanadium	92.0			P
7440-66-6	Zinc	3550			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1120204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-13A

Level (low/med): MED Date Received: 02/12/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1230			P
7440-36-0	Antimony	0.14	U		P
7440-38-2	Arsenic	0.90	B		P
7440-39-3	Barium	3.4	B		P
7440-41-7	Beryllium	0.034	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	22.4	B		P
7440-47-3	Chromium	1.9			P
7440-48-4	Cobalt	0.62	B		P
7440-50-8	Copper	0.73	B		P
7439-89-6	Iron	1030			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	89.8			P
7439-96-5	Manganese	30.3			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.59	B		P
7440-09-7	Potassium	70.6			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.11	B		P
7440-23-5	Sodium	3.9	U		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	2.7			P
7440-66-6	Zinc	2.7			P
	Cyanide				NR

MK 2/12/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1130406

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-15A

Level (low/med): MED Date Received: 02/12/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	613			P
7440-36-0	Antimony	0.14	U		P
7440-38-2	Arsenic	0.46	B	*	P
7440-39-3	Barium	4.1	B	*	P
7440-41-7	Beryllium	0.024	U		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	11.3	U		P
7440-47-3	Chromium	0.78	B		P
7440-48-4	Cobalt	0.22	B		P
7440-50-8	Copper	0.31	B	DMC 2/27/03	P
7439-89-6	Iron	672			P
7439-92-1	Lead	0.78			P
7439-95-4	Magnesium	42.8			P
7439-96-5	Manganese	5.0			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.30	B		P
7440-09-7	Potassium	59.5			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.094	U		P
7440-23-5	Sodium	3.9	U		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	1.1	B		P
7440-66-6	Zinc	0.75	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1140406

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-17A

Level (low/med): MED Date Received: 02/12/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1980			P
7440-36-0	Antimony	0.13	U		P
7440-38-2	Arsenic	1.3		*	P
7440-39-3	Barium	4.2	B	*	P
7440-41-7	Beryllium	0.058	B		P
7440-43-9	Cadmium	0.031	U		P
7440-70-2	Calcium	10.8	U		P
7440-47-3	Chromium	2.0			P
7440-48-4	Cobalt	0.29	B	*	P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	3000			P
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium	74.5			P
7439-96-5	Manganese	6.7			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	0.49	B		P
7440-09-7	Potassium	106			P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.18	B		P
7440-23-5	Sodium	3.7	U		P
7440-28-0	Thallium	0.13	U		P
7440-62-2	Vanadium	6.1			P
7440-66-6	Zinc	1.5	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP05

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Lab Sample ID: B0257-07A

Level (low/med): MED Date Received: 02/12/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1500			P
7440-36-0	Antimony	0.16	U		P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	6.4	B		P
7440-41-7	Beryllium	0.054	B		P
7440-43-9	Cadmium	0.037	U		P
7440-70-2	Calcium	127			P
7440-47-3	Chromium	2.3			P
7440-48-4	Cobalt	0.42	B		P
7440-50-8	Copper	0.86	B	RAC 2/10/03	P
7439-89-6	Iron	1670			P
7439-92-1	Lead	3.2			P
7439-95-4	Magnesium	113			P
7439-96-5	Manganese	23.4			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.66	B		P
7440-09-7	Potassium	124			P
7782-49-2	Selenium	0.48	U		P
7440-22-4	Silver	0.21	B		P
7440-23-5	Sodium	6.9	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	4.3			P
7440-66-6	Zinc	3.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-105 **Collection Date:** 02/11/03 8:40
Lab ID: B0257-04

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.3		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-109
Lab ID: B0257-02

Project: Wallops Island
Collection Date: 02/11/03 7:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.1		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-110 **Collection Date:** 02/11/03 9:25
Lab ID: B0257-09

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	7.1		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Project: Wallops Island
Client Sample ID: WOD-SS-111
Collection Date: 02/11/03 10:40
Lab ID: B0257-10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-112
Lab ID: B0257-12

Project: Wallops Island
Collection Date: 02/11/03 11:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.7		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-113
Lab ID: B0257-14

Project: Wallops Island
Collection Date: 02/11/03 12:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-114 **Collection Date:** 02/11/03 13:15
Lab ID: B0257-16

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	5.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: SVDUP05 **Collection Date:** 02/11/03 8:55
Lab ID: B0257-07

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	6.3		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021103

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): WATER Lab Sample ID: B0257-18C

Level (low/med): MED Date Received: 02/12/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	357	B		P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	32.5	B		P
7439-96-5	Manganese	2.4	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.0	B		P
7440-09-7	Potassium	575	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.1	B		P
7440-23-5	Sodium	490	B		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: RB-021103 **Collection Date:** 02/11/03 14:30
Lab ID: B0257-18

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION					**E415.1_TOC_W**		
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 01 B0257-02B GRAB 02/11/03 @0755

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.41	99.59
No. 10	2.27	97.32
No. 20	8.89	88.43
No. 40	39.75	48.68
No. 60	31.91	16.77
No. 140	13.08	3.69
No. 200	1.23	2.46

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 02 B0257-04B GRAB 02/11/03 @0840

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.53	98.47
No. 10	6.22	92.25
No. 20	12.21	80.04
No. 40	39.47	40.57
No. 60	13.41	27.16
No. 140	18.03	9.13
No. 200	2.02	7.11

* Revised Results faxed by the laboratory
5-16-03 EMF

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03
Date Revised: 5/16/03

Approved by: _____
R.I. Analytical

Sample #: 03 B0257-09B GRAB 02/11/03 @0925

Sieve Analysis -- Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.34	99.66
No. 10	2.58	97.08
No. 20	8.58	88.50
No. 40	48.75	39.75
No. 60	24.65	15.10
No. 140	13.23	1.87
No. 200	0.59	1.28

Page No.: 235
Date: 4/18/03
Time: 1040
Analyst: CB

R. I. Analytical
41 Illinois Av **Sieve Analysis**
Warwick, RI 02888
Tele: 401-737-8500

Sample No. 1987-2
Client: Mitkem

Dry Sample + Plate 202.49
Plate 5.51
Initial Sample (g) 196.98

Sieve No.	Sieve + Cardboard (g)	Sieve + Cardboard + Sample (g)	Sample (g)	% Retained	% Passing
4	540.40	543.41	3.01 ✓	1.53 ✓	98.47 ✓
10	~~493.48~~ 489.96	502.21	12.25 ✓	6.22 ✓	92.25 ✓
20	~~494.52~~ 455.41	479.47	24.06 ✓	12.21 ✓	80.04 ✓
40	373.33	451.08	77.75 ✓	39.47 ✓	40.57 ✓
60	447.00	473.42	26.42 ✓	13.41 ✓	27.16 ✓
140	~~481~~.67	457.18	35.51 ✓	18.03 ✓	9.13 ✓
200	367.96	371.93	3.97 ✓	2.02 ✓	7.11 ✓
Pan	383.55	397.56	14.01 ✓	7.11 ✓	∅
			196.98 ✓	100.00 ✓	

FF 3/20/03

Page No.: 235
Date: 4/18/03
Time: 1100
Analyst: CB

R. I. Analytical
41 Illinois Av **Sieve Analysis**
Warwick, RI 02888
Tele: 401-737-8500

Sample No. 1987-3
Client: Mitkem

Dry Sample + Plate 278.10
Plate 6.19
Initial Sample (g) 271.91

Sieve No.	Sieve + Cardboard (g)	Sieve + Cardboard + Sample (g)	Sample (g)	% Retained	% Passing
	540.36	541.29	0.93 ✓	0.34 ✓	~~394.86~~ 99.66 ✓
4	~~502.21~~ 489.92	496.92	7.00 ✓	2.57 ✓	97.09 ✓
10	455.44	478.72	23.28 ✓	8.56 ✓	88.53 ✓
20	421.77	505.59	83.82 ✓	30.83 ✓	57.70 ✓
40	373.34	~~428.45~~ 422.34	49.00 ✓	18.02 ✓	39.68 ✓
60	447.01	513.91	66.90 ✓	24.60 ✓	15.08 ✓
140	422.09	458.00	35.91 ✓	13.21 ✓	1.87 ✓
200	368.35	369.95	1.60 ✓	~~0.59~~ 0.59 ✓	~~1.28~~ 1.28 ✓
Pan	383.55	387.02	3.47 ✓	1.28 ✓	∅
			271.91 ✓	100.00 ✓	

FF 3/20/03

* Shaded area is % Silt and Clay Number

R. I. Analytical
41 Illinois Ave.
Warwick, RI 02888
Tele: 401-737-8500

Revised 5/16/03 JB

Page No. 263

Sieve Analysis

* Revised Results faxed by the laboratory 5/16/03 Elf

Date: 4/18/03
Time: 11:00
Analyst: CAP

Sample ID: 1987-3
Client: Mitkem

Dry Sample + Plate 278.10
Plate 6.19
Initial Sample (g) 271.91

Sieve No.	Sieve + Tare (g)	Sieve + Tare + Sample (g)	Sample (g)	% Retained	% Passing
4	540.36	541.29	0.93	0.34	99.66
10	489.92	496.92	7.00	2.58	97.08
20	455.44	478.72	23.28	8.58	88.50
40	373.34	505.59	132.25	48.75	39.75
60	447.01	513.91	66.90	24.65	15.10
140	422.09	458.00	35.91	13.23	1.87
200	368.35	369.95	1.60	0.59	1.28
Pan	383.55	387.02	3.47	1.28	
			271.34		

Comments:

Reviewed By: JB
Date Reviewed: 5/16/03

Sieve Analysis

Date:
Time:
Analyst:

Sample ID:
Client:

Dry Sample + Plate
Plate
Initial Sample (g)

Sieve No.	Sieve + Cardboard (g)	Sieve + Cardboard + Sample (g)	Sample (g)	% Retained	% Passing
4					
10					
20					
40					
60					
140					
200					
Pan					

Comments:

Reviewed By:
Date Reviewed:

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 04 B0257-10B GRAB 02/11/03 @1040

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.06	98.94
No. 10	1.50	97.44
No. 20	9.63	87.81
No. 40	53.46	34.35
No. 60	21.77	12.58
No. 140	10.20	2.38
No. 200	0.73	1.65

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 05 B0257-12B GRAB 02/11/03 @1125

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.54	99.46
No. 10	1.48	97.98
No. 20	12.27	85.71
No. 40	42.63	43.08
No. 60	33.75	9.33
No. 140	2.53	6.80
No. 200	1.94	4.86

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 06 B0257-14B GRAB 02/11/03 @1215

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.79	99.21
No. 10	3.04	96.17
No. 20	14.73	81.44
No. 40	41.96	39.48
No. 60	25.89	13.59
No. 140	11.08	2.51
No. 200	1.05	1.46

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1987
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 07 B0257-16B GRAB 02/11/03 @1315

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.40	98.60
No. 10	1.74	96.86
No. 20	7.30	89.56
No. 40	27.54	62.02
No. 60	39.98	22.04
No. 140	18.80	3.24
No. 200	1.13	2.11

APPENDIX C
SUPPORT DOCUMENTATION

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0257
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WIFI

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA vial HCl; TCL VOC Sigma Environ. Sample; TCL VOC 40z Amber glass widemouth; TCL SVOC, PCB 40z Amber glass widemouth; TAL Metals + Hg 40z Amber glass widemouth; TOC, % Moisture 40z Amber glass widemouth; TAL Metals, % moisture 8oz Amber glass widemouth Teflon Sleeve

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	TCL VOC Sigma Environ. Sample	TCL VOC 40z Amber glass widemouth	TCL SVOC, PCB 40z Amber glass widemouth	TAL Metals + Hg 40z Amber glass widemouth	TOC, % Moisture 40z Amber glass widemouth	TAL Metals, % moisture 8oz Amber glass widemouth Teflon Sleeve	COMMENTS
TB-021103	2/11/03		X	X			01	2	2*							Trip Blank
WOD-SS-109	2/11/03 / 0755		X		X		02	7		3*	1*	1*	1*		1*	
WOD-SU-109-0608	2/11/03 / 0830		X		X		03	5		3	1			1		
WOD-SS-105	2/11/03 / 0840		X		X		04	7		3	1	1	1		1	
WOD-SU-105-0507	2/11/03 / 0905		X		X		05	5		3	1			1	+	cm 2/11/03
FTA-SU-101-1617	2/11/03 / 0845		X		X		06	4		3	1					
WOD-SU-OUTDOS	2/11/03 / 0855		X		X		07	6		3	1	1	1		+	cm 2/11/03
WOD-SB-110-0204	2/11/03 / 0955		X		X		08	5		3	1			1		
WOD-SS-110	2/11/03 / 0925		X		X		09	7		3	1	1	1		1	
WOD-SS-111	2/11/03 / 1040		X		X		10	7		3	1	1	1		1	
WOD-SU-111-0507	2/11/03 / 1110		X		X		11	5		3	1			1		
WOD-SS-112	2/11/03 / 1125		X		X		12	7		3	1	1	1		1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/11/03 / 1700	[signature]	2-12-03 / 0900	Blank Water supplied by the Laboratory shipped via Federal Express Airbill No 8286 8471 0232	4.0
		/		/		
		/		/		

000018

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0257
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA-WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Soil Encore Samplers	TCL VOC 40z Amber Glass Widemouth	TAL Metals 8oz Amber Glass Widemouth	SVOC PCB 16oz Amber Glass Widemouth	TAL Metals + Hg 16oz Amber Glass Widemouth	TOC 8oz Amber Glass Widemouth	Grain Size 80z Amber Glass Widemouth	VOC 40ml VOA Vial HCl	Ultra Amber Glass 1 Liter	SVOC 1 Liter Amber Glass	PCB 500ml PolyHDPE	TAL Metals 40ml VOA Vial HCl	TOC	COMMENTS
WOD-SU-112-0204	2/11/03 1140		X		X		13	5	3	1	1											
WOD-SS-113	2/11/03 1215		X		X		14	7	3		1	1	1	1								
WOD-SU-113-0406	2/11/03 1235		X		X		15	15	9	3	3											DO MS/MSD
WOD-SS-114	2/11/03 1315		X		X		16	7	3		1	1	1	1								
WOD-SU-114-0406	2/11/03 1335		X		X		17	5	3	1	1											
RB-021103	2/11/03 1430		X	X			18	9							2*	2*	2*	1*	2*			Rinsate Blank
	/																					
	/																					
	/																					
	/																					
	/																					
	/																					

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mapp	2/11/03 1700	D. Mitchell	2-12-03 0900	Blank water supplied by the laboratory shipped via Fed Express Airbill NO 8286 8471 0232	4.0
		/		/		
		/		/		

000019

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

B0257

HOLDING TIME

04/30/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
%	LCSS	0213LCSS	LCS	B0257	HG	/ /	02/14/03	02/14/03	0	0	0
%	LCSW	0213LCSW	LCS	B0257	HG	/ /	02/13/03	02/14/03	0	1	0
MG/KG	PBS	0213PBS	M_BLANK	B0257	HG	/ /	02/14/03	02/14/03	0	0	0
UG/L	PBW	0213PBW	M_BLANK	B0257	HG	/ /	02/13/03	02/14/03	0	1	0
UG/L	RB-021103	B0257-18C	NORMAL	B0257	HG	02/11/03	02/13/03	02/14/03	2	1	3
MG/KG	WOD-SS-105	B0257-04A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-109	B0257-02A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-110	B0257-09A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-111	B0257-10A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-112	B0257-12A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-113	B0257-14A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SS-114	B0257-16A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-113-0406DUP	B0257-15ADUP	DUPLICATE	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	HG	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0213LCSS	LCS	B0257	M	/ /	02/13/03	02/13/03	0	0	0
%	LCSW	0213LCSW	LCS	B0257	M	/ /	02/13/03	02/13/03	0	0	0
%	LCSW1	0214LCSW	LCS	B0257	M	/ /	02/14/03	02/14/03	0	0	0
MG/KG	PBS	0213PBS	M_BLANK	B0257	M	/ /	02/13/03	02/13/03	0	0	0
UG/L	PBW	0213PBW	M_BLANK	B0257	M	/ /	02/13/03	02/13/03	0	0	0
UG/L	PBW1	0214PBW	M_BLANK	B0257	M	/ /	02/14/03	02/14/03	0	0	0
UG/L	RB-021103	B0257-18C	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-105	B0257-04A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-109	B0257-02A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-110	B0257-09A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-111	B0257-10A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-112	B0257-12A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-113	B0257-14A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SS-114	B0257-16A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	M	02/11/03	02/13/03	02/14/03	2	1	3
MG/KG	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-113-0406DUP	B0257-15ADUP	DUPLICATE	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
MG/KG	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
UG/L	WOD-SV-114-0406L	B0257-17AL	NORMAL	B0257	M	02/11/03	02/14/03	02/14/03	3	0	3
MG/KG	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	M	02/11/03	02/13/03	02/13/03	2	0	2
%	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	FTA-SV-101-1617DL	B0257-06ADL	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	RB-021103	B0257-18D	NORMAL	B0257	OS	02/11/03	02/12/03	02/19/03	1	7	8
%	SBLK2M	MB-5791	M_BLANK	B0257	OS	/ /	02/25/03	03/10/03	0	13	0
%	SBLK2MLCS	LCS-5791	LCS	B0257	OS	/ /	02/25/03	03/10/03	0	13	0
UG/L	SBLK2R	MB-5612	M_BLANK	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCS	LCS-5612	LCS	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	SBLK2RLCSD	LCSD-5612	LCSD	B0257	OS	/ /	02/12/03	02/19/03	0	7	0
%	WOD-SS-105	B0257-04A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SS-109	B0257-02A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-110	B0257-09A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-111	B0257-10A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-112	B0257-12A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SS-113	B0257-14A	NORMAL	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SS-114	B0257-16A	NORMAL	B0257	OS	02/11/03	02/25/03	03/14/03	14	17	31
%	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SV-113-0406MSD	B0257-15AMSD	MSD	B0257	OS	02/11/03	02/25/03	03/11/03	14	14	28
%	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	OS	02/11/03	02/25/03	03/10/03	14	13	27
%	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	OS	02/11/03	02/12/03	03/14/03	1	30	31
%	FTA-SV-101-1617	B0257-06B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
UG/L	RB-021103	B0257-18A	NORMAL	B0257	OV	02/11/03	02/23/03	02/23/03	12	0	12
%	TB-021103	B0257-01A	NORMAL	B0257	OV	02/11/03	02/23/03	02/23/03	12	0	12
%	VBLK5V	V5B0214A	M_BLANK	B0257	OV	/ /	02/14/03	02/14/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5VLCS	V5L0214A	LCS	B0257	OV	/ /	02/14/03	02/14/03	0	0	0
%	VBLK5X	V5B0215A	M_BLANK	B0257	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5XLCS	V5L0215A	LCS	B0257	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0257	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0257	OV	/ /	02/17/03	02/17/03	0	0	0
UG/L	VBLK6J	V6B0223A	M_BLANK	B0257	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK6JLCS	V6L0223A	LCS	B0257	OV	/ /	02/23/03	02/23/03	0	0	0
%	WOD-SS-105	B0257-04C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-109	B0257-02C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-110	B0257-09C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-110RE	B0257-09CRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-111	B0257-10C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-111RE	B0257-10CRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SS-112	B0257-12C	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SS-113	B0257-14C	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
UG/KG	WOD-SS-114	B0257-16C	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-105-0507	B0257-05B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-105-0507RE	B0257-05BRE	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-109-0608	B0257-03B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SV-110-0204	B0257-08B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-111-0507	B0257-11B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-111-0507RE	B0257-11BRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	WOD-SV-112-0204	B0257-13B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406	B0257-15B	NORMAL	B0257	OV	02/11/03	02/17/03	02/17/03	6	0	6
%	WOD-SV-113-0406MS	B0257-15BMS	MS	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-113-0406MSD	B0257-15BMSD	MSD	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-114-0406	B0257-17B	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-DUP05	B0257-07B	NORMAL	B0257	OV	02/11/03	02/14/03	02/14/03	3	0	3
%	WOD-SV-DUP05RE	B0257-07BRE	NORMAL	B0257	OV	02/11/03	02/15/03	02/15/03	4	0	4
%	BBLK1A	MB-5743	M_BLANK	B0257	PCB	/ /	02/21/03	02/27/03	0	6	0
%	BBLK1ALCS	LCS-5743	LCS	B0257	PCB	/ /	02/21/03	02/27/03	0	6	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0257	PCB	/ /	02/18/03	02/23/03	0	5	0
%	FTA-SV-101-1617	B0257-06A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	RB-021103	B0257-18D	NORMAL	B0257	PCB	02/11/03	02/18/03	02/23/03	7	5	12
%	WOD-SS-105	B0257-04A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SS-109	B0257-02A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SS-110	B0257-09A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-111	B0257-10A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-112	B0257-12A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-113	B0257-14A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SS-114	B0257-16A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/25/03	10	4	14
%	WOD-SV-105-0507	B0257-05A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SV-109-0608	B0257-03A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
%	WOD-SV-110-0204	B0257-08A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-111-0507	B0257-11A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-112-0204	B0257-13A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406	B0257-15A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406MS	B0257-15AMS	MS	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-113-0406MSD	B0257-15AMSD	MSD	B0257	PCB	02/11/03	02/21/03	02/28/03	10	7	17
%	WOD-SV-114-0406	B0257-17A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/25/03	10	4	14
%	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	PCB	02/11/03	02/21/03	02/27/03	10	6	16
S.U.	WOD-SS-105	B0257-04A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
S.U.	WOD-SS-109	B0257-02A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-110	B0257-09A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-111	B0257-10A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-112	B0257-12A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-113	B0257-14A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SS-114	B0257-16A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
S.U.	WOD-SV-DUP05	B0257-07A	NORMAL	B0257	PH	02/11/03	02/14/03	02/14/03	3	0	3
%	LCS-6168	LCS-6168	LCS	B0257	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0257	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021103	B0257-18B	NORMAL	B0257	TOC	02/11/03	02/28/03	02/28/03	17	0	17

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for tw0 aqueous and sixteen soil samples that were collected on February 11, 2003, and received at Mitkem on February 12, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

QC criteria with the exception of samples SV1110507 and WOD-SS-105. The samples were not re-analyzed at all surrogate recoveries were within the QC limits.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of decachlorobiphenyl in one column in sample SV1011617.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1130406. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1130406. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1130406. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/24/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0257

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0257-01A	TB-021103	
B0257-02A	WOD-SS-109	
B0257-02B	WOD-SS-109	
B0257-02C	WOD-SS-109	
B0257-03A	SV1090608	WOD-SV-109-0608
B0257-03B	SV1090608	WOD-SV-109-0608
B0257-04A	WOD-SS-105	
B0257-04B	WOD-SS-105	
B0257-04C	WOD-SS-105	
B0257-05A	SV1050507	WOD-SV-105-0507
B0257-05B	SV1050507	WOD-SV-105-0507
B0257-06A	SV1011617	FTA-SV-101-1617
B0257-06B	SV1011617	FTA-SV-101-1617
B0257-07A	SVDUP05	WOD-SV-DUP05
B0257-07B	SVDUP05	WOD-SV-DUP05
B0257-08A	SV1100204	WOD-SV-110-0204
B0257-08B	SV1100204	WOD-SV-110-0204
B0257-09A	WOD-SS-110	
B0257-09B	WOD-SS-110	
B0257-09C	WOD-SS-110	
B0257-10A	WOD-SS-111	
B0257-10B	WOD-SS-111	
B0257-10C	WOD-SS-111	
B0257-11A	SV1110507	WOD-SV-111-0507
B0257-11B	SV1110507	WOD-SV-111-0507
B0257-12A	WOD-SS-112	
B0257-12B	WOD-SS-112	
B0257-12C	WOD-SS-112	
B0257-13A	SV1120204	WOD-SV-112-0204
B0257-13B	SV1120204	WOD-SV-112-0204
B0257-14A	WOD-SS-113	
B0257-14B	WOD-SS-113	
B0257-14C	WOD-SS-113	
B0257-15A	SV1130406	WOD-SV-113-0406
B0257-15B	SV1130406	WOD-SV-113-0406
B0257-16A	WOD-SS-114	
B0257-16B	WOD-SS-114	
B0257-16C	WOD-SS-114	
B0257-17A	SV1140406	WOD-SV-114-0406
B0257-17B	SV1140406	WOD-SV-114-0406

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0257-18A	RB-021103	
B0257-18B	RB-021103	
B0257-18C	RB-021103	
B0257-18D	RB-021103	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
RB-021103	B0257-18C
SV1011617	B0257-06A
SV1050507	B0257-05A
SV1090608	B0257-03A
SV1100204	B0257-08A
SV1110507	B0257-11A
SV1120204	B0257-13A
SV1130406	B0257-15A
SV1130406D	B0257-15AD
SV1130406S	B0257-15AS
SV1140406	B0257-17A
SVDUP05	B0257-07A
WOD-SS-105	B0257-04A
WOD-SS-109	B0257-02A
WOD-SS-110	B0257-09A
WOD-SS-111	B0257-10A
WOD-SS-112	B0257-12A
WOD-SS-113	B0257-14A
WOD-SS-114	B0257-16A

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: [signature]

Date: 2/28/03 Title: CHEMIST

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0257__

SOW No.: ILM04.0__

EPA Sample No.	Lab Sample ID
__WOD-SS-114_____	B0257-16A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO__

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Reiner A. Conrad

Date: 2/28/03 Title: Chemist

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0257

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	9540.66	95.4	10000.0	9383.90	93.8	9731.32	97.3	P
Antimony	500.0	511.94	102.4	500.0	507.30	101.5	518.76	103.8	P
Arsenic	500.0	505.30	101.1	500.0	494.90	99.0	503.85	100.8	P
Barium	10000.0	10258.20	102.6	10000.0	10149.33	101.5	10447.90	104.5	P
Beryllium	250.0	248.82	99.5	250.0	242.30	96.9	248.53	99.4	P
Cadmium	250.0	253.58	101.4	250.0	247.65	99.1	251.05	100.4	P
Calcium	25000.0	24042.22	96.2	25000.0	23643.31	94.6	24119.44	96.5	P
Chromium	1000.0	985.63	98.6	1000.0	968.03	96.8	996.73	99.7	P
Cobalt	2500.0	2496.33	99.9	2500.0	2456.55	98.3	2527.98	101.1	P
Copper	1250.0	1254.42	100.4	1250.0	1222.44	97.8	1256.14	100.5	P
Iron	5000.0	4930.82	98.6	5000.0	4863.26	97.3	5038.16	100.8	P
Lead	500.0	495.02	99.0	500.0	492.25	98.4	501.30	100.3	P
Magnesium	25000.0	24376.40	97.5	25000.0	24077.64	96.3	24843.54	99.4	P
Manganese	2500.0	2490.21	99.6	2500.0	2455.34	98.2	2521.64	100.9	P
Mercury	5.0	4.75	95.0	5.0	4.80	96.0	4.70	94.0	CV
Nickel	2500.0	2499.22	100.0	2500.0	2465.13	98.6	2531.82	101.3	P
Potassium	25000.0	25461.79	101.8	25000.0	25029.42	100.1	23735.43	94.9	P
Selenium	500.0	507.04	101.4	500.0	500.76	100.2	513.60	102.7	P
Silver	1250.0	1248.60	99.9	1250.0	1236.17	98.9	1273.70	101.9	P
Sodium	25000.0	26761.68	107.0	25000.0	26062.16	104.2	25932.09	103.7	P
Thallium	500.0	491.90	98.4	500.0	487.38	97.5	498.99	99.8	P
Vanadium	2500.0	2472.43	98.9	2500.0	2433.91	97.4	2509.22	100.4	P
Zinc	2500.0	2497.05	99.9	2500.0	2490.09	99.6	2574.25	103.0	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0257

Initial Calibration Source: _____

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	9561.29	95.6	9661.80	96.6	P
Antimony				500.0	502.47	100.5	504.94	101.0	P
Arsenic				500.0	489.67	97.9	491.48	98.3	P
Barium				10000.0	10479.81	104.8	10619.89	106.2	P
Beryllium				250.0	239.61	95.8	239.79	95.9	P
Cadmium				250.0	241.15	96.5	239.28	95.7	P
Calcium				25000.0	23844.92	95.4	24042.02	96.2	P
Chromium				1000.0	977.75	97.8	977.14	97.7	P
Cobalt				2500.0	2484.17	99.4	2485.17	99.4	P
Copper				1250.0	1222.50	97.8	1228.53	98.3	P
Iron				5000.0	4989.67	99.8	4989.61	99.8	P
Lead				500.0	504.53	100.9	506.42	101.3	P
Magnesium				25000.0	24429.72	97.7	24610.64	98.4	P
Manganese				2500.0	2501.47	100.1	2519.69	100.8	P
Mercury				5.0	4.51	90.2	4.27	85.4	CV
Nickel				2500.0	2490.68	99.6	2497.31	99.9	P
Potassium				25000.0	23534.09	94.1	23465.05	93.9	P
Selenium				500.0	515.56	103.1	520.97	104.2	P
Silver				1250.0	1265.71	101.3	1273.36	101.9	P
Sodium				25000.0	25678.97	102.7	25356.32	101.4	P
Thallium				500.0	498.32	99.7	500.14	100.0	P
Vanadium				2500.0	2473.70	98.9	2485.51	99.4	P
Zinc				2500.0	2585.76	103.4	2608.59	104.3	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Initial Calibration Source:

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	9569.14	95.7	9444.76	94.4	P
Antimony				500.0	505.30	101.1	500.14	100.0	P
Arsenic				500.0	491.12	98.2	480.18	96.0	P
Barium				10000.0	10557.42	105.6	10431.97	104.3	P
Beryllium				250.0	238.65	95.5	234.05	93.6	P
Cadmium				250.0	239.00	95.6	233.92	93.6	P
Calcium				25000.0	23867.82	95.5	23462.34	93.8	P
Chromium				1000.0	973.57	97.4	957.62	95.8	P
Cobalt				2500.0	2486.27	99.5	2443.26	97.7	P
Copper				1250.0	1221.98	97.8	1196.55	95.7	P
Iron				5000.0	4976.67	99.5	4902.95	98.1	P
Lead				500.0	504.80	101.0	497.77	99.6	P
Magnesium				25000.0	24466.10	97.9	24215.96	96.9	P
Manganese				2500.0	2505.14	100.2	2468.04	98.7	P
Mercury				5.0	4.06	81.2			CV
Nickel				2500.0	2488.36	99.5	2445.82	97.8	P
Potassium									
Selenium				500.0	519.73	103.9	516.98	103.4	P
Silver				1250.0	1271.15	101.7	1250.67	100.1	P
Sodium				25000.0	25366.77	101.5			P
Thallium				500.0	497.69	99.5	493.29	98.7	P
Vanadium				2500.0	2474.51	99.0	2437.11	97.5	P
Zinc				2500.0	2609.73	104.4	2588.51	103.5	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	10197.24	102.0	10000.0	10010.23	100.1			P
Antimony									
Arsenic	500.0	516.05	103.2	500.0	513.62	102.7	509.05	101.8	P
Barium									
Beryllium									
Cadmium	250.0	254.85	101.9	250.0	259.76	103.9	259.63	103.9	P
Calcium	25000.0	25639.80	102.6	25000.0	25456.47	101.8			P
Chromium									
Cobalt									
Copper									
Iron	5000.0	5246.74	104.9	5000.0	5156.28	103.1			P
Lead	500.0	515.06	103.0	500.0	518.20	103.6	518.76	103.8	P
Magnesium									
Manganese									
Mercury									
Nickel									
Potassium									
Selenium	500.0	503.32	100.7	500.0	514.98	103.0	509.76	102.0	P
Silver									
Sodium									
Thallium	500.0	505.08	101.0	500.0	507.37	101.5	507.33	101.5	P
Vanadium									
Zinc	2500.0	2616.12	104.6	2500.0	2581.92	103.3			P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	21.2	B	17.0	B	18.332	B	P
Antimony	6.2	B	3.0	U	3.0	U	3.0	U	4.214	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.900	U	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	4.142	B	P
Iron	26.0	U	26.0	U	26.0	U	45.5	B	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	10.0	B	13.0	B	31.3	B	17.2	B	29.302	B	P
Manganese	0.8	U	0.8	U	0.8	U	1.4	B	0.800	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	1.0	B	0.8	B	1.1	B	1.3	B	0.800	U	P
Potassium	698.2	B	551.8	B	285.9	B	251.8	B	555.672	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	887.0	B	280.3	B	174.0	B	83.0	U	470.961	B	P
Thallium	3.0	U	-3.8	B	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

Prep blank is associated with a rinsate blank only. EMF 5-203

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prep-aration Blank	C	M
Aluminum			42.8	B	17.0	U	37.2	B	0.850	U	P
Antimony			3.0	U	3.3	B	3.0	U	0.150	U	P
Arsenic			3.0	U	3.0	U	3.0	U	0.150	U	P
Barium			4.0	U	4.0	U	4.0	U	0.200	U	P
Beryllium			0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium			0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium			240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium			0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt			0.9	U	0.9	U	0.9	U	0.045	U	P
Copper			4.0	U	4.0	U	4.0	U	0.200	U	P
Iron			27.5	B	36.4	B	26.3	B	1.300	U	P
Lead			4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium			38.5	B	8.0	U	40.7	B	1.046	B	P
Manganese			0.8	U	0.8	U	0.8	U	0.120	B	P
Mercury			0.1	U	0.1	U			0.017	U	CV
Nickel			1.5	B	1.1	B	1.3	B	0.040	U	P
Potassium			255.3	B					23.671	B	P
Selenium			9.0	U	9.0	U	9.0	U	0.450	U	P
Silver			2.0	U	2.0	U	2.0	U	0.100	U	P
Sodium			83.0	U	83.0	U			16.213	B	P
Thallium			3.0	U	3.0	U	3.0	U	0.150	U	P
Vanadium			0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc			7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U							P
Antimony											
Arsenic	3.0	U	3.0	U	3.0	U					P
Barium											
Beryllium											
Cadmium	0.7	U	0.7	U	0.7	U					P
Calcium	240.0	U	240.0	U							P
Chromium											
Cobalt											
Copper											
Iron	26.0	U	26.0	U							P
Lead	4.0	U	4.0	U	4.0	U					P
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium	9.0	U	9.0	U	9.0	U					P
Silver											
Sodium											
Thallium	3.0	U	3.0	U	3.0	U					P
Vanadium											
Zinc	-41.5	B	-40.1	B							P
Cyanide											

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	470079	475752.6	95.2	460156	465042.8	93.0
Antimony		600		575.5	95.9		554.9	92.5
Arsenic		100		86.0	86.0		80.8	80.8
Barium		500		461.9	92.4		472.9	94.6
Beryllium		500		456.9	91.4		433.8	86.8
Cadmium		1000		869.0	86.9		809.7	81.0
Calcium	500000	500000	477475	484015.1	96.8	471040	474653.0	94.9
Chromium		500		445.5	89.1		432.5	86.5
Cobalt		500		426.5	85.3		417.3	83.5
Copper		500		493.2	98.6		471.0	94.2
Iron	200000	200000	166623	168841.5	84.4	163601	165430.6	82.7
Lead		500		436.6	87.3		430.7	86.1
Magnesium	500000	500000	468943	474604.6	94.9	461713	465937.2	93.2
Manganese		500		452.6	90.5		451.3	90.3
Mercury								
Nickel		1000		853.3	85.3		833.2	83.3
Potassium		25000		26474.8	105.9		24859.4	99.4
Selenium		500		478.0	95.6		482.2	96.4
Silver		200		208.8	104.4		209.4	104.7
Sodium		25000		27633.9	110.5		27263.1	109.1
Thallium		100		96.0	96.0		94.7	94.7
Vanadium		500		460.8	92.2		456.5	91.3
Zinc		1000		864.2	86.4		887.6	88.8

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum								
Antimony								
Arsenic		100		89.0	89.0		86.2	86.2
Barium								
Beryllium								
Cadmium		1000		852.1	85.2		866.9	86.7
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead		500		430.8	86.2		434.4	86.9
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium		500		467.3	93.5		476.3	95.3
Silver								
Sodium		25000					26563.4	106.3
Thallium		100		91.7	91.7		90.3	90.3
Vanadium								
Zinc								

U.S. EPA - CLP

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	495009	492179.5	98.4	497565	500559.6	100.1
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium	500000	500000	529690	520696.2	104.1	523745	520016.0	104.0
Chromium								
Cobalt								
Copper								
Iron	200000	200000	175537	174887.4	87.4	176395	177009.5	88.5
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium								
Zinc		1000		843.6	84.4		847.7	84.8

Ba 233.527	35.6	0.0008 mg/L	0.00005	0.0008 mg/L	0.00005	7.09%
Be 313.107	230.0	0.0001 mg/L	0.00001	0.0001 mg/L	0.00001	10.69%
Co 228.616	3.8	0.0002 mg/L	0.00000	0.0002 mg/L	0.00000	1.28%
Cr 267.716	14.7	0.0003 mg/L	0.00004	0.0003 mg/L	0.00004	13.82%
Cu 324.752	410.7	0.0019 mg/L	0.00000	0.0019 mg/L	0.00000	0.14%
Fe 273.955	341.7	0.0099 mg/L	0.00054	0.0099 mg/L	0.00054	5.50%
Mg 279.077	161.5	0.0100 mg/L	0.00072	0.0100 mg/L	0.00072	7.19%
Mn 257.610	197.9	0.0005 mg/L	0.00003	0.0005 mg/L	0.00003	6.29%
Ni 231.604	11.1	0.0010 mg/L	0.00015	0.0010 mg/L	0.00015	14.34%
Pb 220.353	2.2	0.0012 mg/L	0.00158	0.0012 mg/L	0.00158	134.61%
Sb 206.836	5.8	0.0062 mg/L	0.00203	0.0062 mg/L	0.00203	32.71%
Se 196.026	-2.3	-0.0035 mg/L	0.00140	-0.0035 mg/L	0.00140	40.46%
Tl 190.801	-4.3	-0.0023 mg/L	0.00209	-0.0023 mg/L	0.00209	92.53%
V 292.402	21.1	0.0002 mg/L	0.00004	0.0002 mg/L	0.00004	17.35%
Zn 206.200	28.1	0.0024 mg/L	0.00031	0.0024 mg/L	0.00031	12.78%
Na 330.237	-142.3	-0.1113 mg/L	0.09891	-0.1113 mg/L	0.09891	88.90%
Cd 226.502	0.2	0.0000 mg/L	0.00001	0.0000 mg/L	0.00001	72.18%
Ti 334.940	70.8	0.0001 mg/L	0.00011	0.0001 mg/L	0.00011	100.25%
Ca 227.546	5.5	0.0553 mg/L	0.01725	0.0553 mg/L	0.01725	31.21%

Sequence No.: 13
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/13/03 4:44:48 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:03:42 AM,

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3669.3	0.0037	mg/L	0.00007	0.0037	mg/L	0.00007	1.78%
Al 308.215	14566288.8	470.08	mg/L	0.982	470.08	mg/L	0.982	0.21%
As 188.979	15.9	-0.0049	mg/L	0.00327	-0.0049	mg/L	0.00327	67.24%
Ba 233.527	-408.5	-0.0072	mg/L	0.00011	-0.0072	mg/L	0.00011	1.57%
Be 313.107	128.6	0.0001	mg/L OK	0.00005	0.0001	mg/L	0.00005	77.87%
Co 228.616	-6.3	0.0024	mg/L	0.00021	0.0024	mg/L	0.00021	8.79%
Cr 267.716	-47.2	-0.0008	mg/L	0.00010	-0.0008	mg/L	0.00010	12.25%
Cu 324.752	-3253.7	-0.0005	mg/L OK	0.00008	-0.0005	mg/L	0.00008	16.84%
Fe 273.955	5755100.1	166.62	mg/L	0.324	166.62	mg/L	0.324	0.19%
Mg 279.077	7606071.7	468.94	mg/L	1.049	468.94	mg/L	1.049	0.22%
Mn 257.610	3024.4	-0.0035	mg/L	0.00006	-0.0035	mg/L	0.00006	1.69%
Ni 231.604	-919.2	-0.0013	mg/L	0.00045	-0.0013	mg/L	0.00045	34.01%
Pb 220.353	609.5	-0.0005	mg/L OK	0.00105	-0.0005	mg/L	0.00105	222.28%
Sb 206.836	-5.3	-0.0138	mg/L	0.00257	-0.0138	mg/L	0.00257	18.57%
Se 196.026	-43.3	-0.0040	mg/L OK	0.00165	-0.0040	mg/L	0.00165	41.33%
Tl 190.801	-61.4	0.0096	mg/L	0.00176	0.0096	mg/L	0.00176	18.26%
V 292.402	6863.3	0.0032	mg/L	0.00013	0.0032	mg/L	0.00013	4.17%
Zn 206.200	236.2	0.0183	mg/L	0.00018	0.0183	mg/L	0.00018	0.98%
Na 330.237	-577.0	-0.1985	mg/L	0.08497	-0.1985	mg/L	0.08497	42.81%
Cd 226.502	301.3	-0.0003	mg/L OK	0.00043	-0.0003	mg/L	0.00043	129.81%
Ti 334.940	-4771.5	-0.0052	mg/L	0.00008	-0.0052	mg/L	0.00008	1.54%
Ca 227.546	47219.5	477.48	mg/L	2.609	477.48	mg/L	2.609	0.55%

Sequence No.: 14
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/13/03 4:49:01 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:03:43 AM,

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	30097.1	0.2088	mg/L	0.00080	0.2088	mg/L	0.00080	0.38%
Al 308.215	14742181.8	475.75	mg/L	0.919	475.75	mg/L	0.919	0.19%
As 188.979	177.2	0.0860	mg/L	0.00049	0.0860	mg/L	0.00049	0.57%
Ba 233.527	21290.2	0.4619	mg/L	0.00001	0.4619	mg/L	0.00001	0.00%
Be 313.107	814757.6	0.4569	mg/L	0.00178	0.4569	mg/L	0.00178	0.39%
Co 228.616	6552.7	0.4265	mg/L	0.00040	0.4265	mg/L	0.00040	0.09%

Mg 279.077	27424.0	1.6620 mg/L	0.01056	1.6620 mg/L	0.01056	0.64%
Mn 257.610	61636.6	0.1485 mg/L	0.00146	0.1485 mg/L	0.00146	0.98%
Ni 231.604	-241.8	0.0108 mg/L	0.00016	0.0108 mg/L	0.00016	1.44%
Pb 220.353	168.0	0.0570 mg/L	0.00124	0.0570 mg/L	0.00124	2.18%
Sb 206.836	1.2	-0.0021 mg/L	0.00093	-0.0021 mg/L	0.00093	44.54%
Se 196.026	-9.0	-0.0004 mg/L	0.00017	-0.0004 mg/L	0.00017	40.95%
Tl 190.801	-20.5	-0.0024 mg/L	0.00033	-0.0024 mg/L	0.00033	13.64%
V 292.402	12930.9	0.1355 mg/L	0.00041	0.1355 mg/L	0.00041	0.30%
Zn 206.200	389.7	0.0332 mg/L	0.00007	0.0332 mg/L	0.00007	0.20%
Na 330.237	391.4	0.4226 mg/L	0.08123	0.4226 mg/L	0.08123	19.22%
Cd 226.502	98.9	-0.0021 mg/L	0.00037	-0.0021 mg/L	0.00037	18.10%
Ti 334.940	478558.8	0.7096 mg/L	0.00922	0.7096 mg/L	0.00922	1.30%
Ca 227.546	-16.5	-0.5129 mg/L	0.15758	-0.5129 mg/L	0.15758	30.72%

Sequence No.: 65
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/13/03 8:18:58 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:04:23 AM,

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3508.8	0.0042	mg/L	0.00003	0.0042	mg/L	0.00003	0.81%
Al 308.215	14258842.6	460.16	mg/L	1.357	460.16	mg/L	1.357	0.29%
As 188.979	9.6	-0.0081	mg/L	0.00217	-0.0081	mg/L	0.00217	26.67%
Ba 233.527	-406.0	-0.0072	mg/L	0.00041	-0.0072	mg/L	0.00041	5.66%
Be 313.107	-45.3	0.0000	mg/L	0.00002	0.0000	mg/L	0.00002	65.07%
Co 228.616	-9.6	0.0021	mg/L	0.00004	0.0021	mg/L	0.00004	2.09%
Cr 267.716	-49.1	-0.0008	mg/L	0.00000	-0.0008	mg/L	0.00000	0.45%
Cu 324.752	-3312.8	-0.0010	mg/L	0.00001	-0.0010	mg/L	0.00001	1.12%
Fe 273.955	5650731.7	163.60	mg/L	0.470	163.60	mg/L	0.470	0.29%
Mg 279.077	7488799.0	461.71	mg/L	1.636	461.71	mg/L	1.636	0.35%
Mn 257.610	3210.3	-0.0029	mg/L	0.00001	-0.0029	mg/L	0.00001	0.49%
Ni 231.604	-906.7	-0.0017	mg/L	0.00041	-0.0017	mg/L	0.00041	24.56%
Pb 220.353	592.1	-0.0030	mg/L	0.00334	-0.0030	mg/L	0.00334	112.93%
Sb 206.836	-11.6	-0.0205	mg/L	0.00339	-0.0205	mg/L	0.00339	16.54%
Se 196.026	-49.2	-0.0139	mg/L	0.00586	-0.0139	mg/L	0.00586	42.29%
Tl 190.801	-59.9	0.0096	mg/L	0.00217	0.0096	mg/L	0.00217	22.67%
V 292.402	7005.2	0.0058	mg/L	0.00022	0.0058	mg/L	0.00022	3.78%
Zn 206.200	249.7	0.0195	mg/L	0.00029	0.0195	mg/L	0.00029	1.47%
Na 330.237	-349.0	-0.0247	mg/L	0.01228	-0.0247	mg/L	0.01228	49.68%
Cd 226.502	286.3	-0.0011	mg/L	0.00019	-0.0011	mg/L	0.00019	17.20%
Ti 334.940	-4657.8	-0.0051	mg/L	0.00001	-0.0051	mg/L	0.00001	0.28%
Ca 227.546	46582.6	471.04	mg/L	0.102	471.04	mg/L	0.102	0.02%

Sequence No.: 66
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/13/03 8:23:10 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:04:24 AM,

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	30283.9	0.2094	mg/L	0.00115	0.2094	mg/L	0.00115	0.55%
Al 308.215	14410324.7	465.04	mg/L	1.048	465.04	mg/L	1.048	0.23%
As 188.979	167.4	0.0808	mg/L	0.00142	0.0808	mg/L	0.00142	1.75%
Ba 233.527	21800.9	0.4729	mg/L	0.00267	0.4729	mg/L	0.00267	0.56%
Be 313.107	773656.0	0.4338	mg/L	0.00181	0.4338	mg/L	0.00181	0.42%
Co 228.616	6410.5	0.4173	mg/L	0.00023	0.4173	mg/L	0.00023	0.05%
Cr 267.716	24112.4	0.4325	mg/L	0.00035	0.4325	mg/L	0.00035	0.08%
Cu 324.752	99752.9	0.4710	mg/L	0.00027	0.4710	mg/L	0.00027	0.06%
Fe 273.955	5713793.9	165.43	mg/L	0.091	165.43	mg/L	0.091	0.05%
Mg 279.077	7557255.6	465.94	mg/L	0.004	465.94	mg/L	0.004	0.00%
Mn 257.610	194322.4	0.4513	mg/L	0.00047	0.4513	mg/L	0.00047	0.10%
Ni 231.604	8109.3	0.8332	mg/L	0.00150	0.8332	mg/L	0.00150	0.18%

Analysis Begun

Start Time: 2/14/2003 9:08:43 AM
Logged In Analyst: optima2
Spectrometer Model: Optima 3100 XL
Plasma On Time: 2/12/2003 2:50:42 PM
Technique: ICP Continuous
Autosampler Model: AS-91

Sample Information File: D:\pe\optima2\Sample Information\TEST.sif
Results Data Set: A021302
Results Library: D:\pe\optima2\Results\Results.mdb

Sequence No.: 1
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/14/2003 9:08:43 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	521414.0	10.197	mg/L	0.0878	10.197	mg/L	0.0878	0.86%
Cr 267.716	352583.9	1.0457	mg/L	0.00818	1.0457	mg/L	0.00818	0.78%
Cu 324.752	659481.7	1.3135	mg/L	0.01103	1.3135	mg/L	0.01103	0.84%
Fe 273.955	251339.9	5.2467	mg/L	0.00586	5.2467	mg/L	0.00586	0.11%
Mg 279.077	1090955.7	25.971	mg/L	0.1944	25.971	mg/L	0.1944	0.75%
Mn 257.610	800663.2	2.6000	mg/L	0.00457	2.6000	mg/L	0.00457	0.18%
Ni 231.604	155328.3	2.6384	mg/L	0.00888	2.6384	mg/L	0.00888	0.34%
Tl 190.801	1269.1	0.5190	mg/L	0.00143	0.5190	mg/L	0.00143	0.28%
V 292.402	912275.8	2.6344	mg/L	0.01680	2.6344	mg/L	0.01680	0.64%
Zn 206.200	248006.0	2.6161	mg/L	0.02003	2.6161	mg/L	0.02003	0.77%
Ti 334.940	1663.1	0.0014	mg/L	0.00001	0.0014	mg/L	0.00001	0.60%
Ca 227.546	16481.2	25.640	mg/L	0.0803	25.640	mg/L	0.0803	0.31%

Sequence No.: 2
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/14/2003 9:12:46 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Al 308.215	-56.0	-0.0011	mg/L	0.00037	-0.0011	mg/L	0.00037	33.81%
Cr 267.716	-19.2	-0.0001	mg/L	0.00019	-0.0001	mg/L	0.00019	335.91%
Cu 324.752	1852.5	0.0037	mg/L	0.00095	0.0037	mg/L	0.00095	25.56%
Fe 273.955	231.5	0.0048	mg/L	0.00188	0.0048	mg/L	0.00188	38.89%
Mg 279.077	-154.9	-0.0037	mg/L	0.00093	-0.0037	mg/L	0.00093	25.14%
Mn 257.610	45.5	0.0001	mg/L	0.00007	0.0001	mg/L	0.00007	49.93%
Ni 231.604	2.6	0.0000	mg/L	0.00017	0.0000	mg/L	0.00017	375.95%
Tl 190.801	2.1	0.0009	mg/L	0.00093	0.0009	mg/L	0.00093	107.83%
V 292.402	106.9	0.0003	mg/L	0.00004	0.0003	mg/L	0.00004	13.14%
Zn 206.200	-3934.8	-0.0415	mg/L	0.00072	-0.0415	mg/L	0.00072	1.73%
Ti 334.940	385.1	0.0003	mg/L	0.00043	0.0003	mg/L	0.00043	129.49%
Ca 227.546	-0.2	-0.0005	mg/L	0.01672	-0.0005	mg/L	0.01672	>999.9%

Sequence No.: 3
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/14/2003 9:16:48 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD

Al 308.215	25311205.0	495.01 mg/L		1.498	495.01 mg/L	1.498	0.30%
Cr 267.716	-648.0	0.0003 mg/L	ok	0.00037	0.0003 mg/L	0.00037	129.08%
Cu 324.752	-8260.9	0.0062 mg/L		0.00014	0.0062 mg/L	0.00014	2.21%
Fe 273.955	8408943.2	175.54 mg/L		0.326	175.54 mg/L	0.326	0.19%
Mg 279.077	20514882.7	488.13 mg/L		0.864	488.13 mg/L	0.864	0.18%
Mn 257.610	-3138.1	-0.0116 mg/L		0.00025	-0.0116 mg/L	0.00025	2.12%
Ni 231.604	-69.2	-0.0012 mg/L		0.00014	-0.0012 mg/L	0.00014	12.23%
Tl 190.801	-1.2	0.0005 mg/L	ok	0.00084	0.0005 mg/L	0.00084	180.23%
V 292.402	-625.1	-0.0033 mg/L		0.00009	-0.0033 mg/L	0.00009	2.86%
Zn 206.200	-2122.9	-0.0476 mg/L		0.00007	-0.0476 mg/L	0.00007	0.15%
Ti 334.940	7959.2	0.0105 mg/L		0.00016	0.0105 mg/L	0.00016	1.55%
Ca 227.546	338864.2	529.69 mg/L		8.580	529.69 mg/L	8.580	1.62%

Sequence No.: 4 **Autosampler Location: 6**
Sample ID: ICSAB **Date Collected: 2/14/2003 9:19:26 AM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	25166548.5	492.18	mg/L	8.756	492.18	mg/L	8.756	1.78%
Cr 267.716	158064.8	0.4709	mg/L	0.00190	0.4709	mg/L	0.00190	0.40%
Cu 324.752	248220.6	0.5174	mg/L	0.00303	0.5174	mg/L	0.00303	0.59%
Fe 273.955	8377802.5	174.89	mg/L	2.459	174.89	mg/L	2.459	1.41%
Mg 279.077	20406405.1	485.55	mg/L	6.619	485.55	mg/L	6.619	1.36%
Mn 257.610	143196.5	0.4637	mg/L	0.00326	0.4637	mg/L	0.00326	0.70%
Ni 231.604	52189.7	0.8865	mg/L	0.00421	0.8865	mg/L	0.00421	0.47%
Tl 190.801	229.9	0.0949	mg/L	0.00345	0.0949	mg/L	0.00345	3.64%
V 292.402	167315.3	0.4823	mg/L	0.00141	0.4823	mg/L	0.00141	0.29%
Zn 206.200	82284.0	0.8436	mg/L	0.00424	0.8436	mg/L	0.00424	0.50%
Ti 334.940	7340.4	0.0098	mg/L	0.00003	0.0098	mg/L	0.00003	0.30%
Ca 227.546	333146.3	520.70	mg/L	2.872	520.70	mg/L	2.872	0.55%

Sequence No.: 5 **Autosampler Location: 17**
Sample ID: B0213-17A,5627 **Date Collected: 2/14/2003 9:22:06 AM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: 2 2/11/03 **Data Type: Original**

Mean Data: B0213-17A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	6106746.6	119.43	mg/L	1.281	119.43	mg/L	1.281	1.07%
Cr 267.716	60967.6	0.1824	mg/L	0.00088	0.1824	mg/L	0.00088	0.48%
Cu 324.752	119022.6	0.2617	mg/L	0.00201	0.2617	mg/L	0.00201	0.77%
Fe 273.955	13208560.9	275.73	mg/L	0.870	275.73	mg/L	0.870	0.32%
Mg 279.077	1822484.5	43.415	mg/L	0.4521	43.415	mg/L	0.4521	1.04%
Mn 257.610	3084884.6	10.023	mg/L	0.1180	10.023	mg/L	0.1180	1.18%
Ni 231.604	13911.7	0.2348	mg/L	0.00026	0.2348	mg/L	0.00026	0.11%
Tl 190.801	-130.0	0.0000	mg/L	0.00119	0.0000	mg/L	0.00119	>999.9%
V 292.402	90323.0	0.2580	mg/L	0.00244	0.2580	mg/L	0.00244	0.95%
Zn 206.200	56050.3	0.5834	mg/L	0.00184	0.5834	mg/L	0.00184	0.32%
Ti 334.940	2763937.4	2.3563	mg/L	0.01416	2.3563	mg/L	0.01416	0.60%
Ca 227.546	7099.7	8.7732	mg/L	0.19213	8.7732	mg/L	0.19213	2.19%

Sequence No.: 6 **Autosampler Location: 18**
Sample ID: B0213-18A,5627 **Date Collected: 2/14/2003 9:24:43 AM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: 2 **Data Type: Original**

Mean Data: B0213-18A,5627

Analyte	Mean Corrected	Calib			Sample			

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Al 308.215	6418212.5	125.52	mg/L	1.003	125.52	mg/L	1.003	0.80%
Cr 267.716	62112.7	0.1865	mg/L	0.00004	0.1865	mg/L	0.00004	0.02%
Cu 324.752	107634.0	0.2414	mg/L	0.00039	0.2414	mg/L	0.00039	0.16%
Fe 273.955	12266318.0	256.06	mg/L	1.629	256.06	mg/L	1.629	0.64%
Mg 279.077	2176167.5	51.806	mg/L	0.5791	51.806	mg/L	0.5791	1.12%
Mn 257.610	1576845.4	5.1252	mg/L	0.05235	5.1252	mg/L	0.05235	1.02%
Ni 231.604	15788.2	0.2668	mg/L	0.00156	0.2668	mg/L	0.00156	0.58%
Tl 190.801	-101.3	-0.0081	mg/L	0.01321	-0.0081	mg/L	0.01321	162.43%
V 292.402	79946.4	0.2273	mg/L	0.00047	0.2273	mg/L	0.00047	0.21%
Zn 206.200	58645.4	0.6104	mg/L	0.00007	0.6104	mg/L	0.00007	0.01%
Ti 334.940	3986923.6	3.3989	mg/L	0.01880	3.3989	mg/L	0.01880	0.55%
Ca 227.546	8024.4	10.396	mg/L	0.0400	10.396	mg/L	0.0400	0.38%

Sequence No.: 7
Sample ID: B0246-26A,5627
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 19
Date Collected: 2/14/2003 9:27:18 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0246-26A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	4045870.6	79.125	mg/L	0.0360	79.125	mg/L	0.0360	0.05%
Cr 267.716	43274.9	0.1296	mg/L	0.00039	0.1296	mg/L	0.00039	0.30%
Cu 324.752	67773.5	0.1496	mg/L	0.00000	0.1496	mg/L	0.00000	0.00%
Fe 273.955	6960188.9	145.29	mg/L	0.222	145.29	mg/L	0.222	0.15%
Mg 279.077	1406247.8	33.477	mg/L	0.0300	33.477	mg/L	0.0300	0.09%
Mn 257.610	1004877.0	3.2659	mg/L	0.00043	3.2659	mg/L	0.00043	0.01%
Ni 231.604	7528.9	0.1270	mg/L	0.00149	0.1270	mg/L	0.00149	1.18%
Tl 190.801	-41.8	0.0036	mg/L	0.00517	0.0036	mg/L	0.00517	144.88%
V 292.402	60400.3	0.1723	mg/L	0.00055	0.1723	mg/L	0.00055	0.32%
Zn 206.200	25502.0	0.2638	mg/L	0.00030	0.2638	mg/L	0.00030	0.11%
Ti 334.940	2631064.3	2.2431	mg/L	0.00486	2.2431	mg/L	0.00486	0.22%
Ca 227.546	8976.0	12.832	mg/L	0.1167	12.832	mg/L	0.1167	0.91%

Sequence No.: 8
Sample ID: B0257-11A,5627
Analyst:
Sample Wt:
Dilution: 10

Autosampler Location: 20
Date Collected: 2/14/2003 9:29:54 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0257-11A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	4379886.3	85.657	mg/L	0.6534	85.657	mg/L	0.6534	0.76%
Cr 267.716	58647.7	0.1761	mg/L	0.00077	0.1761	mg/L	0.00077	0.43%
Cu 324.752	3121818.3	6.2605	mg/L	0.02810	6.2605	mg/L	0.02810	0.45%
Fe 273.955	10900388.8	227.55	mg/L	0.736	227.55	mg/L	0.736	0.32%
Mg 279.077	333444.1	7.9473	mg/L	0.04120	7.9473	mg/L	0.04120	0.52%
Mn 257.610	801666.4	2.6075	mg/L	0.00812	2.6075	mg/L	0.00812	0.31%
Ni 231.604	7919.0	0.1341	mg/L	0.00105	0.1341	mg/L	0.00105	0.78%
Tl 190.801	-36.8	0.0022	mg/L	0.00287	0.0022	mg/L	0.00287	129.90%
V 292.402	65338.8	0.1867	mg/L	0.00133	0.1867	mg/L	0.00133	0.71%
Zn 206.200	604900.3	6.3772	mg/L	0.02089	6.3772	mg/L	0.02089	0.33%
Ti 334.940	949767.0	0.8104	mg/L	0.00453	0.8104	mg/L	0.00453	0.56%
Ca 227.546	64866.3	99.606	mg/L	0.1141	99.606	mg/L	0.1141	0.11%

Sequence No.: 9
Sample ID: ICSA1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/2003 9:32:30 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	25441941.4	497.57	mg/L	5.821	497.57	mg/L	5.821	1.17%
Cr 267.716	-679.3	0.0002	mg/L	0.00003	0.0002	mg/L	0.00003	15.09%
Cu 324.752	-5561.0	0.0117	mg/L	0.00012	0.0117	mg/L	0.00012	0.99%
Fe 273.955	8450002.0	176.39	mg/L	1.700	176.39	mg/L	1.700	0.96%
Mg 279.077	20604597.3	490.26	mg/L	4.544	490.26	mg/L	4.544	0.93%
Mn 257.610	-3083.8	-0.0114	mg/L	0.00011	-0.0114	mg/L	0.00011	0.98%
Ni 231.604	-18.6	-0.0003	mg/L	0.00037	-0.0003	mg/L	0.00037	115.48%
Tl 190.801	-2.2	0.0001	mg/L	0.01758	0.0001	mg/L	0.01758	>999.9%
V 292.402	-564.2	-0.0031	mg/L	0.00001	-0.0031	mg/L	0.00001	0.33%
Zn 206.200	-1550.6	-0.0417	mg/L	0.00088	-0.0417	mg/L	0.00088	2.10%
Ti 334.940	8188.1	0.0107	mg/L	0.00009	0.0107	mg/L	0.00009	0.81%
Ca 227.546	335074.4	523.75	mg/L	4.911	523.75	mg/L	4.911	0.94%

Sequence No.: 10
Sample ID: ICSAB1
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/14/2003 9:35:08 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB1

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	25595049.1	500.56	mg/L	0.464	500.56	mg/L	0.464	0.09%
Cr 267.716	157476.8	0.4692	mg/L	0.00137	0.4692	mg/L	0.00137	0.29%
Cu 324.752	248499.6	0.5183	mg/L	0.00417	0.5183	mg/L	0.00417	0.81%
Fe 273.955	8479459.9	177.01	mg/L	0.067	177.01	mg/L	0.067	0.04%
Mg 279.077	20644649.8	491.22	mg/L	0.214	491.22	mg/L	0.214	0.04%
Mn 257.610	141176.4	0.4572	mg/L	0.00085	0.4572	mg/L	0.00085	0.19%
Ni 231.604	51502.5	0.8749	mg/L	0.00147	0.8749	mg/L	0.00147	0.17%
Tl 190.801	225.8	0.0932	mg/L	0.00866	0.0932	mg/L	0.00866	9.29%
V 292.402	166121.2	0.4788	mg/L	0.00221	0.4788	mg/L	0.00221	0.46%
Zn 206.200	82695.3	0.8477	mg/L	0.00281	0.8477	mg/L	0.00281	0.33%
Ti 334.940	7611.8	0.0101	mg/L	0.00000	0.0101	mg/L	0.00000	0.02%
Ca 227.546	332721.4	520.02	mg/L	1.213	520.02	mg/L	1.213	0.23%

Sequence No.: 11
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/14/2003 9:37:48 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Al 308.215	511851.6	10.010	mg/L	0.1744	10.010	mg/L	0.1744	1.74%
Cr 267.716	345130.8	1.0236	mg/L	0.01503	1.0236	mg/L	0.01503	1.47%
Cu 324.752	647106.5	1.2889	mg/L	0.02144	1.2889	mg/L	0.02144	1.66%
Fe 273.955	247006.2	5.1563	mg/L	0.05132	5.1563	mg/L	0.05132	1.00%
Mg 279.077	1069770.4	25.467	mg/L	0.3528	25.467	mg/L	0.3528	1.39%
Mn 257.610	782528.2	2.5411	mg/L	0.02196	2.5411	mg/L	0.02196	0.86%
Ni 231.604	152094.2	2.5835	mg/L	0.02440	2.5835	mg/L	0.02440	0.94%
Tl 190.801	1260.3	0.5153	mg/L	0.00101	0.5153	mg/L	0.00101	0.20%
V 292.402	896433.0	2.5886	mg/L	0.03877	2.5886	mg/L	0.03877	1.50%
Zn 206.200	244763.5	2.5819	mg/L	0.03209	2.5819	mg/L	0.03209	1.24%
Ti 334.940	1695.2	0.0015	mg/L	0.00001	0.0015	mg/L	0.00001	0.60%
Ca 227.546	16362.0	25.456	mg/L	0.0453	25.456	mg/L	0.0453	0.18%

Sequence No.: 12
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/14/2003 9:41:49 AM
Sample Prep Volume:
Data Type: Original

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	73.2	0.0005	mg/L	0.00030	0.0005	mg/L	0.00030	67.19%
Al 308.215	65.4	0.0023	mg/L	0.00042	0.0023	mg/L	0.00042	18.64%
As 188.979	0.2	0.0001	mg/L	0.00121	0.0001	mg/L	0.00121	>999.9%
Ba 233.527	29.2	0.0006	mg/L	0.00014	0.0006	mg/L	0.00014	22.86%
Be 313.107	29.0	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	49.49%
Co 228.616	6.5	0.0005	mg/L	0.00003	0.0005	mg/L	0.00003	5.64%
Cr 267.716	3.2	0.0001	mg/L	0.00005	0.0001	mg/L	0.00005	70.82%
Cu 324.752	86.2	0.0004	mg/L	0.00019	0.0004	mg/L	0.00019	44.01%
Fe 273.955	368.0	0.0115	mg/L	0.00129	0.0115	mg/L	0.00129	11.23%
Mg 279.077	23.0	0.0015	mg/L	0.00105	0.0015	mg/L	0.00105	70.07%
Mn 257.610	64.0	0.0002	mg/L	0.00003	0.0002	mg/L	0.00003	17.19%
Ni 231.604	0.5	0.0001	mg/L	0.00003	0.0001	mg/L	0.00003	48.92%
Pb 220.353	0.8	0.0005	mg/L	0.00195	0.0005	mg/L	0.00195	419.71%
Sb 206.836	0.3	0.0003	mg/L	0.00019	0.0003	mg/L	0.00019	57.84%
Se 196.026	-0.7	-0.0010	mg/L	0.00119	-0.0010	mg/L	0.00119	120.55%
Tl 190.801	1.0	0.0005	mg/L	0.00104	0.0005	mg/L	0.00104	194.26%
V 292.402	11.4	0.0001	mg/L	0.00004	0.0001	mg/L	0.00004	31.15%
Zn 206.200	4.3	0.0004	mg/L	0.00024	0.0004	mg/L	0.00024	66.79%
Na 330.237	-203.1	-0.1698	mg/L	0.15490	-0.1698	mg/L	0.15490	91.25%
Cd 226.502	1.6	0.0001	mg/L	0.00009	0.0001	mg/L	0.00009	109.10%
Ti 334.940	-9.2	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	40.07%
Ca 227.546	-5.5	-0.0609	mg/L	0.01962	-0.0609	mg/L	0.01962	32.20%

Sequence No.: 9
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/03 4:36:26 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:22 AM,

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3304.3	0.0033	mg/L	0.00049	0.0033	mg/L	0.00049	15.09%
Al 308.215	14021713.2	485.64	mg/L	0.466	485.64	mg/L	0.466	0.10%
As 188.979	12.7	-0.0033	mg/L	0.00009	-0.0033	mg/L	0.00009	2.84%
Ba 233.527	-414.4	-0.0072	mg/L	0.00039	-0.0072	mg/L	0.00039	5.40%
Be 313.107	33.7	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	261.42%
Co 228.616	7.3	0.0034	mg/L	0.00002	0.0034	mg/L	0.00002	0.71%
Cr 267.716	-53.3	-0.0009	mg/L	0.00021	-0.0009	mg/L	0.00021	22.22%
Cu 324.752	-3340.2	-0.0018	mg/L	0.00048	-0.0018	mg/L	0.00048	27.42%
Fe 273.955	5582384.7	173.85	mg/L	0.232	173.85	mg/L	0.232	0.13%
Mg 279.077	7425686.4	481.82	mg/L	0.680	481.82	mg/L	0.680	0.14%
Mn 257.610	3151.1	-0.0032	mg/L	0.00003	-0.0032	mg/L	0.00003	0.96%
Ni 231.604	-892.1	-0.0024	mg/L	0.00007	-0.0024	mg/L	0.00007	2.82%
Pb 220.353	569.1	-0.0059	mg/L	0.00202	-0.0059	mg/L	0.00202	34.41%
Sb 206.836	-9.2	-0.0090	mg/L	0.00378	-0.0090	mg/L	0.00378	42.01%
Se 196.026	-44.4	-0.0001	mg/L	0.00229	-0.0001	mg/L	0.00229	>999.9%
Tl 190.801	-57.7	0.0063	mg/L	0.00339	0.0063	mg/L	0.00339	54.10%
V 292.402	7260.1	0.0026	mg/L	0.00102	0.0026	mg/L	0.00102	38.69%
Zn 206.200	254.4	0.0012	mg/L	0.00084	0.0012	mg/L	0.00084	68.94%
Na 330.237	-753.4	-0.3659	mg/L	0.09403	-0.3659	mg/L	0.09403	25.70%
Cd 226.502	67.2	-0.0049	mg/L	0.00014	-0.0049	mg/L	0.00014	2.80%
Ti 334.940	-4766.3	-0.0060	mg/L	0.00009	-0.0060	mg/L	0.00009	1.57%
Ca 227.546	45388.2	497.17	mg/L	2.067	497.17	mg/L	2.067	0.42%

Sequence No.: 10
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/14/03 4:40:39 PM
Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:23 AM,

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	30584.4	0.2124	mg/L	0.00027	0.2124	mg/L	0.00027	0.13%

Sequence No.: 25
Sample ID: B0218-08E,5649
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 28
Date Collected: 2/14/03 5:42:00 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:36 AM,

Mean Data: B0218-08E,5649

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	Sample RSD
Ag 328.068	-154.0	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	6.17%
Al 308.215	85.1	0.0005	mg/L	0.00131	0.0005	mg/L	0.00131	271.64%
As 188.979	-2.7	-0.0015	mg/L	0.00053	-0.0015	mg/L	0.00053	34.44%
Ba 233.527	627.7	0.0137	mg/L	0.00005	0.0137	mg/L	0.00005	0.39%
Be 313.107	1699.3	0.0008	mg/L	0.00003	0.0008	mg/L	0.00003	3.05%
Co 228.616	1.7	0.0003	mg/L	0.00022	0.0003	mg/L	0.00022	81.81%
Cr 267.716	30.1	0.0008	mg/L	0.00006	0.0008	mg/L	0.00006	7.70%
Cu 324.752	-51.0	0.0002	mg/L	0.00021	0.0002	mg/L	0.00021	87.94%
Fe 273.955	289720.2	9.0213	mg/L	0.01624	9.0213	mg/L	0.01624	0.18%
Mg 279.077	48700.7	3.1608	mg/L	0.01006	3.1608	mg/L	0.01006	0.32%
Mn 257.610	213742.8	0.5277	mg/L	0.00131	0.5277	mg/L	0.00131	0.25%
Ni 231.604	-45.9	-0.0001	mg/L	0.00044	-0.0001	mg/L	0.00044	427.20%
Pb 220.353	3.2	0.0012	mg/L	0.00198	0.0012	mg/L	0.00198	167.71%
Sb 206.836	-1.9	-0.0020	mg/L	0.00409	-0.0020	mg/L	0.00409	200.66%
Se 196.026	-0.2	0.0011	mg/L	0.00164	0.0011	mg/L	0.00164	150.11%
Tl 190.801	4.7	0.0031	mg/L	0.00067	0.0031	mg/L	0.00067	21.74%
V 292.402	89.8	0.0005	mg/L	0.00058	0.0005	mg/L	0.00058	105.99%
Zn 206.200	166.5	0.0142	mg/L	0.00020	0.0142	mg/L	0.00020	1.42%
Na 330.237	7656.0	6.4115	mg/L	0.18589	6.4115	mg/L	0.18589	2.90%
Cd 226.502	3.2	-0.0003	mg/L	0.00024	-0.0003	mg/L	0.00024	87.51%
Ti 334.940	-95.5	-0.0001	mg/L	0.00009	-0.0001	mg/L	0.00009	122.39%
Ca 227.546	1952.5	21.380	mg/L	0.1885	21.380	mg/L	0.1885	0.88%

Sequence No.: 26
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/03 5:46:07 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:36 AM,

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	Sample RSD
Ag 328.068	-3356.0	0.0030	mg/L	0.00000	0.0030	mg/L	0.00000	0.09%
Al 308.215	14082844.2	487.76	mg/L	1.129	487.76	mg/L	1.129	0.23%
As 188.979	14.1	-0.0024	mg/L	0.00207	-0.0024	mg/L	0.00207	84.51%
Ba 233.527	-455.5	-0.0080	mg/L	0.00074	-0.0080	mg/L	0.00074	9.23%
Be 313.107	-7.5	0.0000	mg/L	0.00000	0.0000	mg/L	0.00000	18.51%
Co 228.616	5.7	0.0033	mg/L	0.00017	0.0033	mg/L	0.00017	5.18%
Cr 267.716	-71.8	-0.0013	mg/L	0.00006	-0.0013	mg/L	0.00006	4.22%
Cu 324.752	-3452.5	-0.0023	mg/L	0.00023	-0.0023	mg/L	0.00023	10.02%
Fe 273.955	5598465.4	174.35	mg/L	0.537	174.35	mg/L	0.537	0.31%
Mg 279.077	7453757.8	483.64	mg/L	1.418	483.64	mg/L	1.418	0.29%
Mn 257.610	3248.6	-0.0030	mg/L	0.00002	-0.0030	mg/L	0.00002	0.62%
Ni 231.604	-896.7	-0.0026	mg/L	0.00009	-0.0026	mg/L	0.00009	3.51%
Pb 220.353	566.5	-0.0087	mg/L	0.00310	-0.0087	mg/L	0.00310	35.57%
Sb 206.836	-6.4	-0.0057	mg/L	0.00115	-0.0057	mg/L	0.00115	20.14%
Se 196.026	-44.5	0.0000	mg/L	0.00195	0.0000	mg/L	0.00195	>999.9%
Tl 190.801	-59.7	0.0054	mg/L	0.00158	0.0054	mg/L	0.00158	29.43%
V 292.402	7312.9	0.0029	mg/L	0.00002	0.0029	mg/L	0.00002	0.71%
Zn 206.200	248.3	0.0006	mg/L	0.00028	0.0006	mg/L	0.00028	44.54%
Na 330.237	-429.6	-0.0945	mg/L	0.09548	-0.0945	mg/L	0.09548	101.02%
Cd 226.502	78.1	-0.0044	mg/L	0.00017	-0.0044	mg/L	0.00017	3.94%
Ti 334.940	-4864.9	-0.0061	mg/L	0.00011	-0.0061	mg/L	0.00011	1.83%
Ca 227.546	45485.5	498.24	mg/L	0.497	498.24	mg/L	0.497	0.10%

Sequence No.: 27

Autosampler Location: 6

Sequence No.: 25
Sample ID: B0218-08E,5649
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 28
Date Collected: 2/14/03 5:42:00 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:36 AM,

Mean Data: B0218-08E,5649

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	Sample RSD
Ag 328.068	-154.0	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	6.17%
Al 308.215	85.1	0.0005	mg/L	0.00131	0.0005	mg/L	0.00131	271.64%
As 188.979	-2.7	-0.0015	mg/L	0.00053	-0.0015	mg/L	0.00053	34.44%
Ba 233.527	627.7	0.0137	mg/L	0.00005	0.0137	mg/L	0.00005	0.39%
Be 313.107	1699.3	0.0008	mg/L	0.00003	0.0008	mg/L	0.00003	3.05%
Co 228.616	1.7	0.0003	mg/L	0.00022	0.0003	mg/L	0.00022	81.81%
Cr 267.716	30.1	0.0008	mg/L	0.00006	0.0008	mg/L	0.00006	7.70%
Cu 324.752	-51.0	0.0002	mg/L	0.00021	0.0002	mg/L	0.00021	87.94%
Fe 273.955	289720.2	9.0213	mg/L	0.01624	9.0213	mg/L	0.01624	0.18%
Mg 279.077	48700.7	3.1608	mg/L	0.01006	3.1608	mg/L	0.01006	0.32%
Mn 257.610	213742.8	0.5277	mg/L	0.00131	0.5277	mg/L	0.00131	0.25%
Ni 231.604	-45.9	-0.0001	mg/L	0.00044	-0.0001	mg/L	0.00044	427.20%
Pb 220.353	3.2	0.0012	mg/L	0.00198	0.0012	mg/L	0.00198	167.71%
Sb 206.836	-1.9	-0.0020	mg/L	0.00409	-0.0020	mg/L	0.00409	200.66%
Se 196.026	-0.2	0.0011	mg/L	0.00164	0.0011	mg/L	0.00164	150.11%
Tl 190.801	4.7	0.0031	mg/L	0.00067	0.0031	mg/L	0.00067	21.74%
V 292.402	89.8	0.0005	mg/L	0.00058	0.0005	mg/L	0.00058	105.99%
Zn 206.200	166.5	0.0142	mg/L	0.00020	0.0142	mg/L	0.00020	1.42%
Na 330.237	7656.0	6.4115	mg/L	0.18589	6.4115	mg/L	0.18589	2.90%
Cd 226.502	3.2	-0.0003	mg/L	0.00024	-0.0003	mg/L	0.00024	87.51%
Ti 334.940	-95.5	-0.0001	mg/L	0.00009	-0.0001	mg/L	0.00009	122.39%
Ca 227.546	1952.5	21.380	mg/L	0.1885	21.380	mg/L	0.1885	0.88%

Sequence No.: 26
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/03 5:46:07 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/15/03 8:41:36 AM,

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Calib Std.Dev.	Sample Conc.	Sample Units	Sample Std.Dev.	Sample RSD
Ag 328.068	-3356.0	0.0030	mg/L	0.00000	0.0030	mg/L	0.00000	0.09%
Al 308.215	14082844.2	487.76	mg/L	1.129	487.76	mg/L	1.129	0.23%
As 188.979	14.1	-0.0024	mg/L OL	0.00207	-0.0024	mg/L	0.00207	84.51%
Ba 233.527	-455.5	-0.0080	mg/L	0.00074	-0.0080	mg/L	0.00074	9.23%
Be 313.107	-7.5	0.0000	mg/L OL	0.00000	0.0000	mg/L	0.00000	18.51%
Co 228.616	5.7	0.0033	mg/L	0.00017	0.0033	mg/L	0.00017	5.18%
Cr 267.716	-71.8	-0.0013	mg/L	0.00006	-0.0013	mg/L	0.00006	4.22%
Cu 324.752	-3452.5	-0.0023	mg/L OL	0.00023	-0.0023	mg/L	0.00023	10.02%
Fe 273.955	5598465.4	174.35	mg/L	0.537	174.35	mg/L	0.537	0.31%
Mg 279.077	7453757.8	483.64	mg/L	1.418	483.64	mg/L	1.418	0.29%
Mn 257.610	3248.6	-0.0030	mg/L	0.00002	-0.0030	mg/L	0.00002	0.62%
Ni 231.604	-896.7	-0.0026	mg/L	0.00009	-0.0026	mg/L	0.00009	3.51%
Pb 220.353	566.5	-0.0087	mg/L	0.00310	-0.0087	mg/L	0.00310	35.57%
Sb 206.836	-6.4	-0.0057	mg/L	0.00115	-0.0057	mg/L	0.00115	20.14%
Se 196.026	-44.5	0.0000	mg/L OL	0.00195	0.0000	mg/L	0.00195	>999.9%
Tl 190.801	-59.7	0.0054	mg/L	0.00158	0.0054	mg/L	0.00158	29.43%
V 292.402	7312.9	0.0029	mg/L	0.00002	0.0029	mg/L	0.00002	0.71%
Zn 206.200	248.3	0.0006	mg/L OL	0.00028	0.0006	mg/L	0.00028	44.54%
Na 330.237	-429.6	-0.0945	mg/L	0.09548	-0.0945	mg/L	0.09548	101.02%
Cd 226.502	78.1	-0.0044	mg/L	0.00017	-0.0044	mg/L	0.00017	3.94%
Ti 334.940	-4864.9	-0.0061	mg/L	0.00011	-0.0061	mg/L	0.00011	1.83%
Ca 227.546	45485.5	498.24	mg/L	0.497	498.24	mg/L	0.497	0.10%

Sequence No.: 27

Autosampler Location: 6

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	3135.6	1.4084	mg/L	0.01345	1.4084	mg/L	0.01345	0.95%

Analysis Begun

Start Time: 2/14/03 9:06:09 AM
Logged In Analyst: Optima1
Spectrometer Model: Optima 3000 DV
Plasma On Time: 2/14/03 8:05:14 AM
Technique: ICP Continuous
Autosampler Model: AS-90

Sample Information File: D:\pe\administrator\Sample Information\TEST.sif
Results Data Set: 021401
Results Library: D:\pe\administrator\Results\Results.mdb

Sequence No.: 7
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/14/03 9:06:09 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	56687.8	25.462	mg/L	0.3244	25.462	mg/L	0.3244	1.27%

Sequence No.: 8
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/14/03 9:08:29 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	1554.5	0.6982	mg/L	0.04379	0.6982	mg/L	0.04379	6.27%

Sequence No.: 9
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/14/03 9:10:48 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	982.6	0.4414	mg/L	0.04219	0.4414	mg/L	0.04219	9.56%

K 766.490	1178.0	0.5291	mg/L	0.00477	0.5291	mg/L	0.00477	0.90%

Sequence No.: 33
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/14/03 10:26:21 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	127.3	0.0572	mg/L	0.02774	0.0572	mg/L	0.02774	48.49%

Sequence No.: 34
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/14/03 10:28:41 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	55346.5	24.859	mg/L	0.0533	24.859	mg/L	0.0533	0.21%

Sequence No.: 35
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/14/03 10:31:02 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	52242.3	23.465	mg/L	0.0144	23.465	mg/L	0.0144	0.06%

Sequence No.: 36
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/14/03 10:33:19 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	568.4	0.2553	mg/L	0.01875	0.2553	mg/L	0.01875	7.34%

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Na 589.592	3	Lin Thru 0	0.0	6050	0.00000	0.999940	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 2/14/03 11:10:48 AM

Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	301953.1	49.907	mg/L	0.8699	49.907	mg/L	0.8699	1.74%

Sequence No.: 6
Sample ID: LRA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 2/14/03 11:13:06 AM

Sample Prep Volume:
Data Type: Original

Mean Data: LRA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1190990.3	196.85	mg/L	0.374	196.85	mg/L	0.374	0.19%

Sequence No.: 7
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/14/03 11:15:28 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	161916.0	26.762	mg/L	0.1855	26.762	mg/L	0.1855	0.69%

Sequence No.: 8
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/14/03 11:17:46 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	5366.5	0.8870	mg/L	0.02544	0.8870	mg/L	0.02544	2.87%

Sequence No.: 9
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/03 11:20:05 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	4412.7	0.7293	mg/L	0.03626	0.7293	mg/L	0.03626	4.97%

Sequence No.: 21
Sample ID: B0246-26A,5627
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 2/14/03 11:47:41 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0246-26A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	19325.8	3.1942	mg/L	0.02785	3.1942	mg/L	0.02785	0.87%

Sequence No.: 22
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/14/03 11:49:56 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1460.4	0.2414	mg/L	0.01594	0.2414	mg/L	0.01594	6.60%

Sequence No.: 23
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/14/03 11:52:15 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	164949.7	27.263	mg/L	0.0581	27.263	mg/L	0.0581	0.21%

Sequence No.: 24
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/14/03 11:54:37 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	156896.7	25.932	mg/L	0.1313	25.932	mg/L	0.1313	0.51%

Sequence No.: 25
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/14/03 11:56:55 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1052.5	0.1740	mg/L	0.00555	0.1740	mg/L	0.00555	3.19%

Sequence No.: 26
Sample ID: B0257-02A,5627
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 34
Date Collected: 2/14/03 11:59:14 AM
Sample Prep Volume:
Data Type: Original

Sample Wt:
Dilution:

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	296.5	0.0490	mg/L	0.01219	0.0490	mg/L	0.01219	24.86%

Sequence No.: 49
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/14/03 12:52:09 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	160716.3	26.563	mg/L	0.2238	26.563	mg/L	0.2238	0.84%

Sequence No.: 50
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/14/03 12:54:31 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	153476.4	25.367	mg/L	0.0238	25.367	mg/L	0.0238	0.09%

Sequence No.: 51
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/14/03 12:56:49 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	274.4	0.0454	mg/L	0.01046	0.0454	mg/L	0.01046	23.07%

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	FTA-SU-101-1617	3.4		Aluminum	460156	-20.5	5810	-0.26	na	na
Arsenic	FTA-SU-101-1617	2.6		Aluminum	460156	-8.1	5810	-0.10	na	na
Barium	FTA-SU-101-1617	47		Aluminum	460156	-8	5810	-0.10	na	na
Cadmium	FTA-SU-101-1617	0.07		Aluminum	460156	-4.9	5810	-0.06	J L	na
Chromium	FTA-SU-101-1617	8.5		Aluminum	460156	-1.3	5810	-0.02	na	na
Cobalt	FTA-SU-101-1617	1.7		Aluminum	460156	3.4	5810	0.04	na	na
Copper	FTA-SU-101-1617	4.7		Aluminum	460156	11.7	5810	0.15	na	na
Lead	FTA-SU-101-1617	80.4		Aluminum	460156	-8.7	5810	-0.11	na	na
Manganese	FTA-SU-101-1617	53		Aluminum	460156	-11.6	5810	-0.15	na	na
Nickel	FTA-SU-101-1617	25.8		Aluminum	460156	-2.6	5810	-0.03	na	na
Potassium	FTA-SU-101-1617	282		Aluminum	460156	441.4	5810	5.57	na	na
Selenium	FTA-SU-101-1617	0.43	U	Aluminum	460156	-139	5810	-1.76	na	U J L
Silver	FTA-SU-101-1617	0.21		Aluminum	460156	4.2	5810	0.05	J K	na
Sodium	FTA-SU-101-1617	132	B	Aluminum	460156	729.3	5810	9.21	na	na
Thallium	FTA-SU-101-1617	0.14	U	Aluminum	460156	9.6	5810	0.12	na	na
Vanadium	FTA-SU-101-1617	58.5		Aluminum	460156	5.8	5810	0.07	na	na
Zinc	FTA-SU-101-1617	30.2		Aluminum	460156	-47.6	5810	-0.60	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-105	0.16	U	Aluminum	460156	-20.5	8180	-0.36	na	U J L
Arsenic	WOD-SS-105	9.5		Aluminum	460156	-8.1	8180	-0.14	na	na
Barium	WOD-SS-105	51.9		Aluminum	460156	-8	8180	-0.14	na	na
Cadmium	WOD-SS-105	0.08		Aluminum	460156	-4.9	8180	-0.09	J L	na
Chromium	WOD-SS-105	12.2		Aluminum	460156	-1.3	8180	-0.02	na	na
Cobalt	WOD-SS-105	2.7		Aluminum	460156	3.4	8180	0.06	na	na
Copper	WOD-SS-105	6		Aluminum	460156	11.7	8180	0.21	na	na
Lead	WOD-SS-105	39.4		Aluminum	460156	-8.7	8180	-0.15	na	na
Manganese	WOD-SS-105	168		Aluminum	460156	-11.6	8180	-0.21	na	na
Nickel	WOD-SS-105	5.2		Aluminum	460156	-2.6	8180	-0.05	na	na
Potassium	WOD-SS-105	331		Aluminum	460156	441.4	8180	7.85	na	na
Selenium	WOD-SS-105	0.49	U	Aluminum	460156	-139	8180	-2.47	na	U J L
Silver	WOD-SS-105	0.38		Aluminum	460156	4.2	8180	0.07	J K	na
Sodium	WOD-SS-105	23.7	B	Aluminum	460156	729.3	8180	12.96	na	na
Thallium	WOD-SS-105	0.16	U	Aluminum	460156	9.6	8180	0.17	na	na
Vanadium	WOD-SS-105	15.1		Aluminum	460156	5.8	8180	0.10	na	na
Zinc	WOD-SS-105	25.1		Aluminum	460156	-47.6	8180	-0.85	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-105	0.16	U	Iron	163601	-20.5	7160	-0.90	na	U J L
Arsenic	WOD-SS-105	9.5		Iron	163601	-8.1	7160	-0.35	na	na
Barium	WOD-SS-105	51.9		Iron	163601	-8	7160	-0.35	na	na
Cadmium	WOD-SS-105	0.08		Iron	163601	-4.9	7160	-0.21	J L	na
Chromium	WOD-SS-105	12.2		Iron	163601	-1.3	7160	-0.06	na	na
Cobalt	WOD-SS-105	2.7		Iron	163601	3.4	7160	0.15	na	na
Copper	WOD-SS-105	6		Iron	163601	11.7	7160	0.51	na	na
Lead	WOD-SS-105	39.4		Iron	163601	-8.7	7160	-0.38	na	na
Manganese	WOD-SS-105	168		Iron	163601	-11.6	7160	-0.51	na	na
Nickel	WOD-SS-105	5.2		Iron	163601	-2.6	7160	-0.11	na	na
Potassium	WOD-SS-105	331		Iron	163601	441.4	7160	19.32	na	na
Selenium	WOD-SS-105	0.49	U	Iron	163601	-139	7160	-6.08	na	U J L
Silver	WOD-SS-105	0.38		Iron	163601	4.2	7160	0.18	J K	na
Sodium	WOD-SS-105	23.7	B	Iron	163601	729.3	7160	31.92	na	na
Thallium	WOD-SS-105	0.16	U	Iron	163601	9.6	7160	0.42	na	na
Vanadium	WOD-SS-105	15.1		Iron	163601	5.8	7160	0.25	na	na
Zinc	WOD-SS-105	25.1		Iron	163601	-47.6	7160	-2.08	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-105-0507	0.16	U	Iron	163601	-20.5	6640	-0.83	na	U/L
Arsenic	WOD-SU-105-0507	2.8		Iron	163601	-8.1	6640	-0.33	J/L	na
Barium	WOD-SU-105-0507	27.5		Iron	163601	-8	6640	-0.32	na	na
Cadmium	WOD-SU-105-0507	0.04	U	Iron	163601	-4.9	6640	-0.20	na	U/L
Chromium	WOD-SU-105-0507	9.2		Iron	163601	-1.3	6640	-0.05	na	na
Cobalt	WOD-SU-105-0507	3.2		Iron	163601	3.4	6640	0.14	na	na
Copper	WOD-SU-105-0507	2.8		Iron	163601	11.7	6640	0.47	J/K	na
Lead	WOD-SU-105-0507	3.7		Iron	163601	-8.7	6640	-0.35	na	na
Manganese	WOD-SU-105-0507	64.2		Iron	163601	-11.6	6640	-0.47	na	na
Nickel	WOD-SU-105-0507	5.5		Iron	163601	-2.6	6640	-0.11	na	na
Potassium	WOD-SU-105-0507	327		Iron	163601	441.4	6640	17.91	na	na
Selenium	WOD-SU-105-0507	0.48	U	Iron	163601	-139	6640	-5.64	na	U/L
Silver	WOD-SU-105-0507	0.35		Iron	163601	4.2	6640	0.17	J/K	na
Sodium	WOD-SU-105-0507	25	B	Iron	163601	729.3	6640	29.60	na	na
Thallium	WOD-SU-105-0507	0.16	U	Iron	163601	9.6	6640	0.39	na	na
Vanadium	WOD-SU-105-0507	12.9		Iron	163601	5.8	6640	0.24	na	na
Zinc	WOD-SU-105-0507	8.4		Iron	163601	-47.6	6640	-1.93	J/L	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-105-0507	0.16	U	Aluminum	460156	-20.5	11700	-0.52	na	U/L
Arsenic	WOD-SU-105-0507	2.8		Aluminum	460156	-8.1	11700	-0.21	na	na
Barium	WOD-SU-105-0507	27.5		Aluminum	460156	-8	11700	-0.20	na	na
Cadmium	WOD-SU-105-0507	0.04	U	Aluminum	460156	-4.9	11700	-0.12	na	U/L
Chromium	WOD-SU-105-0507	9.2		Aluminum	460156	-1.3	11700	-0.03	na	na
Cobalt	WOD-SU-105-0507	3.2		Aluminum	460156	3.4	11700	0.09	na	na
Copper	WOD-SU-105-0507	2.8		Aluminum	460156	11.7	11700	0.30	J/K	na
Lead	WOD-SU-105-0507	3.7		Aluminum	460156	-8.7	11700	-0.22	na	na
Manganese	WOD-SU-105-0507	64.2		Aluminum	460156	-11.6	11700	-0.29	na	na
Nickel	WOD-SU-105-0507	5.5		Aluminum	460156	-2.6	11700	-0.07	na	na
Potassium	WOD-SU-105-0507	327		Aluminum	460156	441.4	11700	11.22	na	na
Selenium	WOD-SU-105-0507	0.48	U	Aluminum	460156	-139	11700	-3.53	na	U/L
Silver	WOD-SU-105-0507	0.35		Aluminum	460156	4.2	11700	0.11	J/K	na
Sodium	WOD-SU-105-0507	25	B	Aluminum	460156	729.3	11700	18.54	na	na
Thallium	WOD-SU-105-0507	0.16	U	Aluminum	460156	9.6	11700	0.24	na	na
Vanadium	WOD-SU-105-0507	12.9		Aluminum	460156	5.8	11700	0.15	na	na
Zinc	WOD-SU-105-0507	8.4		Aluminum	460156	-47.6	11700	-1.21	J/L	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-111-0507	18.3		Aluminum	460156	-20.5	47600	-2.12	J/L	na
Arsenic	WOD-SU-111-0507	11.9		Aluminum	460156	-8.1	47600	-0.84	na	na
Barium	WOD-SU-111-0507	983		Aluminum	460156	-8	47600	-0.83	na	na
Cadmium	WOD-SU-111-0507	23.4		Aluminum	460156	-4.9	47600	-0.51	na	na
Chromium	WOD-SU-111-0507	78.6		Aluminum	460156	-1.3	47600	-0.13	na	na
Cobalt	WOD-SU-111-0507	6.3		Aluminum	460156	3.4	47600	0.35	na	na
Copper	WOD-SU-111-0507	3040		Aluminum	460156	11.7	47600	1.21	na	na
Lead	WOD-SU-111-0507	1100		Aluminum	460156	-8.7	47600	-0.90	na	na
Manganese	WOD-SU-111-0507	1100		Aluminum	460156	-11.6	47600	-1.20	na	na
Nickel	WOD-SU-111-0507	56.8		Aluminum	460156	-2.6	47600	-0.27	na	na
Potassium	WOD-SU-111-0507	1830		Aluminum	460156	441.4	47600	45.66	na	na
Selenium	WOD-SU-111-0507	0.5	U	Aluminum	460156	-139	47600	-14.38	na	U/L
Silver	WOD-SU-111-0507	389		Aluminum	460156	4.2	47600	0.43	na	na
Sodium	WOD-SU-111-0507	1060		Aluminum	460156	729.3	47600	75.44	na	na
Thallium	WOD-SU-111-0507	3.5		Aluminum	460156	9.6	47600	0.99	J/K	na
Vanadium	WOD-SU-111-0507	92		Aluminum	460156	5.8	47600	0.60	na	na
Zinc	WOD-SU-111-0507	3550		Aluminum	460156	-47.6	47600	-4.92	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-111-0507	18.3		Iron	163601	-20.5	127000	-15.91	J L	na
Arsenic	WOD-SU-111-0507	11.9		Iron	163601	-8.1	127000	-6.29	J L	na
Barium	WOD-SU-111-0507	983		Iron	163601	-8	127000	-6.21	na	na
Cadmium	WOD-SU-111-0507	23.4		Iron	163601	-4.9	127000	-3.80	J L	na
Chromium	WOD-SU-111-0507	78.6		Iron	163601	-1.3	127000	-1.01	na	na
Cobalt	WOD-SU-111-0507	6.3		Iron	163601	3.4	127000	2.64	J K	na
Copper	WOD-SU-111-0507	3040		Iron	163601	11.7	127000	9.08	na	na
Lead	WOD-SU-111-0507	1100		Iron	163601	-8.7	127000	-6.75	na	na
Manganese	WOD-SU-111-0507	1100		Iron	163601	-11.6	127000	-9.00	na	na
Nickel	WOD-SU-111-0507	56.8		Iron	163601	-2.6	127000	-2.02	na	na
Potassium	WOD-SU-111-0507	1830		Iron	163601	441.4	127000	342.65	J K	na
Selenium	WOD-SU-111-0507	0.5	U	Iron	163601	-139	127000	-107.90	na	U J L
Silver	WOD-SU-111-0507	389		Iron	163601	4.2	127000	3.26	na	na
Sodium	WOD-SU-111-0507	1060		Iron	163601	729.3	127000	566.14	J K	na
Thallium	WOD-SU-111-0507	3.5		Iron	163601	9.6	127000	7.45	J K	na
Vanadium	WOD-SU-111-0507	92		Iron	163601	5.8	127000	4.50	na	na
Zinc	WOD-SU-111-0507	3550		Iron	163601	-47.6	127000	-36.95	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-111-0507	18.3		Calcium	471040	-20.5	55400	-2.41	J L	na
Arsenic	WOD-SU-111-0507	11.9		Calcium	471040	-8.1	55400	-0.95	na	na
Barium	WOD-SU-111-0507	983		Calcium	471040	-8	55400	-0.94	na	na
Cadmium	WOD-SU-111-0507	23.4		Calcium	471040	-4.9	55400	-0.58	na	na
Chromium	WOD-SU-111-0507	78.6		Calcium	471040	-1.3	55400	-0.15	na	na
Cobalt	WOD-SU-111-0507	6.3		Calcium	471040	3.4	55400	0.40	na	na
Copper	WOD-SU-111-0507	3040		Calcium	471040	11.7	55400	1.38	na	na
Lead	WOD-SU-111-0507	1100		Calcium	471040	-8.7	55400	-1.02	na	na
Manganese	WOD-SU-111-0507	1100		Calcium	471040	-11.6	55400	-1.36	na	na
Nickel	WOD-SU-111-0507	56.8		Calcium	471040	-2.6	55400	-0.31	na	na
Potassium	WOD-SU-111-0507	1830		Calcium	471040	441.4	55400	51.91	na	na
Selenium	WOD-SU-111-0507	0.5	U	Calcium	471040	-139	55400	-16.35	na	U J L
Silver	WOD-SU-111-0507	389		Calcium	471040	4.2	55400	0.49	na	na
Sodium	WOD-SU-111-0507	1060		Calcium	471040	729.3	55400	85.77	na	na
Thallium	WOD-SU-111-0507	3.5		Calcium	471040	9.6	55400	1.13	J K	na
Vanadium	WOD-SU-111-0507	92		Calcium	471040	5.8	55400	0.68	na	na
Zinc	WOD-SU-111-0507	3550		Calcium	471040	-47.6	55400	-5.60	na	na

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SV1130406S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	17.0553		0.1415	U	21.46	79.5		P
Arsenic	75-125	20.0545		0.4556	B	21.46	91.3		P
Barium	75-125	454.5973		4.1340	B	429.16	105.0		P
Beryllium	75-125	10.1556		0.0236	U	10.71	94.8		P
Cadmium	75-125	9.8383		0.0330	U	10.71	91.9		P
Calcium									NR
Chromium	75-125	41.7971		0.7780	B	42.92	95.6		P
Cobalt	75-125	105.4695		0.2159	B	107.06	98.3		P
Copper	75-125	51.3617		0.3050	B	53.29	95.8		P
Iron									NR
Lead	75-125	21.7674		0.7752		21.46	97.8		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.5999		0.0176	U	0.71	84.5		CV
Nickel	75-125	104.6785		0.3048	B	107.06	97.5		P
Potassium									NR
Selenium	75-125	19.8501		0.4244	U	21.46	92.5		P
Silver	75-125	54.1395		0.0943	U	53.29	101.6		P
Sodium									NR
Thallium	75-125	20.4905		0.1415	U	21.46	95.5		P
Vanadium	75-125	103.3240		1.1464	B	107.06	95.4		P
Zinc	75-125	110.0503		0.7475	B	107.06	102.1		P
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

SV1130406D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 93.0 % Solids for Duplicate: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		612.5913		538.2200		12.9		P
Antimony		0.1415	U	0.1415	U			P
Arsenic		0.4556	B	0.3705	B	20.6		P
Barium		4.1340	B	3.3016	B	22.4		P
Beryllium		0.0236	U	0.0236	U			P
Cadmium		0.0330	U	0.0330	U			P
Calcium		11.3186	U	11.3186	U			P
Chromium		0.7780	B	0.7017	B	10.3		P
Cobalt		0.2159	B	0.1677	B	25.1		P
Copper		0.3050	B	0.3248	B	6.3		P
Iron		671.9359		588.4462		13.2		P
Lead	0.4716	0.7752		0.6085		24.1		P
Magnesium	23.5805	42.7766		38.8273		9.7		P
Manganese	2.3580	4.9521		3.7405		27.9		P
Mercury		0.0176	U	0.0176	U			CV
Nickel		0.3048	B	0.2817	B	7.9		P
Potassium	47.1609	59.5211		53.3076		11.0		P
Selenium		0.4244	U	0.4244	U			P
Silver		0.0943	U	0.0943	U			P
Sodium		3.9144	U	3.9144	U			P
Thallium		0.1415	U	0.1415	U			P
Vanadium		1.1464	B	1.0639	B	7.5		P
Zinc		0.7475	B	0.6888	B	8.2		P
Cyanide								NR

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LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Solid LCS Source: ERA LOT#802115

Aqueous LCS Source: HIGH_PURITY

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C Limits		%R
Aluminum	9100.0	8791.7	96.6	910.0	847.3	682.5	1137.5	93.1
Antimony	455.0	470.5	103.4	45.5	42.2	34.1	56.9	92.7
Arsenic	455.0	467.5	102.7	45.5	43.0	39.1	51.9	94.5
Barium	9100.0	9157.8	100.6	910.0	925.1	859.0	1010.1	101.7
Beryllium	227.0	226.7	99.9	22.7	22.2	17.0	28.4	97.8
Cadmium	227.0	231.3	101.9	22.7	21.5	20.2	25.2	94.7
Calcium	22700.0	21592.2	95.1	2270.0	2142.0	1702.5	2837.5	94.4
Chromium	910.0	895.8	98.4	91.0	88.2	84.4	97.4	96.9
Cobalt	2270.0	2275.7	100.3	227.0	222.6	170.2	283.8	98.1
Copper	1130.0	1123.7	99.4	113.0	109.3	84.8	141.2	96.7
Iron	4550.0	4548.8	100.0	455.0	447.2	341.2	568.8	98.3
Lead	455.0	467.7	102.8	45.5	44.2	39.8	51.9	97.1
Magnesium	22700.0	22295.3	98.2	2270.0	2181.8	1702.5	2837.5	96.1
Manganese	2270.0	2281.1	100.5	227.0	228.0	170.2	283.8	100.4
Mercury	4.6	4.1	89.1	0.8	0.7	0.6	1.0	87.5
Nickel	2270.0	2266.7	99.9	227.0	220.6	170.2	283.8	97.2
Potassium	22700.0	22290.5	98.2	2270.0	2195.4	1702.5	2837.5	96.7
Selenium	455.0	458.1	100.7	45.5	40.9	37.3	46.9	89.9
Silver	1130.0	1146.1	101.4	113.0	112.6	98.1	124.3	99.6
Sodium	22700.0	23385.9	103.0	2270.0	2291.7	1702.5	2837.5	101.0
Thallium	455.0	451.6	99.3	45.5	42.9	34.1	56.9	94.3
Vanadium	2270.0	2226.0	98.1	227.0	218.1	170.2	283.8	96.1
Zinc	2270.0	2288.3	100.8	227.0	224.7	170.2	283.8	99.0
Cyanide								

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: OPTIMA 1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium	589.59		1000	83.0	P
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/13/03		50
PBW	02/13/03		50
RB-021103	02/13/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/14/03		50
PBW	02/14/03		50
RB-021103	02/14/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/13/03	0.50	50
PBS	02/13/03	1.00	50
SV1011617	02/13/03	1.18	50
SV1050507	02/13/03	1.04	50
SV1090608	02/13/03	1.10	50
SV1100204	02/13/03	1.09	50
SV1110507	02/13/03	1.11	50
SV1120204	02/13/03	1.14	50
SV1130406	02/13/03	1.14	50
SV1130406D	02/13/03	1.14	50
SV1130406S	02/13/03	1.14	50
SV1140406	02/13/03	1.24	50
SVDUP05	02/13/03	1.05	50
WOD-SS-105	02/13/03	1.07	50
WOD-SS-109	02/13/03	1.20	50
WOD-SS-110	02/13/03	1.06	50
WOD-SS-111	02/13/03	1.03	50
WOD-SS-112	02/13/03	1.08	50
WOD-SS-113	02/13/03	1.02	50
WOD-SS-114	02/13/03	1.05	50
WOD-SS-114	02/13/03	1.14	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/13/03		100
PBW	02/13/03		100
RB-021103	02/13/03		136
RB-021103D	02/13/03		134
RB-021103S	02/13/03		136

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/14/03	0.60	100
PBS	02/14/03	0.60	100
SV1011617	02/14/03	0.62	100
SV1050507	02/14/03	0.61	100
SV1090608	02/14/03	0.68	100
SV1100204	02/14/03	0.68	100
SV1110507	02/14/03	0.69	100
SV1120204	02/14/03	0.62	100
SV1130406	02/14/03	0.61	100
SV1130406D	02/14/03	0.61	100
SV1130406S	02/14/03	0.61	100
SV1140406	02/14/03	0.60	100
SVDUP05	02/14/03	0.68	100
WOD-SS-105	02/14/03	0.65	100
WOD-SS-109	02/14/03	0.60	100
WOD-SS-110	02/14/03	0.70	100
WOD-SS-111	02/14/03	0.74	100
WOD-SS-112	02/14/03	0.63	100
WOD-SS-113	02/14/03	0.75	100
WOD-SS-114	02/14/03	0.62	100

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/13/03 End Date: 02/13/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	SA	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1557		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1601		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1605		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1609		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1614																										
ZZZZZZ	1.00	1618																										
ZZZZZZ	1.00	1620																										
ZZZZZZ	1.00	1623																										
ZZZZZZ	1.00	1628																										
ZZZZZZ	1.00	1633																										
ICV	1.00	1636		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1641		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1646		X					X					X		X												
ICSAB	1.00	1650		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1654		X	X		X	X		X	X	X	X	X		X	X		X			X			X	X	
LCSW	1.00	1658		X	X		X	X		X	X	X	X	X		X	X		X			X			X	X	
ZZZZZZ	1.00	1702																										
ZZZZZZ	1.00	1706																										
ZZZZZZ	1.00	1710																										
CCV	1.00	1714		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1718		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1722																										
ZZZZZZ	1.00	1726																										
ZZZZZZ	1.00	1731																										
ZZZZZZ	1.00	1735																										
ZZZZZZ	1.00	1739																										
RB-021103	1.00	1743		X	X		X	X		X	X	X	X	X		X	X		X			X			X	X	
ZZZZZZ	1.00	1747																										
ZZZZZZ	1.00	1751																										
CCV	1.00	1755		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1800		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBS	1.00	1804		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/13/03 End Date: 02/13/03

EPA Sample No.	D/F	Time	%R	Analytes
LCSS	1.00	1808		X X X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION

Contract:

Lab Code: MITKEM Case No.:

SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A

Method: P

Start Date: 02/13/03

End Date: 02/13/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
ICSA	1.00	2020		X						X				X		X														
ICSAB	1.00	2024		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X				
CCV	1.00	2028		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X				
CCB	1.00	2032		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION

Contract:

Lab Code: MITKEM Case No.:

SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A

Method: P

Start Date: 02/14/03

End Date: 02/14/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				ALL	SBS	ABA	BEE	CDA	CAR	CRO	CUE	FEB	PBG	MGN	HGI	NIK	SE	AGA	NAL	TL	V	ZN	CN							
S0	1.00	0844																												
S1	1.00	0847														X														
S2	1.00	0849														X														
S3	1.00	0851														X														
ZZZZZZ	1.00	0854														X														
ZZZZZZ	1.00	0856																												
ZZZZZZ	1.00	0858																												
ZZZZZZ	1.00	0901																												
ICV	1.00	0907																												
ICB	1.00	0909														X														
ICSA	1.00	0911														X														
ICSAB	1.00	0913																												
PBW	1.00	0916														X														
LCSW	1.00	0918														X														
RB-021103	1.00	0920														X														
PBS	1.00	0923														X														
LCSS	1.00	0925														X														
ZZZZZZ	1.00	0927														X														
CCV	1.00	0930																												
CCB	1.00	0932														X														
ZZZZZZ	1.00	0934														X														
WOD-SS-109	1.00	0936																												
SV1090608	1.00	0939														X														
WOD-SS-105	1.00	0941														X														
SV1050507	1.00	0943														X														
SV1011617	1.00	0945														X														
SVDUP05	1.00	0948														X														
SV1100204	1.00	0950														X														
WOD-SS-110	1.00	0952														X														
CCV	1.00	0955														X														
CCB	1.00	0957														X														
WOD-SS-111	1.00	0959														X														

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A
Method: P

Start Date: 02/14/03
End Date: 02/14/03

EPA Sample No.	D/F	Time	% R	Analytes: ALBS ASAE BBEC CDAR CCOU CFEB PBGM MNGH NGIK SEAG NATL VZN CN
SV1110507	1.00	1002		
WOD-SS-112	1.00	1004		X
SV1120204	1.00	1006		X
WOD-SS-113	1.00	1009		X
SV1130406	1.00	1011		X
CCV	1.00	1013		X
CCB	1.00	1016		X
SV1130406D	1.00	1018		X
WOD-SS-114	1.00	1020		X
SV1140406	1.00	1022		X
~~SV1140406L~~	1.00	1025		X
ICSA	1.00	1027		X
ICSAB	1.00	1029		
CCV	1.00	1032		X
CCB	1.00	1034		X

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14
ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA 2A
Method: P

Start Date: 02/14/03
End Date: 02/14/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				ALL	SBS	ASA	BAE	BED	CDA	CAR	COU	CUE	FEB	PBG	MGN	MNG	IGI	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0847		X					X			X													X			
S1	1.00	0851		X					X			X													X			
S2	1.00	0853		X					X			X													X			
S3	1.00	0856		X					X			X													X			
ZZZZZZ	1.00	0903																										
ZZZZZZ	1.00	0905																										
ICV	1.00	0909		X					X			X																
ICB	1.00	0913		X					X			X													X			
ICSA	1.00	0918		X					X			X													X			
ICSAB	1.00	0920		X					X			X																
ZZZZZZ	1.00	0923																							X			
ZZZZZZ	1.00	0925																										
ZZZZZZ	1.00	0928																										
SVI110507	10.00	0931		X					X			X																
ICSA	1.00	0933		X					X			X													X			
ICSAB	1.00	0936		X					X			X																
CCV	1.00	0938		X					X			X													X			
CCB	1.00	0942		X					X			X													X			

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A
Method: P

Start Date: 02/14/03
End Date: 02/14/03

EPA Sample No.	D/F	Time	%R	Analytes: ALS BS AS AE BD CA CR CO CU FE PB MG MN HG NI K SE AG AL TL V ZN CN
S0	1.00	1102		
S1	1.00	1105		X
S2	1.00	1107		X
S3	1.00	1109		X
ZZZZZZ	1.00	1111		X
ZZZZZZ	1.00	1114		
ICV	1.00	1116		
ICB	1.00	1118		X
ICSA	1.00	1121		X
ICSAB	1.00	1123		
PBW	1.00	1125		X
LCSW	1.00	1128		X
RB-021103	1.00	1130		X
PBS	1.00	1132		X
LCSS	1.00	1135		X
CCV	1.00	1137		X
CCB	1.00	1139		X
ZZZZZZ	1.00	1142		X
ZZZZZZ	1.00	1144		
ZZZZZZ	1.00	1146		
ZZZZZZ	1.00	1148		
ICSA	1.00	1151		
ICSAB	1.00	1153		
CCV	1.00	1155		X
CCB	1.00	1158		X
WOD-SS-109	1.00	1200		X
SV1090608	1.00	1202		X
WOD-SS-105	1.00	1204		X
SV1050507	1.00	1207		X
SV1011617	1.00	1209		X
SVDUP05	1.00	1211		X
SV1100204	1.00	1214		X
				X

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A
Method: P

Start Date: 02/14/03
End Date: 02/14/03

EPA Sample No.	D/F	Time	% R	Analytes: ALBS ABSA BBEA CCDA CCRA CCOU CFEB PBGN MMGN HGI NK SE AG NAL TL V ZN CN
CCV	1.00	1216		
CCB	1.00	1218		X
WOD-SS-110	1.00	1220		X
WOD-SS-111	1.00	1223		X
SV1110507	1.00	1225		X
WOD-SS-112	1.00	1227		X
SV1120204	1.00	1230		X
WOD-SS-113	1.00	1232		X
CCV	1.00	1234		X
CCB	1.00	1237		X
SV1130406	1.00	1239		X
SV1130406D	1.00	1241		X
WOD-SS-114	1.00	1244		X
SV1140406	1.00	1246		X
~~SV1140406L~~	1.00	1248		X
ICSA RM 2/12/03	1.00	1250		~~X~~ RM 2/12/03
ICSAB	1.00	1253		
CCV	1.00	1255		X
CCB	1.00	1257		X
				X

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION

Contract:

Lab Code: MITKEM Case No.:

SAS No.: SDG No.: B0257

Instrument ID Number: OPTIMA_1A

Method: P

Start Date: 02/14/03

End Date: 02/14/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				ALB	BSA	BAS	BED	CDA	CAR	COU	CUE	FEB	PBG	MGN	MNG	HGI	NIK	SEG	AGA	NAL	TL	VNN	ZCN	CN				
S0	1.00	1604			X		X					X						X			X							
S1	1.00	1608			X		X					X						X			X							
S2	1.00	1612			X		X					X						X			X							
S3	1.00	1616			X		X					X						X			X							
ZZZZZZ	1.00	1620																										
ZZZZZZ	1.00	1625																										
ICV	1.00	1629			X		X					X						X			X							
ICB	1.00	1633			X		X					X						X			X							
ICSA	1.00	1637																										
ICSAB	1.00	1641			X		X					X						X			X							
ZZZZZZ	1.00	1646																										
PBW	1.00	1650			X		X					X						X			X							
LCSW	1.00	1654			X		X					X						X			X							
ZZZZZZ	1.00	1658																										
ZZZZZZ	1.00	1702																										
ZZZZZZ	1.00	1706																										
ZZZZZZ	1.00	1710																										
CCV	1.00	1714			X		X					X						X			X							
CCB	1.00	1718			X		X					X						X			X							
RB-021103	1.00	1722			X		X					X						X			X							
ZZZZZZ	1.00	1726																										
ZZZZZZ	1.00	1730																										
ZZZZZZ	1.00	1734																										
ZZZZZZ	1.00	1739																										
ZZZZZZ	1.00	1743																										
ICSA	1.00	1747																										
ICSAB	1.00	1751			X		X					X						X			X							
CCV	1.00	1755			X		X					X						X			X							
CCB	1.00	1759			X		X					X						X			X							

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0257

Instrument ID Number: COMM_FIMS
Method: CV

Start Date: 02/14/03
End Date: 02/14/03

EPA Sample No.	D/F	Time	% R	Analytes: ALL	ASB	SAE	BED	CAR	CCO	CUE	FEB	PBG	MGN	MNG	HGI	NK	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1041												X									
S0.2	1.00	1043												X									
S1	1.00	1044												X									
S2	1.00	1045												X									
S5	1.00	1047												X									
S10	1.00	1048												X									
ICV	1.00	1049												X									
ICB	1.00	1051												X									
ZZZZZZ	1.00	1052												X									
LCSW	1.00	1053												X									
ZZZZZZ	1.00	1055												X									
ZZZZZZ	1.00	1056												X									
ZZZZZZ	1.00	1057												X									
PBW	1.00	1058												X									
RB-021103	1.00	1100												X									
~~RB-021103D~~	1.00	1101												X									
CCV	1.00	1102												~~X~~ RM 2/28/03									
CCB	1.00	1104												X									
~~RB-021103S~~	1.00	1105												X									
PBS	1.00	1106												~~X~~ RM 2/28/03									
LCSS	1.00	1108												X									
ZZZZZZ	1.00	1109												X									
ZZZZZZ	1.00	1110																					
ZZZZZZ	1.00	1112																					
ZZZZZZ	1.00	1113																					
WOD-SS-109	1.00	1114																					
CCV	1.00	1116												X									
CCB	1.00	1117												X									
SV1090608	1.00	1118												X									
B0257-04A	1.00	1120												X									
SV1050507	1.00	1121												X									
SV1011617	1.00	1122												X									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION

Contract:

Lab Code: MITKEM Case No.:

SAS No.: SDG No.: B0257

Instrument ID Number: COMM_FIMS

Method: CV

Start Date: 02/14/03

End Date: 02/14/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				A L	S B	A S	B A	B E	C D	C A	C R	C O	C U	F E	P B	M G	M N	H G	N I	K	S E	A G	N A	T L	V	Z N	C N
SVDUP05	1.00	1124																X												
SV1100204	1.00	1125																X												
WOD-SS-110	1.00	1126																X												
WOD-SS-111	1.00	1128																X												
CCV	1.00	1129																X												
CCB	1.00	1130																X												
SV1110507	1.00	1132																X												
WOD-SS-112	1.00	1133																X												
SV1120204	1.00	1134																X												
WOD-SS-113	1.00	1136																X												
SV1130406	1.00	1137																X												
SV1130406D	1.00	1138																X												
ZZZZZZ	1.00	1140																X												
WOD-SS-114	1.00	1141																X												
CCV	1.00	1142																X												
CCB	1.00	1144																X												
ZZZZZZ	1.00	1149																X												
ZZZZZZ	1.00	1150																X												
SV1140406	1.00	1151																X												
ZZZZZZ	1.00	1153																X												
SV1130406S	1.00	1154																X												
ZZZZZZ	1.00	1155																X												
ZZZZZZ	1.00	1157																X												
CCV	1.00	1158																X												
CCB	1.00	1159																X												

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Mitkem Corporation

Date: *19-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0257
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6168**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **2/28/03**		Run ID: **TOC1_030228A**	
Client ID: **MB-6168**	Batch ID: **6168**	Units: **mg/L**			Analysis Date: **2/28/03**		SeqNo: **86778**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6168**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **2/28/03**		Run ID: **TOC1_030228A**	
Client ID: **LCS-6168**	Batch ID: **6168**	Units: **mg/L**			Analysis Date: **2/28/03**		SeqNo: **86779**	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	48.7	6.0	54.1	0	90	80	120	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

FIELD DUPLICATE PRECISION

ANALYTE	WOD-SS-DUP05	WOD-SS-109	RPD	DIFFERENCE
Aluminum	1500	1640	8.92	140
Antimony	0.16U	0.14U	#VALUE!	#VALUE!
Arsenic	1.3	1.4	7.41	0.1
Barium	6.4	7.2	11.76	0.8
Beryllium	0.05	0.06	18.18	0.01
Cadmium	0.04U	0.03U	#VALUE!	#VALUE!
Calcium	127	137	7.58	10
Chromium	2.3	2.8	19.61	0.5
Cobalt	0.42	0.48	13.33	0.06
Copper	0.86	1	15.05	0.14
Iron	1670	2060	20.91	390
Lead	3.2	3.3	3.08	0.1
Magnesium	113	148	26.82	35
Manganese	23.4	25.8	9.76	2.4
Mercury	0.02U	0.02U	#VALUE!	#VALUE!
Nickel	0.66	0.81	20.41	0.15
Potassium	124B	168	#VALUE!	#VALUE!
Selenium	0.48U	0.42U	#VALUE!	#VALUE!
Silver	0.21	0.19	10.00	0.02
Sodium	6.9B	13.2B	#VALUE!	#VALUE!
Thallium	0.16U	0.14U	#VALUE!	#VALUE!
Vanadium	4.3	4.6	6.74	0.3
Zinc	3.6	4.6	24.39	1
pH	6.3	6.1	3.23	0.2

Analyst:
Sample Wt:
Dilution:

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:04:13 AM,

Mean Data: B0257-10A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-378.1	0.0029	mg/L	0.00012	0.0029	mg/L	0.00012	4.28%
Al 308.215	562935.5	18.169	mg/L	0.1354	18.169	mg/L	0.1354	0.75%
As 188.979	37.0	0.0202	mg/L	0.00083	0.0202	mg/L	0.00083	4.08%
Ba 233.527	4656.4	0.1016	mg/L	0.00033	0.1016	mg/L	0.00033	0.32%
Be 313.107	202.3	0.0010	mg/L	0.00002	0.0010	mg/L	0.00002	1.98%
Co 228.616	185.1	0.0115	mg/L	0.00010	0.0115	mg/L	0.00010	0.85%
Cr 267.716	1598.6	0.0294	mg/L	0.00006	0.0294	mg/L	0.00006	0.19%
Cu 324.752	4669.2	0.0239	mg/L	0.00073	0.0239	mg/L	0.00073	3.05%
Fe 273.955	1033814.3	29.920	mg/L	0.1429	29.920	mg/L	0.1429	0.48%
Mg 279.077	22996.7	1.4085	mg/L	0.00933	1.4085	mg/L	0.00933	0.66%
Mn 257.610	199222.3	0.4743	mg/L	0.00158	0.4743	mg/L	0.00158	0.33%
Ni 231.604	-47.2	0.0103	mg/L	0.00049	0.0103	mg/L	0.00049	4.75%
Pb 220.353	113.2	0.0472	mg/L	0.00078	0.0472	mg/L	0.00078	1.64%
Sb 206.836	1.4	-0.0001	mg/L	0.00156	-0.0001	mg/L	0.00156	>999.9%
Se 196.026	-6.0	-0.0034	mg/L	0.00157	-0.0034	mg/L	0.00157	46.80%
Tl 190.801	-12.9	-0.0028	mg/L	0.00110	-0.0028	mg/L	0.00110	38.61%
V 292.402	4777.9	0.0497	mg/L	0.00038	0.0497	mg/L	0.00038	0.76%
Zn 206.200	1455.5	0.1252	mg/L	0.00006	0.1252	mg/L	0.00006	0.05%
Na 330.237	675.0	0.5858	mg/L	0.00500	0.5858	mg/L	0.00500	0.85%
Cd 226.502	47.5	-0.0007	mg/L	0.00021	-0.0007	mg/L	0.00021	30.49%
Ti 334.940	388495.0	0.5761	mg/L	0.00752	0.5761	mg/L	0.00752	1.31%
Ca 227.546	100.7	0.8607	mg/L	0.06926	0.8607	mg/L	0.06926	8.05%

Sequence No.: 53
Sample ID: B0257-11A,5627
Analyst:
Sample Wt: WOD-SU-111-0507
Dilution: EmF 5/2/03

Autosampler Location: 43
Date Collected: 2/13/03 7:30:38 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:04:13 AM,

Mean Data: B0257-11A,5627

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	1119471.2	6.9988	mg/L	0.01555	6.9988	mg/L	0.01555	0.22%
•Al 308.215	22588028.3	728.93	mg/L	1.159	728.93	mg/L	1.159	0.16%
As 188.979	394.8	0.2143	mg/L	0.00602	0.2143	mg/L	0.00602	2.81%
Ba 233.527	816098.4	17.685	mg/L	0.0209	17.685	mg/L	0.0209	0.12%
Be 313.107	-14775.1	0.0021	mg/L	0.00013	0.0021	mg/L	0.00013	6.07%
Co 228.616	1606.4	0.1129	mg/L	0.00175	0.1129	mg/L	0.00175	1.55%
Cr 267.716	77249.6	1.4138	mg/L	0.00379	1.4138	mg/L	0.00379	0.27%
Cu 324.752	11897363.9	54.641	mg/L	0.1385	54.641	mg/L	0.1385	0.25%
•Fe 273.955	43114135.0	1247.8	mg/L	1.45	1247.8	mg/L	1.45	0.12%
Mg 279.077	1019309.3	62.457	mg/L	0.1118	62.457	mg/L	0.1118	0.18%
Mn 257.610	8346215.2	19.865	mg/L	0.0258	19.865	mg/L	0.0258	0.13%
Ni 231.604	4333.5	1.0218	mg/L	0.00113	1.0218	mg/L	0.00113	0.11%
Pb 220.353	37201.0	19.763	mg/L	0.0780	19.763	mg/L	0.0780	0.39%
Sb 206.836	361.9	0.3293	mg/L	0.00016	0.3293	mg/L	0.00016	0.05%
Se 196.026	-262.4	-0.1510	mg/L	0.05352	-0.1510	mg/L	0.05352	35.45%
Tl 190.801	-177.5	0.0625	mg/L	0.00581	0.0625	mg/L	0.00581	9.30%
V 292.402	157816.7	1.6548	mg/L	0.00375	1.6548	mg/L	0.00375	0.23%
•Zn 206.200	509995.0	44.053	mg/L	0.0421	44.053	mg/L	0.0421	0.10%
Na 330.237	154686.9	122.68	mg/L	0.361	122.68	mg/L	0.361	0.29%
Cd 226.502	7417.4	0.4202	mg/L	0.00058	0.4202	mg/L	0.00058	0.14%
Ti 334.940	4753304.1	7.0518	mg/L	0.00095	7.0518	mg/L	0.00095	0.01%
•Ca 227.546	87899.6	884.11	mg/L	4.217	884.11	mg/L	4.217	0.48%

Sequence No.: 54
Sample ID: B0257-12A,5627
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 2/13/03 7:33:39 PM

Sample Prep Volume:
Data Type: Reprocessed on 2/14/03 9:04:14 AM,

Pb = 19.763 mg/L x 1L/1000ml x 50ml/1.1g x 1000g/1kg x 1/0.81 = 1099 mg/kg

* Reported Value = 1100 mg/kg.

001457

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 28, 2003**

FROM: **SETH C. STAFFEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOA/SVOA/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG: B0258

SAMPLES: 3/Aqueous

FB-021203	RB-021203	TB-021203*

13/Solid

WOD-SS-115	WOD-SS-116	WOD-SS-117
WOD-SS-118	WOD-SS-119	WOD-SS-120
WOD-SU-115-0305	WOD-SU-116-0204	WOD-SU-117-0102
WOD-SU-118-0406	WOD-SU-119-0507	WOD-SU-120-0406
WOD-SU-DUP06		

OVERVIEW

The sample set for CTO 848, SDG B0258, NASA Wallops Island consists of thirteen (13) solid environmental samples, one (1) rinsate blank, one (1) field blank, and one (1) trip blank. All samples were analyzed for Target Compound List (TCL) volatile organic compounds, TCL semivolatile organic compounds and TCL PCBs, except the trip blank (*) was only analyzed for TCL volatile organic compounds. One field duplicate pair was included in the SDG: WOD-SU-118-0406 and WOD-SU-DUP06.

The samples were collected by TetraTech NUS on February 12th, 2003 and were analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed with the exception of those results that were rejected. The findings offered in this report are based upon a general review of all available data including: data completeness, system performance and tuning, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, internal standard recoveries, blank spike results, field duplicate results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- The volatile fraction internal standard area of 1,4-dichlorobenzene-d4 fell below the -50% quality control limit (and < 10%) for sample WOD-SS-117. Nondetected results associated with the internal standard were rejected, UR, in the aforementioned sample.

Minor Problems

- The aqueous volatile initial calibration on 2/20/03 contained a percent relative standard deviation (%RSD) that exceeded the 30% quality control limit for acetone. The positive results for acetone in the aqueous samples were qualified as estimated, J. The direction of bias cannot be determined.

- The aqueous volatile continuing calibration on 2/28/03 at 0951 contained a percent difference (%D) that exceeded the 25% quality control limit for acetone. Positive results were qualified as estimated, J, in the aqueous samples. The direction of bias cannot be determined.

- The volatile surrogate percent recoveries (%R) of dibromofluoromethane, 1,2-dichloroethane-d4, and toluene-d8 exceeded the upper quality control limit for sample WOD-SS-116. The re-analysis yielded an exceedance of 1,2-dichloroethane-d4 only. Therefore, the re-analysis was used for data validation purposes. Positive results were qualified as estimated, J, in sample WOD-SS-116.

- The volatile surrogate percent recoveries (%R) of 1,2-dichloroethane-d4 and toluene-d8 exceeded the upper quality control limit for sample WOD-SS-117. The re-analysis yielded all three surrogate %Rs exceeding upper quality control limits. Therefore, the original analysis was used for data validation purposes. Positive results were qualified as estimated, J, in sample WOD-SS-117.

- The volatile surrogate percent recovery (%R) of 1,2-dichloroethane-d4 exceeded the upper quality control limit for sample WOD-SS-120. The re-analysis yielded similar noncompliant results. Therefore, the original analysis was used for data validation purposes. Positive results were qualified as estimated, J, in sample WOD-SS-120.

- The volatile fraction internal standard recoveries of 1,4-dichlorobenzene-d4 and chlorobenzene-d5 fell below the lower quality control limit in sample WOD-SS-116. The re-analysis yielded similar noncompliant results. Therefore, the re-analysis was used for data validation purposes based on surrogate noncompliances. Only nondetected results were associated with the noncompliant internal standards and these results were qualified as estimated, UJ, in sample WOD-SS-116.

- The volatile fraction internal standard recoveries of fluorobenzene, chlorobenzene-d5, and 1,4-dichlorobenzene-d4 fell below the lower quality control limit for sample WOD-SS-117. The re-analysis yielded similar noncompliant results. The original analysis was used for data validation purposes based on surrogate noncompliant results. The internal standard 1,4-dichlorobenzene-d4 had a recovery less than 10% of the associated continuing calibration. The nondetected results associated with 1,4-dichlorobenzene-d4 have been rejected UR for sample WOD-SS-117. The remaining nondetected results for sample WOD-SS-117 were qualified as estimated, UJ.

- The volatile fraction internal standard recoveries of chlorobenzene-d5 and 1,4-dichlorobenzene-d4 fell below the lower quality control limit for sample WOD-SS-120. The re-analysis yielded similar noncompliant results. The original analysis was used for data validation purposes based on surrogate noncompliant results. Nondetected and positive results associated with the internal standards were qualified as estimated, J, and, UJ, in the aforementioned sample.

- The volatile fraction internal standard recovery 1,4-dichlorobenzene-d4 fell below the lower quality control limit for sample WOD-SU-115-0305. There was no re-analysis. Therefore, the original analysis was used for data validation purposes based on surrogate noncompliant results. Nondetected and positive results associated with the 1,4-dichlorobenzene-d4 were qualified as estimated, J, and, UJ, in the aforementioned sample.

- The following compounds were detected in the laboratory method blanks or field quality control blanks (*):

Compound	Maximum Concentration	Blank Action Level
Acetone	4 µg/L	40 µg/Kg
Methylene chloride*	3 µg/L	30 µg/Kg
2-Hexanone	3 µg/Kg	15 µg/Kg

  Sample aliquot, percent solids, and dilution factor were taken into consideration when applying the blank action limit. Positive results for acetone, methylene chloride, and 2-hexanone below the blank action level were qualified as, B. Field quality control blanks were not qualified based on contamination in other field quality control blanks.

- The semivolatile initial calibration on 3/12/03 contained a %RSD that exceeded the 30% (and > 50%) quality control limit for 3-nitroaniline. Positive and nondetected results for 3-nitroaniline were qualified as estimated, J, and, UJ, respectively, in the associated samples. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/14/03 at 0012 contained a %D that exceeded the 25% (and > 50%) quality control limit for benzaldehyde. Positive and nondetected results for benzaldehyde were qualified as estimated, J, and, UJ, respectively, in the associated sample. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/15/03 at 0031 contained a %D that exceeded the 25% (and > 50%) quality control limit for benzaldehyde. The nondetected result for benzaldehyde was qualified as estimated, J, in sample WOD-SS-120. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/15/03 at 1632 contained %Ds that exceeded the 25% (and > 50%) quality control limit for 4-nitroaniline, 3-nitroaniline, hexachlorocyclopentadiene, and benzaldehyde. The nondetected results for the aforementioned compounds were qualified as estimated, J, and, UJ, respectively, in sample WOD-SU-115-0305. The direction of bias cannot be determined.

- The semivolatile matrix spike and matrix spike duplicate %Rs fell below the lower quality control limit for 2-nitroaniline, 2-nitrophenol, dibenzofuran, phenanthrene, di-n-octyl-phthalate, and benzo(a)pyrene. The positive and nondetected results for the aforementioned compounds were qualified as estimated, J, and, UJ, respectively, in the unspiked sample, WOD-SU-120-0406.

- Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit. The direction of bias cannot be determined.

Notes

The aqueous volatile continuing calibration on 2/28/03 at 0951 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for dichlorodifluoromethane and 1,2-dibromo-3-chloropropane. Therefore, nondetected sample results were not qualified on this basis.

The linear calibration range of the instrument was exceeded for acetone in sample WOD-SS-120. The result from the re-analyses was transposed over and used for data validation purposes.

The semivolatile initial calibration on 3/12/03 contained %RSDs that exceeded the 30% quality control limit, but did not exceed 50%, for 4-chloroaniline, carbazole, and benzaldehyde. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile initial calibration on 3/14/03 contained %RSDs that exceeded the 30% quality control limit, but did not exceed 50%, for 4-chloroaniline, carbazole, and atrazine. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/13/03 at 0935 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 4-chloroaniline, carbazole, atrazine, and benzaldehyde. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/15/03 at 0031 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 4-chloroaniline, hexachlorocyclopentadiene, and atrazine. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/15/03 at 1632 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 2,2-'oxybis(1-chloropropane), 4-chloroaniline, carbazole, 3,3'-dichlorobenzidine, and atrazine. Therefore, nondetected sample results were not qualified on this basis.

The semivolatile fraction matrix spike duplicate %Rs fell below the lower quality control limit for several compounds. No qualification action was warranted.

The semivolatile fraction laboratory control sample %R fell below the lower quality control limit for dibenzofuran and the %R exceeded the upper quality control limit for carbazole. No qualification action was warranted.

The semivolatile fraction laboratory control sample duplicate %R exceeded the upper quality control limit for 4-nitroaniline. No qualification action was warranted.

The PCBs continuing calibration on 2/25/03 at 2006 contained %Ds that exceeded the 15% for Aroclor-1016 on column RTXCLPPEST 2. No qualification action was warranted since the other column was compliant.

The laboratory truncated the beginning parts of the sample IDs.

The laboratory incorrectly identified several sample IDs by labeling sections of the sample ID as "SV" when it should have been "SU". The sample IDs were corrected in the electronic database.

There were differences between what was reported by the laboratory and what was requested in the statement of work (SOW). No action was taken because the project office was contacted and that they approved the variance from the SOW.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several compounds failed to meet the initial and/or continuing calibration criteria in the volatile, semivolatile, and PCBs fractions. Laboratory method and field blank contamination occurred in the volatile fraction.

Other Factors Affecting Data Quality: Surrogate recoveries quality control limits were not met in the volatile fraction. Internal standard recovery criteria were not met.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", (September 1994) as amended for use within USEPA Region III, and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Seth C. Staffen
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

TENTATIVELY IDENTIFIED COMPOUNDS

Volatile

unknowns
branched Alkane
benzene, 1-ethyl-2-methyl
benzene, 1-ethyl-4-methyl
benzene, 1,2,3-trimethyl
benzene, 1-ethenyl-4-methyl
naphthalene
hexanal
naphthalene, 2-methyl
naphthalene, 1-methyl
cyclotetrasiloxane, Octameth
naphthalene, 2,6-dimethyl
alpha-pinene
camphene
beta-pinene
1,3-cyclohexadiene, 1-methyl
limonene
1,4-cyclohexadiene, 1-methyl
cyclohexane, 1-methyl-4-
1-isopropyl-2-methoxy-4-methyl
alpha-cubebene
cyclohexane, 6-ethenyl-6-meth
alpha-amorphene
naphthalene, 1,2,3,5,6,8A-HE
naphthalene, 1,2,3,4-tetrahy
naphthalene, 1,2,4A,5,6,8A-H

Semivolatile

9H-Fluoren-9-one
Dibenzothiophene
Anthracene, 2-methyl
Unknown
Anthracene, 1-methyl
2-Phenylnaphthalene
9,10-Anthracenedione
cyclo(DEF)phenanthrenon
pyrene, 1-methyl
7H-benz[de}anthracen-7-one
Pheneanthrene, 4-methyl
Perylene
P,P'-DDE
Cyclopentane, 1-ethyl-2-meth
1,3-benzodioxole, 5-(2-prope)
Octadecanoic acid, butyl est
Ergost-7-en-3-ol
Stigmast-4-en-3-one
G-sitosterol
Testosterone
D-friedoolean-14-ene, 3-meth
1-Dodecanol
O,P'-DDE
1,1-dichloro-2,2-bis(p-chloro)
alpha-pinene
naphthalene, 1,2,4,4A,5,6

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	10	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	3		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	7	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	3		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-021203
samp_date	2/12/2003
lab_id	B0258-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-021203
samp_date	2/12/2003
lab_id	B0258-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	15	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04CRERE
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	U	
1,1,2,2-TETRACHLOROETHANE	14	UJ	N
1,1,2-TRICHLOROETHANE	14	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	14	U	
1,1-DICHLOROETHANE	14	U	
1,1-DICHLOROETHENE	14	U	
1,2,4-TRICHLOROBENZENE	14	UJ	N
1,2,4-TRIMETHYLBENZENE	14	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	14	UJ	N
1,2-DIBROMOETHANE	14	U	
1,2-DICHLOROBENZENE	14	UJ	N
1,2-DICHLOROETHANE	14	U	
1,2-DICHLOROPROPANE	14	U	
1,3,5-TRIMETHYLBENZENE	14	UJ	N
1,3-DICHLOROBENZENE	14	UJ	N
1,4-DICHLOROBENZENE	14	UJ	N
2-BUTANONE	14	U	
2-HEXANONE	14	U	
4-METHYL-2-PENTANONE	14	U	
ACETONE	68	B	A
BENZENE	14	U	
BROMODICHLOROMETHANE	14	U	
BROMOFORM	14	UJ	N
BROMOMETHANE	14	U	
CARBON DISULFIDE	14	U	
CARBON TETRACHLORIDE	14	U	
CHLOROBENZENE	14	UJ	N
CHLORODIBROMOMETHANE	14	U	
CHLOROETHANE	14	U	
CHLOROFORM	14	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04CRERE
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	U	
CIS-1,2-DICHLOROETHENE	14	U	
CIS-1,3-DICHLOROPROPENE	14	U	
CYCLOHEXANE	14	U	
DICHLORODIFLUOROMETHANE	14	U	
ETHYLBENZENE	14	UJ	N
ISOPROPYLBENZENE	14	UJ	N
M+P-XYLENES	14	UJ	N
METHYL ACETATE	16	J	R
METHYL CYCLOHEXANE	14	U	
METHYL TERT-BUTYL ETHER	14	U	
METHYLENE CHLORIDE	7	B	B
O-XYLENE	14	UJ	N
STYRENE	14	UJ	N
TETRACHLOROETHENE	14	U	
TOLUENE	14	U	
TOTAL XYLENES	14	UJ	N
TRANS-1,2-DICHLOROETHENE	14	U	
TRANS-1,3-DICHLOROPROPENE	14	U	
TRICHLOROETHENE	14	U	
TRICHLOROFLUOROMETHANE	14	U	
VINYL CHLORIDE	14	U	

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06C
qc_type	NM
units	UG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	23	UJ	N
1,1,2,2-TETRACHLOROETHANE	23	UJ	N
1,1,2-TRICHLOROETHANE	23	UJ	N
1,1,2-TRICHLOROTRIFLUOROETHANE	23	UJ	N
1,1-DICHLOROETHANE	23	UJ	N
1,1-DICHLOROETHENE	23	UJ	N
1,2,4-TRICHLOROBENZENE	23	UR	N
1,2,4-TRIMETHYLBENZENE	23	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	23	UR	N
1,2-DIBROMOETHANE	23	UJ	N
1,2-DICHLOROBENZENE	23	UJ	N
1,2-DICHLOROETHANE	23	UJ	N
1,2-DICHLOROPROPANE	23	UJ	N
1,3,5-TRIMETHYLBENZENE	23	UJ	N
1,3-DICHLOROBENZENE	23	UR	N
1,4-DICHLOROBENZENE	23	UR	N
2-BUTANONE	23	UJ	N
2-HEXANONE	23	UJ	N
4-METHYL-2-PENTANONE	23	UJ	N
ACETONE	230	B	A
BENZENE	23	UJ	N
BROMODICHLOROMETHANE	23	UJ	N
BROMOFORM	23	UJ	N
BROMOMETHANE	23	UJ	N
CARBON DISULFIDE	23	UJ	N
CARBON TETRACHLORIDE	23	UJ	N
CHLOROBENZENE	23	UJ	N
CHLORODIBROMOMETHANE	23	UJ	N
CHLOROETHANE	23	UJ	N
CHLOROFORM	23	UJ	N

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06C
qc_type	NM
units	UG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	23	UJ	N
CIS-1,2-DICHLOROETHENE	23	UJ	N
CIS-1,3-DICHLOROPROPENE	23	UJ	N
CYCLOHEXANE	23	UJ	N
DICHLORODIFLUOROMETHANE	23	UJ	N
ETHYLBENZENE	23	UJ	N
ISOPROPYLBENZENE	23	UJ	N
M+P-XYLENES	23	UJ	N
METHYL ACETATE	95	J	N
METHYL CYCLOHEXANE	23	UJ	N
METHYL TERT-BUTYL ETHER	23	UJ	N
METHYLENE CHLORIDE	5	B	B
O-XYLENE	23	UJ	N
STYRENE	23	UJ	N
TETRACHLOROETHENE	23	UJ	N
TOLUENE	23	UJ	N
TOTAL XYLENES	23	UJ	N
TRANS-1,2-DICHLOROETHENE	23	UJ	N
TRANS-1,3-DICHLOROPROPENE	23	UJ	N
TRICHLOROETHENE	23	UJ	N
TRICHLOROFLUOROMETHANE	23	UJ	N
VINYL CHLORIDE	23	UJ	N

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	52	B	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08C
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	3	J	P
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	6	B	B
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10C
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	41	B	A
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10C
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	4	J	P
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14C
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	17	U	
1,1,2,2-TETRACHLOROETHANE	17	UJ	N
1,1,2-TRICHLOROETHANE	17	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	17	U	
1,1-DICHLOROETHANE	17	U	
1,1-DICHLOROETHENE	17	U	
1,2,4-TRICHLOROBENZENE	17	UJ	N
1,2,4-TRIMETHYLBENZENE	17	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	17	UJ	N
1,2-DIBROMOETHANE	17	U	
1,2-DICHLOROBENZENE	17	UJ	N
1,2-DICHLOROETHANE	17	U	
1,2-DICHLOROPROPANE	17	U	
1,3,5-TRIMETHYLBENZENE	17	UJ	N
1,3-DICHLOROBENZENE	17	UJ	N
1,4-DICHLOROBENZENE	17	UJ	N
2-BUTANONE	17	U	
2-HEXANONE	17	U	
4-METHYL-2-PENTANONE	17	U	
ACETONE	310	B	A
BENZENE	17	U	
BROMODICHLOROMETHANE	17	U	
BROMOFORM	17	U	
BROMOMETHANE	17	U	
CARBON DISULFIDE	17	U	
CARBON TETRACHLORIDE	17	U	
CHLOROBENZENE	17	UJ	N
CHLORODIBROMOMETHANE	17	U	
CHLOROETHANE	17	U	
CHLOROFORM	17	U	

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14C
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	17	U	
CIS-1,2-DICHLOROETHENE	17	U	
CIS-1,3-DICHLOROPROPENE	17	U	
CYCLOHEXANE	17	U	
DICHLORODIFLUOROMETHANE	17	U	
ETHYLBENZENE	17	UJ	N
ISOPROPYLBENZENE	17	UJ	N
M+P-XYLENES	17	UJ	N
METHYL ACETATE	160	J	R
METHYL CYCLOHEXANE	17	U	
METHYL TERT-BUTYL ETHER	17	U	
METHYLENE CHLORIDE	8	B	B
O-XYLENE	17	UJ	N
STYRENE	17	UJ	N
TETRACHLOROETHENE	17	U	
TOLUENE	2	J	PR
TOTAL XYLENES	17	UJ	N
TRANS-1,2-DICHLOROETHENE	17	U	
TRANS-1,3-DICHLOROPROPENE	17	U	
TRICHLOROETHENE	17	U	
TRICHLOROFLUOROMETHANE	17	U	
VINYL CHLORIDE	17	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	9	U	
1,1,2,2-TETRACHLOROETHANE	9	U	
1,1,2-TRICHLOROETHANE	9	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	9	U	
1,1-DICHLOROETHANE	9	U	
1,1-DICHLOROETHENE	9	U	
1,2,4-TRICHLOROBENZENE	9	UJ	N
1,2,4-TRIMETHYLBENZENE	9	U	
1,2-DIBROMO-3-CHLOROPROPANE	9	UJ	N
1,2-DIBROMOETHANE	9	U	
1,2-DICHLOROBENZENE	9	U	
1,2-DICHLOROETHANE	9	U	
1,2-DICHLOROPROPANE	9	U	
1,3,5-TRIMETHYLBENZENE	9	U	
1,3-DICHLOROBENZENE	9	UJ	N
1,4-DICHLOROBENZENE	9	UJ	N
2-BUTANONE	9	U	
2-HEXANONE	9	U	
4-METHYL-2-PENTANONE	9	U	
ACETONE	13	B	A
BENZENE	9	U	
BROMODICHLOROMETHANE	9	U	
BROMOFORM	9	U	
BROMOMETHANE	9	U	
CARBON DISULFIDE	9	U	
CARBON TETRACHLORIDE	9	U	
CHLOROBENZENE	9	U	
CHLORODIBROMOMETHANE	9	U	
CHLOROETHANE	9	U	
CHLOROFORM	9	U	

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03B
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	9	U	
CIS-1,2-DICHLOROETHENE	9	U	
CIS-1,3-DICHLOROPROPENE	9	U	
CYCLOHEXANE	9	U	
DICHLORODIFLUOROMETHANE	9	U	
ETHYLBENZENE	9	U	
ISOPROPYLBENZENE	9	U	
M+P-XYLENES	9	U	
METHYL ACETATE	9	U	
METHYL CYCLOHEXANE	9	U	
METHYL TERT-BUTYL ETHER	9	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	9	U	
STYRENE	9	U	
TETRACHLOROETHENE	9	U	
TOLUENE	9	U	
TOTAL XYLENES	9	U	
TRANS-1,2-DICHLOROETHENE	9	U	
TRANS-1,3-DICHLOROPROPENE	9	U	
TRICHLOROETHENE	9	U	
TRICHLOROFLUOROMETHANE	9	U	
VINYL CHLORIDE	9	U	

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05B
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	U	
1,1,2,2-TETRACHLOROETHANE	14	U	
1,1,2-TRICHLOROETHANE	14	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	14	U	
1,1-DICHLOROETHANE	14	U	
1,1-DICHLOROETHENE	14	U	
1,2,4-TRICHLOROBENZENE	14	U	
1,2,4-TRIMETHYLBENZENE	14	U	
1,2-DIBROMO-3-CHLOROPROPANE	14	U	
1,2-DIBROMOETHANE	14	U	
1,2-DICHLOROBENZENE	14	U	
1,2-DICHLOROETHANE	14	U	
1,2-DICHLOROPROPANE	14	U	
1,3,5-TRIMETHYLBENZENE	14	U	
1,3-DICHLOROBENZENE	14	U	
1,4-DICHLOROBENZENE	14	U	
2-BUTANONE	14	U	
2-HEXANONE	3	B	A
4-METHYL-2-PENTANONE	14	U	
ACETONE	10	B	A
BENZENE	14	U	
BROMODICHLOROMETHANE	14	U	
BROMOFORM	14	U	
BROMOMETHANE	14	U	
CARBON DISULFIDE	14	U	
CARBON TETRACHLORIDE	14	U	
CHLOROBENZENE	14	U	
CHLORODIBROMOMETHANE	14	U	
CHLOROETHANE	14	U	
CHLOROFORM	14	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05B
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	U	
CIS-1,2-DICHLOROETHENE	14	U	
CIS-1,3-DICHLOROPROPENE	14	U	
CYCLOHEXANE	14	U	
DICHLORODIFLUOROMETHANE	14	U	
ETHYLBENZENE	14	U	
ISOPROPYLBENZENE	14	U	
M+P-XYLENES	14	U	
METHYL ACETATE	14	U	
METHYL CYCLOHEXANE	14	U	
METHYL TERT-BUTYL ETHER	14	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	14	U	
STYRENE	14	U	
TETRACHLOROETHENE	14	U	
TOLUENE	14	U	
TOTAL XYLENES	14	U	
TRANS-1,2-DICHLOROETHENE	14	U	
TRANS-1,3-DICHLOROPROPENE	14	U	
TRICHLOROETHENE	14	U	
TRICHLOROFLUOROMETHANE	14	U	
VINYL CHLORIDE	14	U	

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07B
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	15	U	
1,1,2,2-TETRACHLOROETHANE	15	U	
1,1,2-TRICHLOROETHANE	15	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	15	U	
1,1-DICHLOROETHANE	15	U	
1,1-DICHLOROETHENE	15	U	
1,2,4-TRICHLOROBENZENE	15	U	
1,2,4-TRIMETHYLBENZENE	15	U	
1,2-DIBROMO-3-CHLOROPROPANE	15	U	
1,2-DIBROMOETHANE	15	U	
1,2-DICHLOROBENZENE	15	U	
1,2-DICHLOROETHANE	15	U	
1,2-DICHLOROPROPANE	15	U	
1,3,5-TRIMETHYLBENZENE	15	U	
1,3-DICHLOROBENZENE	15	U	
1,4-DICHLOROBENZENE	15	U	
2-BUTANONE	15	U	
2-HEXANONE	15	U	
4-METHYL-2-PENTANONE	15	U	
ACETONE	22	B	A
BENZENE	15	U	
BROMODICHLOROMETHANE	15	U	
BROMOFORM	15	U	
BROMOMETHANE	15	U	
CARBON DISULFIDE	15	U	
CARBON TETRACHLORIDE	15	U	
CHLOROBENZENE	15	U	
CHLORODIBROMOMETHANE	15	U	
CHLOROETHANE	15	U	
CHLOROFORM	15	U	

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07B
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	15	U	
CIS-1,2-DICHLOROETHENE	15	U	
CIS-1,3-DICHLOROPROPENE	15	U	
CYCLOHEXANE	15	U	
DICHLORODIFLUOROMETHANE	15	U	
ETHYLBENZENE	15	U	
ISOPROPYLBENZENE	15	U	
M+P-XYLENES	15	U	
METHYL ACETATE	15	U	
METHYL CYCLOHEXANE	15	U	
METHYL TERT-BUTYL ETHER	15	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	15	U	
STYRENE	15	U	
TETRACHLOROETHENE	15	U	
TOLUENE	15	U	
TOTAL XYLENES	15	U	
TRANS-1,2-DICHLOROETHENE	15	U	
TRANS-1,3-DICHLOROPROPENE	15	U	
TRICHLOROETHENE	15	U	
TRICHLOROFLUOROMETHANE	15	U	
VINYL CHLORIDE	15	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-118-0406	nsample	WOD-SU-118-0406	nsample	WOD-SU-119-0507
samp_date	2/12/2003	samp_date	2/12/2003	samp_date	2/12/2003
lab_id	B0258-09B	lab_id	B0258-09B	lab_id	B0258-12B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	89	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	10	B	A
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	3	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	22	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-119-0507
samp_date	2/12/2003
lab_id	B0258-12B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	3	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	10	U	
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	10	U	
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	10	U	
4-METHYL-2-PENTANONE	10	U	
ACETONE	27	B	A
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	10	U	
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	10	U	
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	9	U	
1,1,2,2-TETRACHLOROETHANE	9	U	
1,1,2-TRICHLOROETHANE	9	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	9	U	
1,1-DICHLOROETHANE	9	U	
1,1-DICHLOROETHENE	9	U	
1,2,4-TRICHLOROBENZENE	9	U	
1,2,4-TRIMETHYLBENZENE	9	U	
1,2-DIBROMO-3-CHLOROPROPANE	9	U	
1,2-DIBROMOETHANE	9	U	
1,2-DICHLOROBENZENE	9	U	
1,2-DICHLOROETHANE	9	U	
1,2-DICHLOROPROPANE	9	U	
1,3,5-TRIMETHYLBENZENE	9	U	
1,3-DICHLOROBENZENE	9	U	
1,4-DICHLOROBENZENE	9	U	
2-BUTANONE	9	U	
2-HEXANONE	9	U	
4-METHYL-2-PENTANONE	9	U	
ACETONE	12	B	A
BENZENE	9	U	
BROMODICHLOROMETHANE	9	U	
BROMOFORM	9	U	
BROMOMETHANE	9	U	
CARBON DISULFIDE	9	U	
CARBON TETRACHLORIDE	9	U	
CHLOROBENZENE	9	U	
CHLORODIBROMOMETHANE	9	U	
CHLOROETHANE	9	U	
CHLOROFORM	9	U	

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	9	U	
CIS-1,2-DICHLOROETHENE	9	U	
CIS-1,3-DICHLOROPROPENE	9	U	
CYCLOHEXANE	9	U	
DICHLORODIFLUOROMETHANE	9	U	
ETHYLBENZENE	9	U	
ISOPROPYLBENZENE	9	U	
M+P-XYLENES	9	U	
METHYL ACETATE	9	U	
METHYL CYCLOHEXANE	9	U	
METHYL TERT-BUTYL ETHER	9	U	
METHYLENE CHLORIDE	3	B	B
O-XYLENE	9	U	
STYRENE	9	U	
TETRACHLOROETHENE	9	U	
TOLUENE	9	U	
TOTAL XYLENES	9	U	
TRANS-1,2-DICHLOROETHENE	9	U	
TRANS-1,3-DICHLOROPROPENE	9	U	
TRICHLOROETHENE	9	U	
TRICHLOROFLUOROMETHANE	9	U	
VINYL CHLORIDE	9	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	UJ	C
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	37	J	P
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	43	J	P
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	37	J	P
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	77	J	P
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	41	J	P
PHENOL	360	U	
PYRENE	71	J	P

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	950	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	950	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	950	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	950	UJ	C
4,6-DINITRO-2-METHYLPHENOL	950	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	950	U	
4-NITROPHENOL	950	U	
ACENAPHTHENE	380	U	
ACENAPHTHYLENE	380	U	
ACETOPHENONE	380	U	
ANTHRACENE	380	U	
ATRAZINE	380	U	

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	58	J	CP
BENZO(A)ANTHRACENE	380	U	
BENZO(A)PYRENE	380	U	
BENZO(B)FLUORANTHENE	380	U	
BENZO(G,H,I)PERYLENE	380	U	
BENZO(K)FLUORANTHENE	380	U	
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	40	J	P
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	380	U	
DIBENZO(A,H)ANTHRACENE	380	U	
DIBENZOFURAN	380	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	U	
FLUORANTHENE	380	U	
FLUORENE	380	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	380	U	
ISOPHORONE	380	U	
NAPHTHALENE	380	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	950	U	
PHENANTHRENE	380	U	
PHENOL	380	U	
PYRENE	380	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06A
qc_type	NM
units	UG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	490	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	490	U	
2,4,5-TRICHLOROPHENOL	1200	U	
2,4,6-TRICHLOROPHENOL	490	U	
2,4-DICHLOROPHENOL	490	U	
2,4-DIMETHYLPHENOL	490	U	
2,4-DINITROPHENOL	1200	U	
2,4-DINITROTOLUENE	490	U	
2,6-DINITROTOLUENE	490	U	
2-CHLORONAPHTHALENE	490	U	
2-CHLOROPHENOL	490	U	
2-METHYLNAPHTHALENE	490	U	
2-METHYLPHENOL	490	U	
2-NITROANILINE	1200	U	
2-NITROPHENOL	490	U	
3,3'-DICHLOROBENZIDINE	490	U	
3-NITROANILINE	1200	UJ	C
4,6-DINITRO-2-METHYLPHENOL	1200	U	
4-BROMOPHENYL PHENYL ETHER	490	U	
4-CHLORO-3-METHYLPHENOL	490	U	
4-CHLOROANILINE	490	U	
4-CHLOROPHENYL PHENYL ETHER	490	U	
4-METHYLPHENOL	490	U	
4-NITROANILINE	1200	U	
4-NITROPHENOL	1200	U	
ACENAPHTHENE	490	U	
ACENAPHTHYLENE	490	U	
ACETOPHENONE	490	U	
ANTHRACENE	490	U	
ATRAZINE	490	U	

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06A
qc_type	NM
units	UG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	87	J	CP
BENZO(A)ANTHRACENE	490	U	
BENZO(A)PYRENE	490	U	
BENZO(B)FLUORANTHENE	490	U	
BENZO(G,H,I)PERYLENE	490	U	
BENZO(K)FLUORANTHENE	490	U	
BIS(2-CHLOROETHOXY)METHANE	490	U	
BIS(2-CHLOROETHYL)ETHER	490	U	
BIS(2-ETHYLHEXYL)PHTHALATE	490	U	
BUTYL BENZYL PHTHALATE	490	U	
CAPROLACTAM	490	U	
CARBAZOLE	490	U	
CHRYSENE	490	U	
DIBENZO(A,H)ANTHRACENE	490	U	
DIBENZOFURAN	490	U	
DIETHYL PHTHALATE	490	U	
DIMETHYL PHTHALATE	490	U	
DI-N-BUTYL PHTHALATE	490	U	
DI-N-OCTYL PHTHALATE	490	U	
FLUORANTHENE	490	U	
FLUORENE	490	U	
HEXACHLOROBENZENE	490	U	
HEXACHLOROBUTADIENE	490	U	
HEXACHLOROCYCLOPENTADIENE	490	U	
HEXACHLOROETHANE	490	U	
INDENO(1,2,3-CD)PYRENE	490	U	
ISOPHORONE	490	U	
NAPHTHALENE	490	U	
NITROBENZENE	490	U	
N-NITROSO-DI-N-PROPYLAMINE	490	U	

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06A
qc_type	NM
units	UG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	490	U	
PENTACHLOROPHENOL	1200	U	
PHENANTHRENE	490	U	
PHENOL	490	U	
PYRENE	490	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	890	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	890	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	890	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	890	UJ	C
4,6-DINITRO-2-METHYLPHENOL	890	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	890	U	
4-NITROPHENOL	890	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	890	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	390	U	
2,4,5-TRICHLOROPHENOL	980	U	
2,4,6-TRICHLOROPHENOL	390	U	
2,4-DICHLOROPHENOL	390	U	
2,4-DIMETHYLPHENOL	390	U	
2,4-DINITROPHENOL	980	U	
2,4-DINITROTOLUENE	390	U	
2,6-DINITROTOLUENE	390	U	
2-CHLORONAPHTHALENE	390	U	
2-CHLOROPHENOL	390	U	
2-METHYLNAPHTHALENE	390	U	
2-METHYLPHENOL	390	U	
2-NITROANILINE	980	U	
2-NITROPHENOL	390	U	
3,3'-DICHLOROBENZIDINE	390	U	
3-NITROANILINE	980	UJ	C
4,6-DINITRO-2-METHYLPHENOL	980	U	
4-BROMOPHENYL PHENYL ETHER	390	U	
4-CHLORO-3-METHYLPHENOL	390	U	
4-CHLOROANILINE	390	U	
4-CHLOROPHENYL PHENYL ETHER	390	U	
4-METHYLPHENOL	390	U	
4-NITROANILINE	980	U	
4-NITROPHENOL	980	U	
ACENAPHTHENE	390	U	
ACENAPHTHYLENE	390	U	
ACETOPHENONE	390	U	
ANTHRACENE	390	U	
ATRAZINE	390	U	

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	390	UJ	C
BENZO(A)ANTHRACENE	390	U	
BENZO(A)PYRENE	390	U	
BENZO(B)FLUORANTHENE	390	U	
BENZO(G,H,I)PERYLENE	390	U	
BENZO(K)FLUORANTHENE	390	U	
BIS(2-CHLOROETHOXY)METHANE	390	U	
BIS(2-CHLOROETHYL)ETHER	390	U	
BIS(2-ETHYLHEXYL)PHTHALATE	390	U	
BUTYL BENZYL PHTHALATE	390	U	
CAPROLACTAM	390	U	
CARBAZOLE	390	U	
CHRYSENE	390	U	
DIBENZO(A,H)ANTHRACENE	390	U	
DIBENZOFURAN	390	U	
DIETHYL PHTHALATE	390	U	
DIMETHYL PHTHALATE	390	U	
DI-N-BUTYL PHTHALATE	390	U	
DI-N-OCTYL PHTHALATE	390	U	
FLUORANTHENE	390	U	
FLUORENE	390	U	
HEXACHLOROBENZENE	390	U	
HEXACHLOROBUTADIENE	390	U	
HEXACHLOROCYCLOPENTADIENE	390	U	
HEXACHLOROETHANE	390	U	
INDENO(1,2,3-CD)PYRENE	390	U	
ISOPHORONE	390	U	
NAPHTHALENE	390	U	
NITROBENZENE	390	U	
N-NITROSO-DI-N-PROPYLAMINE	390	U	

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	390	U	
PENTACHLOROPHENOL	980	U	
PHENANTHRENE	390	U	
PHENOL	390	U	
PYRENE	390	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	430	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	430	U	
2,4,5-TRICHLOROPHENOL	1100	U	
2,4,6-TRICHLOROPHENOL	430	U	
2,4-DICHLOROPHENOL	430	U	
2,4-DIMETHYLPHENOL	430	U	
2,4-DINITROPHENOL	1100	U	
2,4-DINITROTOLUENE	430	U	
2,6-DINITROTOLUENE	430	U	
2-CHLORONAPHTHALENE	430	U	
2-CHLOROPHENOL	430	U	
2-METHYLNAPHTHALENE	430	U	
2-METHYLPHENOL	430	U	
2-NITROANILINE	1100	U	
2-NITROPHENOL	430	U	
3,3'-DICHLOROBENZIDINE	430	U	
3-NITROANILINE	1100	UJ	C
4,6-DINITRO-2-METHYLPHENOL	1100	U	
4-BROMOPHENYL PHENYL ETHER	430	U	
4-CHLORO-3-METHYLPHENOL	430	U	
4-CHLOROANILINE	430	U	
4-CHLOROPHENYL PHENYL ETHER	430	U	
4-METHYLPHENOL	430	U	
4-NITROANILINE	1100	U	
4-NITROPHENOL	1100	U	
ACENAPHTHENE	430	U	
ACENAPHTHYLENE	430	U	
ACETOPHENONE	430	U	
ANTHRACENE	430	U	
ATRAZINE	430	U	

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	430	UJ	C
BENZO(A)ANTHRACENE	430	U	
BENZO(A)PYRENE	430	U	
BENZO(B)FLUORANTHENE	430	U	
BENZO(G,H,I)PERYLENE	430	U	
BENZO(K)FLUORANTHENE	430	U	
BIS(2-CHLOROETHOXY)METHANE	430	U	
BIS(2-CHLOROETHYL)ETHER	430	U	
BIS(2-ETHYLHEXYL)PHTHALATE	430	U	
BUTYL BENZYL PHTHALATE	430	U	
CAPROLACTAM	430	U	
CARBAZOLE	430	U	
CHRYSENE	430	U	
DIBENZO(A,H)ANTHRACENE	430	U	
DIBENZOFURAN	430	U	
DIETHYL PHTHALATE	430	U	
DIMETHYL PHTHALATE	430	U	
DI-N-BUTYL PHTHALATE	430	U	
DI-N-OCTYL PHTHALATE	430	U	
FLUORANTHENE	430	U	
FLUORENE	430	U	
HEXACHLOROBENZENE	430	U	
HEXACHLOROBUTADIENE	430	U	
HEXACHLOROCYCLOPENTADIENE	430	U	
HEXACHLOROETHANE	430	U	
INDENO(1,2,3-CD)PYRENE	430	U	
ISOPHORONE	430	U	
NAPHTHALENE	430	U	
NITROBENZENE	430	U	
N-NITROSO-DI-N-PROPYLAMINE	430	U	

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	430	U	
PENTACHLOROPHENOL	1100	U	
PHENANTHRENE	430	U	
PHENOL	430	U	
PYRENE	430	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	UJ	C
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	UJ	C
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	UJ	C
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03A
qc_type	NM
units	UG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	960	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	960	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	390	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	960	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	960	UJ	C
4,6-DINITRO-2-METHYLPHENOL	960	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	960	U	
4-NITROPHENOL	960	U	
ACENAPHTHENE	390	U	
ACENAPHTHYLENE	390	U	
ACETOPHENONE	380	U	
ANTHRACENE	390	U	
ATRAZINE	380	U	

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	380	UJ	C
BENZO(A)ANTHRACENE	390	U	
BENZO(A)PYRENE	390	U	
BENZO(B)FLUORANTHENE	390	U	
BENZO(G,H,I)PERYLENE	390	U	
BENZO(K)FLUORANTHENE	390	U	
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	380	U	
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	390	U	
DIBENZO(A,H)ANTHRACENE	390	U	
DIBENZOFURAN	390	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	U	
FLUORANTHENE	40	J	P
FLUORENE	390	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	390	U	
ISOPHORONE	380	U	
NAPHTHALENE	390	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05A
qc_type	NM
units	UG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	960	U	
PHENANTHRENE	390	U	
PHENOL	380	U	
PYRENE	390	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	940	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	940	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	940	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	940	UJ	C
4,6-DINITRO-2-METHYLPHENOL	940	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	940	U	
4-NITROPHENOL	940	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	370	UJ	C
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	940	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-118-0406		nsample	WOD-SU-118-0406		nsample	WOD-SU-118-0406	
samp_date	2/12/2003		samp_date	2/12/2003		samp_date	2/12/2003	
lab_id	B0258-09A		lab_id	B0258-09A		lab_id	B0258-09A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/KG		units	UG/KG		units	UG/KG	
Pct_Solids	89		Pct_Solids	89		Pct_Solids	89	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	920	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	920	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	920	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	920	UJ	C
4,6-DINITRO-2-METHYLPHENOL	920	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	920	U	
4-NITROPHENOL	920	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	920	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-119-0507
samp_date	2/12/2003
lab_id	B0258-12A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	870	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	870	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	870	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	870	UJ	C
4,6-DINITRO-2-METHYLPHENOL	870	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	870	U	
4-NITROPHENOL	870	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SU-119-0507
samp_date	2/12/2003
lab_id	B0258-12A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	UJ	C
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-119-0507
samp_date	2/12/2003
lab_id	B0258-12A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	870	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	920	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	920	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	920	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	920	UJ	C
4,6-DINITRO-2-METHYLPHENOL	920	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	920	U	
4-NITROPHENOL	920	UJ	D
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	370	UJ	C
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	UJ	D
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	66	J	P
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	UJ	D
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	UJ	D
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	920	U	
PHENANTHRENE	370	UJ	D
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	UJ	C
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-115	nsample	WOD-SS-116	nsample	WOD-SS-117
samp_date	2/12/2003	samp_date	2/12/2003	samp_date	2/12/2003
lab_id	B0258-02A	lab_id	B0258-04A	lab_id	B0258-06A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	86	Pct_Solids	67
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	49	U	
AROCLOR-1221	49	U	
AROCLOR-1232	49	U	
AROCLOR-1242	49	U	
AROCLOR-1248	49	U	
AROCLOR-1254	49	U	
AROCLOR-1260	49	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-118	nsample	WOD-SS-119	nsample	WOD-SS-120
samp_date	2/12/2003	samp_date	2/12/2003	samp_date	2/12/2003
lab_id	B0258-08A	lab_id	B0258-10A	lab_id	B0258-14A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92	Pct_Solids	84	Pct_Solids	77
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-115-0305	nsample	WOD-SU-116-0204	nsample	WOD-SU-117-0102
samp_date	2/12/2003	samp_date	2/12/2003	samp_date	2/12/2003
lab_id	B0258-03A	lab_id	B0258-05A	lab_id	B0258-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	93	Pct_Solids	84	Pct_Solids	86
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	40	U	
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	38	U	
AROCLOR-1254	38	U	
AROCLOR-1260	38	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-118-0406	nsample	WOD-SU-119-0507	nsample	WOD-SU-120-0406
samp_date	2/12/2003	samp_date	2/12/2003	samp_date	2/12/2003
lab_id	B0258-09A	lab_id	B0258-12A	lab_id	B0258-15A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	89	Pct_Solids	91	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-13A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5099

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-13A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5099

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-16A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5100

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	7	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-16A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5100

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5098

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5098

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3968

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	15	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3968

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3950

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	15	U
74-87-3	Chloromethane	15	U
75-01-4	Vinyl Chloride	15	U
74-83-9	Bromomethane	15	U
75-00-3	Chloroethane	15	U
75-69-4	Trichlorofluoromethane	15	U
75-35-4	1,1-Dichloroethene	15	U
67-64-1	Acetone	190	
75-15-0	Carbon Disulfide	15	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	15	U
1634-04-4	Methyl tert-butyl ether	15	U
75-34-3	1,1-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
156-59-2	cis-1,2-Dichloroethene	15	U
67-66-3	Chloroform	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
107-06-2	1,2-Dichloroethane	15	U
71-43-2	Benzene	15	U
79-01-6	Trichloroethene	15	U
78-87-5	1,2-Dichloropropane	15	U
75-27-4	Bromodichloromethane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
79-00-5	1,1,2-Trichloroethane	15	U
127-18-4	Tetrachloroethene	15	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	15	U
106-93-4	1,2-Dibromoethane	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3950

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	15	U
95-47-6	o-Xylene	15	U
1330-20-7	Xylene (Total)	15	U
100-42-5	Styrene	15	U
75-25-2	Bromoform	15	U
98-82-8	Isopropylbenzene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-67-8	1,3,5-Trimethylbenzene	15	U
95-63-6	1,2,4-Trimethylbenzene	15	U
541-73-1	1,3-Dichlorobenzene	15	U
106-46-7	1,4-Dichlorobenzene	15	U
95-50-1	1,2-Dichlorobenzene	15	U
96-12-8	1,2-Dibromo-3-chloropropane	15	U
120-82-1	1,2,4-Trichlorobenzene	15	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	15	U
79-20-9	Methyl Acetate	37	
110-81-7	Cyclohexane	15	U
108-87-2	Methylcyclohexane	15	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3950

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	24	NJ
2.		UNKNOWN	11.07	30	J
3.		UNKNOWN	11.78	9	J
4.		UNKNOWN	13.32	12	J
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3970

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	68	B
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3970

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	16	
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-116RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3970

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.02	15	J
2.	66-25-1	HEXANAL	8.75	7	NJ
3.		UNKNOWN	11.07	14	J
4.					
5.					
6.					
7.					
8.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06C

Sample wt/vol: 3.2 (g/mL) G Lab File ID: V5E3952

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	23	U
74-87-3	Chloromethane	23	U
75-01-4	Vinyl Chloride	23	U
74-83-9	Bromomethane	23	U
75-00-3	Chloroethane	23	U
75-69-4	Trichlorofluoromethane	23	U
75-35-4	1,1-Dichloroethene	23	U
67-64-1	Acetone	230	
75-15-0	Carbon Disulfide	23	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	23	U
1634-04-4	Methyl tert-butyl ether	23	U
75-34-3	1,1-Dichloroethane	23	U
78-93-3	2-Butanone	23	U
156-59-2	cis-1,2-Dichloroethene	23	U
67-66-3	Chloroform	23	U
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
107-06-2	1,2-Dichloroethane	23	U
71-43-2	Benzene	23	U
79-01-6	Trichloroethene	23	U
78-87-5	1,2-Dichloropropane	23	U
75-27-4	Bromodichloromethane	23	U
10061-01-5	cis-1,3-Dichloropropene	23	U
108-10-1	4-Methyl-2-pentanone	23	U
108-88-3	Toluene	23	U
10061-02-6	trans-1,3-Dichloropropene	23	U
79-00-5	1,1,2-Trichloroethane	23	U
127-18-4	Tetrachloroethene	23	U
591-78-6	2-Hexanone	23	U
124-48-1	Dibromochloromethane	23	U
106-93-4	1,2-Dibromoethane	23	U
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06C

Sample wt/vol: 3.2 (g/mL) G Lab File ID: V5E3952

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	23	U
95-47-6	o-Xylene	23	U
1330-20-7	Xylene (Total)	23	U
100-42-5	Styrene	23	U
75-25-2	Bromoform	23	U
98-82-8	Isopropylbenzene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
108-67-8	1,3,5-Trimethylbenzene	23	U
95-63-6	1,2,4-Trimethylbenzene	23	U
541-73-1	1,3-Dichlorobenzene	23	U
106-46-7	1,4-Dichlorobenzene	23	U
95-50-1	1,2-Dichlorobenzene	23	U
96-12-8	1,2-Dibromo-3-chloropropane	23	U
120-82-1	1,2,4-Trichlorobenzene	23	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	23	U
79-20-9	Methyl Acetate	95	
110-81-7	Cyclohexane	23	U
108-87-2	Methylcyclohexane	23	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06C

Sample wt/vol: 3.2 (g/mL) G Lab File ID: V5E3952

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.21	14	J
2.	64-17-5	ETHANOL	3.02	100	NJ
3.	508-32-7	TRICYCLO[2.2.1.02,6]HEPTANE,	10.47	28	NJ
4.	80-56-8	.ALPHA.-PINENE	10.64	84	NJ
5.	79-92-5	CAMPHENE	10.96	530	NJ
6.		UNKNOWN	11.06	54	J
7.		UNKNOWN	11.84	42	J
8.	5989-54-8	CYCLOHEXENE, 1-METHYL-4-(1-M	12.13	120	NJ
9.	535-77-3	BENZENE, 1-METHYL-3-(1-METHY	12.18	64	NJ
10.		UNKNOWN	18.70	24	J
11.					
12.					
13.					
14.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06CRE

Sample wt/vol: 3.0 (g/mL) G Lab File ID: V5E3972

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	25	U
74-87-3	Chloromethane	25	U
75-01-4	Vinyl Chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
75-69-4	Trichlorofluoromethane	25	U
75-35-4	1,1-Dichloroethene	25	U
67-64-1	Acetone	250	B
75-15-0	Carbon Disulfide	25	U
75-09-2	Methylene Chloride	12	J
156-60-5	trans-1,2-Dichloroethene	25	U
1634-04-4	Methyl tert-butyl ether	25	U
75-34-3	1,1-Dichloroethane	25	U
78-93-3	2-Butanone	25	U
156-59-2	cis-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
107-06-2	1,2-Dichloroethane	25	U
71-43-2	Benzene	25	U
79-01-6	Trichloroethene	25	U
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
108-10-1	4-Methyl-2-pentanone	25	U
108-88-3	Toluene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
127-18-4	Tetrachloroethene	25	U
591-78-6	2-Hexanone	25	U
124-48-1	Dibromochloromethane	25	U
106-93-4	1,2-Dibromoethane	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06CRE

Sample wt/vol: 3.0 (g/mL) G Lab File ID: V5E3972

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	25	U
95-47-6	o-Xylene	25	U
1330-20-7	Xylene (Total)	25	U
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
98-82-8	Isopropylbenzene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-67-8	1,3,5-Trimethylbenzene	25	U
95-63-6	1,2,4-Trimethylbenzene	25	U
541-73-1	1,3-Dichlorobenzene	25	U
106-46-7	1,4-Dichlorobenzene	25	U
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U
120-82-1	1,2,4-Trichlorobenzene	25	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	25	U
79-20-9	Methyl Acetate	47	
110-81-7	Cyclohexane	25	U
108-87-2	Methylcyclohexane	25	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-117RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06CRE

Sample wt/vol: 3.0 (g/mL) G Lab File ID: V5E3972

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 33 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.19	17	J
2.		UNKNOWN	3.02	62	J
3.		UNKNOWN	5.01	13	J
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3954

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	52	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3954

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	3	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08C

Sample wt/vol: 4.8 (g/mL) G Lab File ID: V5E3954

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 8 Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	8	NJ
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10C

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3999

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	41	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10C

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3999

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	4	J
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10C

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3999

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	23	NJ
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3978

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 23 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	17	U
74-87-3	Chloromethane	17	U
75-01-4	Vinyl Chloride	17	U
74-83-9	Bromomethane	17	U
75-00-3	Chloroethane	17	U
75-69-4	Trichlorofluoromethane	17	U
75-35-4	1,1-Dichloroethene	17	U
67-64-1	Acetone	440	EB
75-15-0	Carbon Disulfide	17	U
75-09-2	Methylene Chloride	8	J
156-60-5	trans-1,2-Dichloroethene	17	U
1634-04-4	Methyl tert-butyl ether	17	U
75-34-3	1,1-Dichloroethane	17	U
78-93-3	2-Butanone	17	U
156-59-2	cis-1,2-Dichloroethene	17	U
67-66-3	Chloroform	17	U
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
107-06-2	1,2-Dichloroethane	17	U
71-43-2	Benzene	17	U
79-01-6	Trichloroethene	17	U
78-87-5	1,2-Dichloropropane	17	U
75-27-4	Bromodichloromethane	17	U
10061-01-5	cis-1,3-Dichloropropene	17	U
108-10-1	4-Methyl-2-pentanone	17	U
108-88-3	Toluene	2	J
10061-02-6	trans-1,3-Dichloropropene	17	U
79-00-5	1,1,2-Trichloroethane	17	U
127-18-4	Tetrachloroethene	17	U
591-78-6	2-Hexanone	17	U
124-48-1	Dibromochloromethane	17	U
106-93-4	1,2-Dibromoethane	17	U
108-90-7	Chlorobenzene	17	U
100-41-4	Ethylbenzene	17	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3978

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 23 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	17	U
95-47-6	o-Xylene	17	U
1330-20-7	Xylene (Total)	17	U
100-42-5	Styrene	17	U
75-25-2	Bromoform	17	U
98-82-8	Isopropylbenzene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
108-67-8	1,3,5-Trimethylbenzene	17	U
95-63-6	1,2,4-Trimethylbenzene	17	U
541-73-1	1,3-Dichlorobenzene	17	U
106-46-7	1,4-Dichlorobenzene	17	U
95-50-1	1,2-Dichlorobenzene	17	U
96-12-8	1,2-Dibromo-3-chloropropane	17	U
120-82-1	1,2,4-Trichlorobenzene	17	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	17	U
79-20-9	Methyl Acetate	160	
110-81-7	Cyclohexane	17	U
108-87-2	Methylcyclohexane	17	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3978

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 23 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 21

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.22	18	J
2.	64-17-5	ETHANOL	3.02	46	NJ
3.		UNKNOWN	3.55	9	J
4.	590-86-3	BUTANAL, 3-METHYL-	6.10	18	NJ
5.		UNKNOWN	6.89	35	J
6.		UNKNOWN	7.82	13	J
7.		CYCLIC ALKANE	7.99	14	J
8.		UNKNOWN	8.36	13	J
9.	66-25-1	HEXANAL	8.75	490	NJ
10.		UNKNOWN	10.05	16	J
11.		UNKNOWN	10.46	20	J
12.	80-56-8	.ALPHA.-PINENE	10.64	24	NJ
13.	79-92-5	CAMPHENE	10.96	160	NJ
14.		UNKNOWN	11.06	35	J
15.		UNKNOWN	11.78	130	J
16.		UNKNOWN	11.91	22	J
17.		UNKNOWN	12.04	25	J
18.	5989-27-5	D-LIMONENE	12.13	49	NJ
19.	527-84-4	BENZENE, 1-METHYL-2-(1-METHY	12.18	25	NJ
20.	470-82-6	EUCALYPTOL	12.32	140	NJ
21.	120-58-1	1,3-BENZODIOXOLE, 5-(1-PROPE	16.03	20	NJ
22.					
23.					
24.					
25.					
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27.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14CRE

Sample wt/vol: 2.9 (g/mL) G Lab File ID: V5E4001

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 23 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	22	U
74-87-3	Chloromethane	22	U
75-01-4	Vinyl Chloride	22	U
74-83-9	Bromomethane	22	U
75-00-3	Chloroethane	22	U
75-69-4	Trichlorofluoromethane	22	U
75-35-4	1,1-Dichloroethene	22	U
67-64-1	Acetone	310	
75-15-0	Carbon Disulfide	22	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	22	U
1634-04-4	Methyl tert-butyl ether	22	U
75-34-3	1,1-Dichloroethane	22	U
78-93-3	2-Butanone	23	
156-59-2	cis-1,2-Dichloroethene	22	U
67-66-3	Chloroform	22	U
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
107-06-2	1,2-Dichloroethane	22	U
71-43-2	Benzene	22	U
79-01-6	Trichloroethene	22	U
78-87-5	1,2-Dichloropropane	22	U
75-27-4	Bromodichloromethane	22	U
10061-01-5	cis-1,3-Dichloropropene	22	U
108-10-1	4-Methyl-2-pentanone	22	U
108-88-3	Toluene	22	U
10061-02-6	trans-1,3-Dichloropropene	22	U
79-00-5	1,1,2-Trichloroethane	22	U
127-18-4	Tetrachloroethene	22	U
591-78-6	2-Hexanone	22	U
124-48-1	Dibromochloromethane	22	U
106-93-4	1,2-Dibromoethane	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14CRE

Sample wt/vol: 2.9 (g/mL) G Lab File ID: V5E4001

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 23 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	22	U
95-47-6	o-Xylene	22	U
1330-20-7	Xylene (Total)	22	U
100-42-5	Styrene	22	U
75-25-2	Bromoform	22	U
98-82-8	Isopropylbenzene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-67-8	1,3,5-Trimethylbenzene	22	U
95-63-6	1,2,4-Trimethylbenzene	22	U
541-73-1	1,3-Dichlorobenzene	22	U
106-46-7	1,4-Dichlorobenzene	22	U
95-50-1	1,2-Dichlorobenzene	22	U
96-12-8	1,2-Dibromo-3-chloropropane	22	U
120-82-1	1,2,4-Trichlorobenzene	22	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	22	U
79-20-9	Methyl Acetate	110	
110-81-7	Cyclohexane	22	U
108-87-2	Methylcyclohexane	22	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150305

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3969

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 7 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	13	B
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	9	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150305

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E3969

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 7 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	9	U
95-47-6	o-Xylene	9	U
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	9	U
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3996

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	14	U
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3996

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	14	U
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05B

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E3996

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 16 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	11	NJB
2.					
3.					
4.					
5.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07B

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3997

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	15	U
74-87-3	Chloromethane	15	U
75-01-4	Vinyl Chloride	15	U
74-83-9	Bromomethane	15	U
75-00-3	Chloroethane	15	U
75-69-4	Trichlorofluoromethane	15	U
75-35-4	1,1-Dichloroethene	15	U
67-64-1	Acetone	22	
75-15-0	Carbon Disulfide	15	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	15	U
1634-04-4	Methyl tert-butyl ether	15	U
75-34-3	1,1-Dichloroethane	15	U
78-93-3	2-Butanone	15	U
156-59-2	cis-1,2-Dichloroethene	15	U
67-66-3	Chloroform	15	U
71-55-6	1,1,1-Trichloroethane	15	U
56-23-5	Carbon Tetrachloride	15	U
107-06-2	1,2-Dichloroethane	15	U
71-43-2	Benzene	15	U
79-01-6	Trichloroethene	15	U
78-87-5	1,2-Dichloropropane	15	U
75-27-4	Bromodichloromethane	15	U
10061-01-5	cis-1,3-Dichloropropene	15	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	15	U
10061-02-6	trans-1,3-Dichloropropene	15	U
79-00-5	1,1,2-Trichloroethane	15	U
127-18-4	Tetrachloroethene	15	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	15	U
106-93-4	1,2-Dibromoethane	15	U
108-90-7	Chlorobenzene	15	U
100-41-4	Ethylbenzene	15	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07B

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3997

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	15	U
95-47-6	o-Xylene	15	U
1330-20-7	Xylene (Total)	15	U
100-42-5	Styrene	15	U
75-25-2	Bromoform	15	U
98-82-8	Isopropylbenzene	15	U
79-34-5	1,1,2,2-Tetrachloroethane	15	U
108-67-8	1,3,5-Trimethylbenzene	15	U
95-63-6	1,2,4-Trimethylbenzene	15	U
541-73-1	1,3-Dichlorobenzene	15	U
106-46-7	1,4-Dichlorobenzene	15	U
95-50-1	1,2-Dichlorobenzene	15	U
96-12-8	1,2-Dibromo-3-chloropropane	15	U
120-82-1	1,2,4-Trichlorobenzene	15	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	15	U
79-20-9	Methyl Acetate	15	U
110-81-7	Cyclohexane	15	U
108-87-2	Methylcyclohexane	15	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07B

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E3997

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 14 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	10	NJ
2.					
3.					
4.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3998

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 11 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E3998

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 11 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3977

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 9 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	22	B
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3977

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 9 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E3977

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 9 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	556-67-2	CYCLOTETRASILOXANE, OCTAMETH	11.06	10	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E4002

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 11 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	27	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E4002

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 11 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15B

Sample wt/vol: 5.5 (g/mL) G Lab File ID: V5E4002

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 11 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	589-98-0	3-OCTANOL	11.91	10	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP06

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E4000

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 9 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	12	
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	9	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP06

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11B

Sample wt/vol: 5.8 (g/mL) G Lab File ID: V5E4000

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: not dec. 9 Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	9	U
95-47-6	o-Xylene	9	U
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	9	U
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-13D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2296

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-13D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2296

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-16D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2297

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-16D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2297

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2323

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2323

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	41	J
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	77	J
129-00-0	Pyrene	71	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	37	J
218-01-9	Chrysene	37	J
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	43	J
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2323

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.90	1100	J
2.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.35	830	NJ
3.		UNKNOWN	23.98	440	J
4.		UNKNOWN	28.09	2400	J
5.		UNKNOWN	30.36	400	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2324

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	950	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	950	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	950	U
100-02-7	4-Nitrophenol	950	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2324

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	950	U
534-52-1	4,6-Dinitro-2-methylphenol	950	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	950	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	40	J
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	58	J
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2324

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	17.75	230	J
2.	57-10-3	HEXADECANOIC ACID	18.13	330	NJ
3.		UNKNOWN	19.90	400	J
4.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.35	380	NJ
5.	638-66-4	OCTADECANAL	21.68	200	NJ
6.	19047-85-9	PHOSPHONIC ACID, DIOCTADECYL	22.13	210	NJ
7.		UNKNOWN	23.99	470	J
8.		UNKNOWN	24.13	280	J
9.		UNKNOWN	25.41	520	J
10.		UNKNOWN	26.28	1100	J
11.	14021-23-9	D-FRIEDOOLEAN-14-ENE, 3-METH	28.11	6700	NJ
12.	83-47-6	.GAMMA.-SITOSTEROL	29.00	1600	NJ
13.		UNKNOWN	30.25	500	J
14.		UNKNOWN	30.40	3400	J
15.	1058-61-3	STIGMAST-4-EN-3-ONE	30.85	1300	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2316

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 33 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	490	U
111-44-4	bis(2-Chloroethyl)Ether	490	U
95-57-8	2-Chlorophenol	490	U
95-48-7	2-Methylphenol	490	U
108-60-1	2,2'-oxybis(1-Chloropropane)	490	U
106-44-5	4-Methylphenol	490	U
621-64-7	N-Nitroso-di-n-propylamine	490	U
67-72-1	Hexachloroethane	490	U
98-95-3	Nitrobenzene	490	U
78-59-1	Isophorone	490	U
88-75-5	2-Nitrophenol	490	U
105-67-9	2,4-Dimethylphenol	490	U
120-83-2	2,4-Dichlorophenol	490	U
91-20-3	Naphthalene	490	U
106-47-8	4-Chloroaniline	490	U
111-91-1	bis(2-Chloroethoxy)methane	490	U
87-68-3	Hexachlorobutadiene	490	U
59-50-7	4-Chloro-3-Methylphenol	490	U
91-57-6	2-Methylnaphthalene	490	U
77-47-4	Hexachlorocyclopentadiene	490	U
88-06-2	2,4,6-Trichlorophenol	490	U
95-95-4	2,4,5-Trichlorophenol	1200	U
91-58-7	2-Chloronaphthalene	490	U
88-74-4	2-Nitroaniline	1200	U
131-11-3	Dimethylphthalate	490	U
208-96-8	Acenaphthylene	490	U
606-20-2	2,6-Dinitrotoluene	490	U
99-09-2	3-Nitroaniline	1200	U
83-32-9	Acenaphthene	490	U
51-28-5	2,4-Dinitrophenol	1200	U
100-02-7	4-Nitrophenol	1200	U
132-64-9	Dibenzofuran	490	U
121-14-2	2,4-Dinitrotoluene	490	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2316

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 33 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	490	U
7005-72-3	4-Chlorophenyl-phenylether	490	U
86-73-7	Fluorene	490	U
100-01-6	4-Nitroaniline	1200	U
534-52-1	4,6-Dinitro-2-methylphenol	1200	U
86-30-6	N-Nitrosodiphenylamine (1)	490	U
101-55-3	4-Bromophenyl-phenylether	490	U
118-74-1	Hexachlorobenzene	490	U
87-86-5	Pentachlorophenol	1200	U
85-01-8	Phenanthrene	490	U
120-12-7	Anthracene	490	U
86-74-8	Carbazole	490	U
84-74-2	Di-n-butylphthalate	490	U
206-44-0	Fluoranthene	490	U
129-00-0	Pyrene	490	U
85-68-7	Butylbenzylphthalate	490	U
91-94-1	3,3'-Dichlorobenzidine	490	U
56-55-3	Benzo(a)anthracene	490	U
218-01-9	Chrysene	490	U
117-81-7	bis(2-Ethylhexyl)phthalate	490	U
117-84-0	Di-n-octylphthalate	490	U
205-99-2	Benzo(b)fluoranthene	490	U
207-08-9	Benzo(k)fluoranthene	490	U
50-32-8	Benzo(a)pyrene	490	U
193-39-5	Indeno(1,2,3-cd)pyrene	490	U
53-70-3	Dibenzo(a,h)anthracene	490	U
191-24-2	Benzo(g,h,i)perylene	490	U
92-52-4	1,1'-Biphenyl	490	U
98-86-2	Acetophenone	490	U
1912-24-9	Atrazine	490	U
100-52-7	Benzaldehyde	87	J
105-60-2	Caprolactum	490	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2316

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 33 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	94-59-7	1,3-BENZODIOXOLE, 5-(2-PROPE	11.61	640	NJ
2.		UNKNOWN	23.98	260	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2318

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	890	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	890	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	890	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	890	U
100-02-7	4-Nitrophenol	890	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2318

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	890	U
534-52-1	4,6-Dinitro-2-methylphenol	890	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	890	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2318

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	21.82	180	J
2.		UNKNOWN	23.97	190	J
3.	4630-07-3	NAPHTHALENE, 1,2,3,5,6,7,8,8	28.07	180	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2325

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	980	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	980	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	980	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	980	U
100-02-7	4-Nitrophenol	980	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2325

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	980	U
534-52-1	4,6-Dinitro-2-methylphenol	980	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	980	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U
92-52-4	1,1'-Biphenyl	390	U
98-86-2	Acetophenone	390	U
1912-24-9	Atrazine	390	U
100-52-7	Benzaldehyde	390	U
105-60-2	Caprolactum	390	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2325

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.45	200	J
2.		UNKNOWN	19.90	540	J
3.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.35	490	NJ
4.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.98	590	NJ
5.		UNKNOWN	24.26	190	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2347

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
120-83-2	2,4-Dichlorophenol	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2347

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	430	U
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	430	U
129-00-0	Pyrene	430	U
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	430	U
218-01-9	Chrysene	430	U
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	430	U
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	430	U
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U
92-52-4	1,1'-Biphenyl	430	U
98-86-2	Acetophenone	430	U
1912-24-9	Atrazine	430	U
100-52-7	Benzaldehyde	430	U
105-60-2	Caprolactum	430	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S3C2347

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	94-59-7	1,3-BENZODIOXOLE, 5-(2-PROPE	11.54	3100	NJ
2.	3856-25-5	COPAENE	14.06	280	NJ
3.	124-25-4	TETRADECANAL	14.92	730	NJ
4.	58594-45-9	13-OCTADECENAL, (Z)-	16.65	590	NJ
5.	57-10-3	HEXADECANOIC ACID	18.05	350	NJ
6.		UNKNOWN	19.82	460	J
7.		UNKNOWN	21.05	640	J
8.	123-95-5	OCTADECANOIC ACID, BUTYL EST	21.27	520	NJ
9.		UNKNOWN	21.73	660	J
10.		UNKNOWN	22.07	610	J
11.		UNKNOWN	22.48	400	J
12.		UNKNOWN	22.91	850	J
13.		UNKNOWN	23.11	500	J
14.	1454-84-8	1-NONADECANOL	23.37	800	NJ
15.		UNKNOWN	26.15	860	J
16.		UNKNOWN	28.81	1200	J
17.	1058-61-3	STIGMAST-4-EN-3-ONE	30.61	1100	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150305

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2368

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150305

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2368

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1150305

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2368

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 7 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.75	490	J
2.	123-95-5	OCTADECANOIC ACID, BUTYL EST	21.20	430	NJ
3.		UNKNOWN	23.82	270	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2315

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	960	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	960	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	960	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	960	U
100-02-7	4-Nitrophenol	960	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2315

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 16 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	960	U
534-52-1	4,6-Dinitro-2-methylphenol	960	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	960	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	40	J
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	380	U
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S3C2317

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	940	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	940	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	940	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	940	U
100-02-7	4-Nitrophenol	940	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S3C2317

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	940	U
534-52-1	4,6-Dinitro-2-methylphenol	940	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	940	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	370	U
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1170102

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: S3C2317

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.97	260	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2312

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2312

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S3C2312

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	79-34-5	ETHANE, 1,1,2,2-TETRACHLORO-	6.45	190	NJ
2.					
3.					
4.					
5.					
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2314

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	870	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	870	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	870	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	870	U
100-02-7	4-Nitrophenol	870	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2314

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	870	U
534-52-1	4,6-Dinitro-2-methylphenol	870	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	870	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2319

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2319

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	66	J
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	370	U
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1200406

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2319

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	464-48-2	BICYCLO[2.2.1]HEPTAN-2-ONE,	9.84	550	NJ
2.	120-58-1	1,3-BENZODIOXOLE, 5-(1-PROPE	11.63	8800	NJ
3.	93-15-2	BENZENE, 1,2-DIMETHOXY-4-(2-	12.77	150	NJ
4.		UNKNOWN	21.81	220	J
5.		UNKNOWN	23.97	210	J
6.		UNKNOWN	29.91	200	J
7.		UNKNOWN	30.82	400	J
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP06

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2313

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP06

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2313

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SVDUP06

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2313

Level: (low/med) LOW Date Received: 02/13/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.45	150	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-13D

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9447F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-021203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: B0258-16D

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9448F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-02A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9515F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9483F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-06A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9485F

% Moisture: 33 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	49	U
11104-28-2	Aroclor-1221	49	U
11141-16-5	Aroclor-1232	49	U
53469-21-9	Aroclor-1242	49	U
12672-29-6	Aroclor-1248	49	U
11097-69-1	Aroclor-1254	49	U
11096-82-5	Aroclor-1260	49	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9487F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-10A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: E1D9495F

% Moisture: 16 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-14A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9498F

% Moisture: 23 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1150305

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-03A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9516F

% Moisture: 7 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1160204

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9484F

% Moisture: 16 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	40	U
11104-28-2	Aroclor-1221	40	U
11141-16-5	Aroclor-1232	40	U
53469-21-9	Aroclor-1242	40	U
12672-29-6	Aroclor-1248	40	U
11097-69-1	Aroclor-1254	40	U
11096-82-5	Aroclor-1260	40	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1170102

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-07A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9486F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	38	U
11104-28-2	Aroclor-1221	38	U
11141-16-5	Aroclor-1232	38	U
53469-21-9	Aroclor-1242	38	U
12672-29-6	Aroclor-1248	38	U
11097-69-1	Aroclor-1254	38	U
11096-82-5	Aroclor-1260	38	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1180406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-09A

Sample wt/vol: 30.9 (g/mL) G Lab File ID: E1D9488F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1190507

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-12A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9497F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1200406

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9499F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1200406MS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15AMS

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9517F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	230	
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	250	

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1200406MSD

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15AMSD

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9518F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	260	
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	280	

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SVDUP06

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-11A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: E1D9496F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

APPENDIX C

SUPPORT DOCUMENTATION

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for three aqueous and thirteen soil samples that were collected on February 12, 2003, and received at Mitkem on February 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of dibromofluoromethane, 1,2-dichloroethane-d4 and toluened8 in sample WOD-SS-116, high recovery of 1,2-dichloroethane-d4 and toluened8 in sample WOD-SS-117 and high recovery of 1,2-dichloroethane-d4 in sample WOD-SS-120. Matrix interference confirmed on surrogate recovery with re-analysis of the samples with similar findings.

Lab control sample/lab control sample: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of bibenzofuran and high recovery of carbazole in S3NLCS and high recovery of 4-nitroaniline in S3PLCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1200406. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1200406. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on samples FB021203 and WOD-SS-115. Spike recoveries were within the QC limits with the exception of antimony for sample WOD-SS-115. Form 1's are flagged with an "N" for antimony. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on samples FB021203 and WOD-SS-115. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/24/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0258

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0258-01A	TB-021203	
B0258-02A	WOD-SS-115	
B0258-02B	WOD-SS-115	
B0258-02C	WOD-SS-115	
B0258-03A	SV1150305	WOD-SV-115-0305
B0258-03B	SV1150305	WOD-SV-115-0305
B0258-04A	WOD-SS-116	
B0258-04B	WOD-SS-116	
B0258-04C	WOD-SS-116	
B0258-05A	SV1160204	WOD-SV-116-0204
B0258-05B	SV1160204	WOD-SV-116-0204
B0258-06A	WOD-SS-117	
B0258-06B	WOD-SS-117	
B0258-06C	WOD-SS-117	
B0258-07A	SV1170102	WOD-SV-117-0102
B0258-07B	SV1170102	WOD-SV-117-0102
B0258-08A	WOD-SS-118	
B0258-08B	WOD-SS-118	
B0258-08C	WOD-SS-118	
B0258-09A	SV1180406	WOD-SV-118-0406
B0258-09B	SV1180406	WOD-SV-118-0406
B0258-10A	WOD-SS-119	
B0258-10B	WOD-SS-119	
B0258-10C	WOD-SS-119	
B0258-11A	SVDUP06	WOD-SV-DUP06
B0258-11B	SVDUP06	WOD-SV-DUP06
B0258-12A	SV1190507	WOD-SV-119-0507
B0258-12B	SV1190507	WOD-SV-119-0507
B0258-13A	FB-021203	
B0258-13B	FB-021203	
B0258-13C	FB-021203	
B0258-13D	FB-021203	
B0258-14A	WOD-SS-120	
B0258-14B	WOD-SS-120	
B0258-14C	WOD-SS-120	
B0258-15A	SV1200406	WOD-SV-120-0406
B0258-15B	SV1200406	WOD-SV-120-0406
B0258-16A	RB-021203	
B0258-16B	RB-021203	
B0258-16C	RB-021203	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

0 05

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0258-16D	RB-021203	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

0 06

B0258

HOLDING TIME
05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FB-021203	B0258-13C	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
UG/L	FB-021203DUP	B0258-13CDUP	DUPLICATE	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	FB-021203MS	B0258-13CMS	MS	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	LCSS1	0217LCSS	LCS	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
%	LCSW1	0217LCSW	LCS	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
MG/KG	PBS1	0217PBS	M_BLANK	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	PBW1	0217PBW	M_BLANK	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	RB-021203	B0258-16C	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-115	B0258-02A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-115DUP	B0258-02ADUP	DUPLICATE	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	WOD-SS-115MS	B0258-02AMS	MS	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-116	B0258-04A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-117	B0258-06A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-118	B0258-08A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-119	B0258-10A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-120	B0258-14A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
UG/L	FB-021203	B0258-13C	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FB-021203DUP	B0258-13CDUP	DUPLICATE	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
UG/L	FB-021203L	B0258-13CL	NORMAL	B0258	M	02/12/03	02/18/03	02/18/03	6	0	6
%	FB-021203MS	B0258-13CMS	MS	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
%	LCSS	0215LCSS	LCS	B0258	M	/ /	02/15/03	02/18/03	0	3	0
%	LCSW	0215LCSW	LCS	B0258	M	/ /	02/15/03	02/18/03	0	3	0
MG/KG	PBS	0215PBS	M_BLANK	B0258	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	PBW	0215PBW	M_BLANK	B0258	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	RB-021203	B0258-16C	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-115	B0258-02A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-115DUP	B0258-02ADUP	DUPLICATE	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
%	WOD-SS-115MS	B0258-02AMS	MS	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-116	B0258-04A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-117	B0258-06A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-118	B0258-08A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-119	B0258-10A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-120	B0258-14A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
UG/L	FB-021203	B0258-13D	NORMAL	B0258	OS	02/12/03	02/18/03	03/13/03	6	23	29
%	RB-021203	B0258-16D	NORMAL	B0258	OS	02/12/03	02/18/03	03/13/03	6	23	29
%	SBLK3N	MB-5802	M_BLANK	B0258	OS	/ /	02/26/03	03/13/03	0	15	0
%	SBLK3NLCS	LCS-5802	LCS	B0258	OS	/ /	02/26/03	03/13/03	0	15	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	SBLK3P	MB-5678	M_BLANK	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCS	LCS-5678	LCS	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCSD	LCSD-5678	LCSD	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	WOD-SS-115	B0258-02A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-116	B0258-04A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-117	B0258-06A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-118	B0258-08A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-119	B0258-10A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-120	B0258-14A	NORMAL	B0258	OS	02/12/03	02/26/03	03/15/03	14	17	31
%	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	OS	02/12/03	02/26/03	03/15/03	14	17	31
%	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406MS	B0258-15AMS	MS	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406MSD	B0258-15AMSD	MSD	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	FB-021203	B0258-13A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
%	RB-021203	B0258-16A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
UG/L	TB-021203	B0258-01A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
%	VBLK5X	V5B0215A	M_BLANK	B0258	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5XLCS	V5L0215A	LCS	B0258	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0258	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0258	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5Z	V5B0219A	M_BLANK	B0258	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCS	V5L0219A	LCS	B0258	OV	/ /	02/19/03	02/19/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5ZLCSD	V5L0219B	LCSD	B0258	OV	/ /	02/19/03	02/19/03	0	0	0
UG/L	VBLK6J	V6B0223A	M_BLANK	B0258	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK6JLCS	V6L0223A	LCS	B0258	OV	/ /	02/23/03	02/23/03	0	0	0
%	WOD-SS-115	B0258-02C	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
UG/KG	WOD-SS-116	B0258-04C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-116RE	B0258-04CRE	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-117	B0258-06C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-117RE	B0258-06CRE	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-118	B0258-08C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-119	B0258-10C	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SS-120	B0258-14C	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-120RE	B0258-14CRE	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-115-0305	B0258-03B	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SV-116-0204	B0258-05B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-117-0102	B0258-07B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-118-0406	B0258-09B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-119-0507	B0258-12B	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SV-120-0406	B0258-15B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-DUP06	B0258-11B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	BBLK1K	MB-5748	M_BLANK	B0258	PCB	/ /	02/21/03	02/25/03	0	4	0
%	BBLK1KLCS	LCS-5748	LCS	B0258	PCB	/ /	02/21/03	02/25/03	0	4	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	FB-021203	B0258-13D	NORMAL	B0258	PCB	02/12/03	02/18/03	02/23/03	6	5	11
%	RB-021203	B0258-16D	NORMAL	B0258	PCB	02/12/03	02/18/03	02/23/03	6	5	11
%	WOD-SS-115	B0258-02A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-116	B0258-04A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/25/03	9	4	13
%	WOD-SS-117	B0258-06A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-118	B0258-08A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-119	B0258-10A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-120	B0258-14A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-120-0406MS	B0258-15AMS	MS	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-120-0406MSD	B0258-15AMSD	MSD	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
S.U.	WOD-SS-115	B0258-02A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-116	B0258-04A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-117	B0258-06A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-118	B0258-08A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-119	B0258-10A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-120	B0258-14A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
MG/L	FB-021203	B0258-13B	NORMAL	B0258	TOC	02/12/03	02/28/03	02/28/03	16	0	16
%	LCS-6168	LCS-6168	LCS	B0258	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0258	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021203	B0258-16B	NORMAL	B0258	TOC	02/12/03	02/28/03	02/28/03	16	0	16

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0215A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3932

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/15/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	10	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3963 Lab Sample ID: V5B0217A

Date Analyzed: 02/17/03 Time Analyzed: 1214

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5YLCS	V5L0217A	V5E3964	1244
02	WOD-SS-115	B0258-02C	V5E3968	1445
03	SV1150305	B0258-03B	V5E3969	1514
04	WOD-SS-116RE	B0258-04CRE	V5E3970	1543
05	WOD-SS-117RE	B0258-06CRE	V5E3972	1642
06	SV1190507	B0258-12B	V5E3977	1907
07	WOD-SS-120	B0258-14C	V5E3978	1937
08				
09				
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	2	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	7	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3993 Lab Sample ID: V5B0219A

Date Analyzed: 02/19/03 Time Analyzed: 1707

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5ZLCS	V5L0219A	V5E3994	1736
02	V5ZLCSD	V5L0219B	V5E3995	1805
03	SV1160204	B0258-05B	V5E3996	1834
04	SV1170102	B0258-07B	V5E3997	1904
05	SV1180406	B0258-09B	V5E3998	1933
06	WOD-SS-119	B0258-10C	V5E3999	2002
07	SVDUP06	B0258-11B	V5E4000	2031
08	WOD-SS-120RE	B0258-14CRE	V5E4001	2100
09	SV1200406	B0258-15B	V5E4002	2130
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	10	NJ
2.					
3.					
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4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V6C5083 Lab Sample ID: V6B0223A

Date Analyzed: 02/23/03 Time Analyzed: 1022

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V6JLCS	V6L0223A	V6C5084	1053
02	TB-021203	B0258-01A	V6C5098	1739
03	FB-021203	B0258-13A	V6C5099	1807
04	RB-021203	B0258-16A	V6C5100	1836
05				
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COMMENTS:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: V6B0223A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5083

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6J

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: V6B0223A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5083

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3670 BFB Injection Date: 02/07/03

Instrument ID: V5 BFB Injection Time: 0942

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.6
75	30.0 - 60.0% of mass 95	48.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.7
175	5.0 - 9.0% of mass 174	5.9 (7.3)1
176	95.0 - 101.0% of mass 174	79.6 (97.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505K	V5S0207A	V5E3671	02/07/03	1037
02	VSTD2005K	V5S0207C	V5E3673	02/07/03	1147
03	VSTD1005K	V5S0207D	V5E3674	02/07/03	1216
04	VSTD0055K	V5S0207B	V5E3677	02/07/03	1434
05	VSTD0205K	V5S0207E	V5E3678	02/07/03	1509
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.275	0.287	0.289	0.277	0.259	0.277	4.3
Chloromethane	*	0.450	0.448	0.482	0.411	0.452	0.449	5.7*
Vinyl Chloride		0.391	0.415	0.428	0.409	0.406	0.410	3.3
Bromomethane		0.289	0.250	0.236	0.221	0.181	0.235	16.8
Chloroethane		0.208	0.219	0.224	0.205	0.175	0.206	9.1
Trichlorofluoromethane		0.284	0.343	0.354	0.368	0.337	0.337	9.4
1,1-Dichloroethene		0.275	0.293	0.288	0.296	0.290	0.288	2.9
Acetone		0.154	0.123	0.135	0.099	0.084	0.119	23.6
Carbon Disulfide		0.794	0.819	0.844	0.819	0.737	0.803	5.1
Methylene Chloride		0.370	0.416	0.394	0.376	0.364	0.384	5.5
trans-1,2-Dichloroethene		0.282	0.304	0.298	0.309	0.303	0.299	3.5
Methyl tert-butyl ether		0.790	0.850	0.843	0.931	0.816	0.846	6.3
1,1-Dichloroethane	*	0.559	0.590	0.590	0.608	0.607	0.591	3.3*
2-Butanone		0.153	0.183	0.191	0.178	0.155	0.172	9.9
cis-1,2-Dichloroethene		0.299	0.317	0.312	0.328	0.322	0.316	3.5
Chloroform		0.494	0.507	0.521	0.547	0.535	0.521	4.1
1,1,1-Trichloroethane		0.340	0.368	0.346	0.357	0.351	0.352	3.0
Carbon Tetrachloride		0.301	0.344	0.336	0.355	0.354	0.338	6.6
1,2-Dichloroethane		0.340	0.386	0.412	0.408	0.397	0.389	7.5
Benzene		1.203	1.223	1.222	1.294	1.262	1.241	3.0
Trichloroethene		0.298	0.319	0.311	0.336	0.330	0.319	4.7
1,2-Dichloropropane		0.313	0.333	0.347	0.351	0.337	0.336	4.4
Bromodichloromethane		0.338	0.372	0.418	0.417	0.412	0.391	9.1
cis-1,3-Dichloropropene		0.438	0.494	0.556	0.558	0.548	0.519	10.0
4-Methyl-2-pentanone		0.282	0.353	0.344	0.383	0.315	0.335	11.4
Toluene		1.139	1.195	1.208	1.254	1.236	1.206	3.7
trans-1,3-Dichloropropene		0.389	0.436	0.521	0.494	0.489	0.466	11.3
1,1,2-Trichloroethane		0.233	0.247	0.298	0.267	0.259	0.261	9.3
Tetrachloroethene		0.322	0.337	0.323	0.297	0.333	0.322	4.8
2-Hexanone		0.258	0.317	0.288	0.331	0.289	0.297	9.6
Dibromochloromethane		0.348	0.396	0.468	0.386	0.440	0.408	11.6
1,2-Dibromoethane		0.334	0.373	0.414	0.343	0.391	0.371	8.9
Chlorobenzene	*	1.048	1.072	1.176	0.957	1.104	1.071	7.5*
Ethylbenzene		0.509	0.533	0.565	0.490	0.551	0.530	5.7
m,p-Xylene		0.631	0.654	0.716	0.606	0.669	0.655	6.4
o-Xylene		0.595	0.646	0.718	0.603	0.671	0.647	7.8
Xylene (Total)		0.619	0.651	0.717	0.605	0.670	0.652	6.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.963	1.072	1.273	1.048	1.143	1.100	10.6
Bromoform	*	0.220	0.260	0.346	0.270	0.305	0.280	17.0*
Isopropylbenzene		1.491	1.591	1.801	1.522	1.707	1.622	8.0
1,1,2,2-Tetrachloroethane	*	1.001	1.076	1.337	0.835	1.016	1.053	17.3*
1,3,5-Trimethylbenzene		2.785	2.848	3.316	2.309	2.835	2.819	12.7
1,2,4-Trimethylbenzene		2.811	2.821	3.415	2.382	2.886	2.863	12.9
1,3-Dichlorobenzene		1.608	1.645	1.960	1.396	1.698	1.661	12.2
1,4-Dichlorobenzene		1.661	1.657	1.973	1.416	1.706	1.683	11.8
1,2-Dichlorobenzene		1.524	1.538	1.919	1.322	1.569	1.574	13.7
1,2-Dibromo-3-chloropropane		0.117	0.155	0.210	0.136	0.170	0.158	22.3
1,2,4-Trichlorobenzene		0.667	0.779	1.062	0.823	1.013	0.869	19.0
1,1,2-Trichlo-1,2,2-trifluor		0.211	0.283	0.249	0.251	0.216	0.242	12.1
Methyl Acetate		0.286	0.327	0.327	0.320	0.275	0.307	7.9
Cyclohexane		0.486	0.515	0.507	0.510	0.462	0.496	4.4
Methylcyclohexane		0.462	0.508	0.489	0.521	0.462	0.488	5.5
Dibromofluoromethane		0.278	0.289	0.273	0.313	0.298	0.290	5.4
1,2-Dichloroethane-d4		0.048	0.061	0.057	0.065	0.061	0.058	10.7
Toluene-d8		1.208	1.229	1.117	1.133	1.253	1.188	5.0
Bromofluorobenzene		0.479	0.503	0.465	0.481	0.523	0.490	4.7

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3930 BFB Injection Date: 02/15/03

Instrument ID: V5 BFB Injection Time: 0931

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.2
75	30.0 - 60.0% of mass 95	46.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	83.9
175	5.0 - 9.0% of mass 174	5.6 (6.7)1
176	95.0 - 101.0% of mass 174	81.4 (97.0)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505X	V5S0215A	V5E3931	02/15/03	0948
02	VBLK5X	V5B0215A	V5E3932	02/15/03	1021
03	V5XLCS	V5L0215A	V5E3933	02/15/03	1057
04	WOD-SS-116	B0258-04C	V5E3950	02/15/03	1929
05	WOD-SS-117	B0258-06C	V5E3952	02/15/03	2028
06	WOD-SS-118	B0258-08C	V5E3954	02/15/03	2126
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/15/03 Time: 0948

Lab File ID: V5E3931 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.247	0.01	10.8	20.0
Chloromethane	0.449	0.437	0.1	2.7	20.0
Vinyl Chloride	0.410	0.408	0.01	0.5	20.0
Bromomethane	0.235	0.241	0.01	2.6	20.0
Chloroethane	0.206	0.221	0.01	7.3	20.0
Trichlorofluoromethane	0.337	0.355	0.01	5.3	20.0
1,1-Dichloroethene	0.288	0.268	0.01	6.9	20.0
Acetone	0.119	0.110	0.01	7.6	20.0
Carbon Disulfide	0.803	0.827	0.01	3.0	20.0
Methylene Chloride	0.384	0.341	0.01	11.2	20.0
trans-1,2-Dichloroethene	0.299	0.274	0.01	8.4	20.0
Methyl tert-butyl ether	0.846	0.840	0.01	0.7	20.0
1,1-Dichloroethane	0.591	0.536	0.1	9.3	20.0
2-Butanone	0.172	0.163	0.01	5.2	20.0
cis-1,2-Dichloroethene	0.316	0.292	0.01	7.6	20.0
Chloroform	0.521	0.477	0.01	8.4	20.0
1,1,1-Trichloroethane	0.352	0.303	0.01	13.9	20.0
Carbon Tetrachloride	0.338	0.291	0.01	13.9	20.0
1,2-Dichloroethane	0.389	0.357	0.01	8.2	20.0
Benzene	1.241	1.132	0.01	8.8	20.0
Trichloroethene	0.319	0.285	0.01	10.6	20.0
1,2-Dichloropropane	0.336	0.314	0.01	6.5	20.0
Bromodichloromethane	0.391	0.360	0.01	7.9	20.0
cis-1,3-Dichloropropene	0.519	0.486	0.01	6.4	20.0
4-Methyl-2-pentanone	0.335	0.317	0.01	5.4	20.0
Toluene	1.206	1.109	0.01	8.0	20.0
trans-1,3-Dichloropropene	0.466	0.430	0.01	7.7	20.0
1,1,2-Trichloroethane	0.261	0.236	0.01	9.6	20.0
Tetrachloroethene	0.322	0.273	0.01	15.2	20.0
2-Hexanone	0.297	0.296	0.01	0.3	20.0
Dibromochloromethane	0.408	0.383	0.01	6.1	20.0
1,2-Dibromoethane	0.371	0.347	0.01	6.5	20.0
Chlorobenzene	1.071	0.987	0.3	7.8	20.0
Ethylbenzene	0.530	0.488	0.01	7.9	20.0
m,p-Xylene	0.655	0.609	0.01	7.0	20.0
o-Xylene	0.647	0.611	0.01	5.6	20.0
Xylene (Total)	0.652	0.610	0.01	6.4	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/15/03 Time: 0948

Lab File ID: V5E3931 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.054	0.01	4.2	20.0
Bromoform	0.280	0.260	0.1	7.1	20.0
Isopropylbenzene	1.622	1.484	0.01	8.5	20.0
1,1,2,2-Tetrachloroethane	1.053	0.953	0.3	9.5	20.0
1,3,5-Trimethylbenzene	2.819	2.613	0.01	7.3	20.0
1,2,4-Trimethylbenzene	2.863	2.697	0.01	5.8	20.0
1,3-Dichlorobenzene	1.661	1.561	0.01	6.0	20.0
1,4-Dichlorobenzene	1.683	1.573	0.01	6.5	20.0
1,2-Dichlorobenzene	1.574	1.489	0.01	5.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.143	0.01	9.5	20.0
1,2,4-Trichlorobenzene	0.869	0.852	0.01	2.0	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.252	0.01	4.1	20.0
Methyl Acetate	0.307	0.296	0.01	3.6	20.0
Cyclohexane	0.496	0.488	0.01	1.6	20.0
Methylcyclohexane	0.488	0.478	0.01	2.0	20.0
Dibromofluoromethane	0.290	0.293	0.01	1.0	20.0
1,2-Dichloroethane-d4	0.058	0.061	0.01	5.2	20.0
Toluene-d8	1.188	1.191	0.01	0.2	20.0
Bromofluorobenzene	0.490	0.500	0.01	2.0	20.0

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3960 BFB Injection Date: 02/17/03

Instrument ID: V5 BFB Injection Time: 1055

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.7
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.5 (6.9)1
176	95.0 - 101.0% of mass 174	76.5 (95.2)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505Y	V5S0217A	V5E3962	02/17/03	1144
02	VBLK5Y	V5B0217A	V5E3963	02/17/03	1214
03	V5YLCS	V5L0217A	V5E3964	02/17/03	1244
04	WOD-SS-115	B0258-02C	V5E3968	02/17/03	1445
05	SV1150305	B0258-03B	V5E3969	02/17/03	1514
06	WOD-SS-116RE	B0258-04CRE	V5E3970	02/17/03	1543
07	WOD-SS-117RE	B0258-06CRE	V5E3972	02/17/03	1642
08	SV1190507	B0258-12B	V5E3977	02/17/03	1907
09	WOD-SS-120	B0258-14C	V5E3978	02/17/03	1937
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.223	0.01	19.5	20.0
Chloromethane	0.449	0.392	0.1	12.7	20.0
Vinyl Chloride	0.410	0.376	0.01	8.3	20.0
Bromomethane	0.235	0.215	0.01	8.5	20.0
Chloroethane	0.206	0.202	0.01	1.9	20.0
Trichlorofluoromethane	0.337	0.332	0.01	1.5	20.0
1,1-Dichloroethene	0.288	0.243	0.01	15.6	20.0
Acetone	0.119	0.106	0.01	10.9	20.0
Carbon Disulfide	0.803	0.770	0.01	4.1	20.0
Methylene Chloride	0.384	0.313	0.01	18.5	20.0
trans-1,2-Dichloroethene	0.299	0.258	0.01	13.7	20.0
Methyl tert-butyl ether	0.846	0.856	0.01	1.2	20.0
1,1-Dichloroethane	0.591	0.500	0.1	15.4	20.0
2-Butanone	0.172	0.174	0.01	1.2	20.0
cis-1,2-Dichloroethene	0.316	0.275	0.01	13.0	20.0
Chloroform	0.521	0.440	0.01	15.5	20.0
1,1,1-Trichloroethane	0.352	0.291	0.01	17.3	20.0
Carbon Tetrachloride	0.338	0.280	0.01	17.2	20.0
1,2-Dichloroethane	0.389	0.333	0.01	14.4	20.0
Benzene	1.241	1.060	0.01	14.6	20.0
Trichloroethene	0.319	0.273	0.01	14.4	20.0
1,2-Dichloropropane	0.336	0.293	0.01	12.8	20.0
Bromodichloromethane	0.391	0.339	0.01	13.3	20.0
cis-1,3-Dichloropropene	0.519	0.461	0.01	11.2	20.0
4-Methyl-2-pentanone	0.335	0.351	0.01	4.8	20.0
Toluene	1.206	1.034	0.01	14.3	20.0
trans-1,3-Dichloropropene	0.466	0.408	0.01	12.4	20.0
1,1,2-Trichloroethane	0.261	0.227	0.01	13.0	20.0
Tetrachloroethene	0.322	0.276	0.01	14.3	20.0
2-Hexanone	0.297	0.340	0.01	14.5	20.0
Dibromochloromethane	0.408	0.382	0.01	6.4	20.0
1,2-Dibromoethane	0.371	0.342	0.01	7.8	20.0
Chlorobenzene	1.071	0.964	0.3	10.0	20.0
Ethylbenzene	0.530	0.475	0.01	10.4	20.0
m,p-Xylene	0.655	0.592	0.01	9.6	20.0
o-Xylene	0.647	0.578	0.01	10.7	20.0
Xylene (Total)	0.652	0.587	0.01	10.0	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	0.987	0.01	10.3	20.0
Bromoform	0.280	0.264	0.1	5.7	20.0
Isopropylbenzene	1.622	1.423	0.01	12.3	20.0
1,1,2,2-Tetrachloroethane	1.053	0.941	0.3	10.6	20.0
1,3,5-Trimethylbenzene	2.819	2.381	0.01	15.5	20.0
1,2,4-Trimethylbenzene	2.863	2.448	0.01	14.5	20.0
1,3-Dichlorobenzene	1.661	1.445	0.01	13.0	20.0
1,4-Dichlorobenzene	1.683	1.450	0.01	13.8	20.0
1,2-Dichlorobenzene	1.574	1.364	0.01	13.3	20.0
1,2-Dibromo-3-chloropropane	0.158	0.136	0.01	13.9	20.0
1,2,4-Trichlorobenzene	0.869	0.728	0.01	16.2	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.232	0.01	4.1	20.0
Methyl Acetate	0.307	0.318	0.01	3.6	20.0
Cyclohexane	0.496	0.458	0.01	7.7	20.0
Methylcyclohexane	0.488	0.480	0.01	1.6	20.0
Dibromofluoromethane	0.290	0.283	0.01	2.4	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.01	3.4	20.0
Toluene-d8	1.188	1.192	0.01	0.3	20.0
Bromofluorobenzene	0.490	0.491	0.01	0.2	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V5E3990 BFB Injection Date: 02/19/03

Instrument ID: V5 BFB Injection Time: 1537

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	45.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.8
175	5.0 - 9.0% of mass 174	5.5 (6.8)1
176	95.0 - 101.0% of mass 174	78.9 (97.6)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505Z	V5S0219A	V5E3992	02/19/03	1637
02	VBLK5Z	V5B0219A	V5E3993	02/19/03	1707
03	V5ZLCS	V5L0219A	V5E3994	02/19/03	1736
04	V5ZLCSD	V5L0219B	V5E3995	02/19/03	1805
05	SV1160204	B0258-05B	V5E3996	02/19/03	1834
06	SV1170102	B0258-07B	V5E3997	02/19/03	1904
07	SV1180406	B0258-09B	V5E3998	02/19/03	1933
08	WOD-SS-119	B0258-10C	V5E3999	02/19/03	2002
09	SVDUP06	B0258-11B	V5E4000	02/19/03	2031
10	WOD-SS-120RE	B0258-14CRE	V5E4001	02/19/03	2100
11	SV1200406	B0258-15B	V5E4002	02/19/03	2130
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/19/03 Time: 1637

Lab File ID: V5E3992 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.277	0.219	0.01	20.9	20.0	<-
Chloromethane	0.449	0.369	0.1	17.8	20.0	
Vinyl Chloride	0.410	0.363	0.01	11.5	20.0	
Bromomethane	0.235	0.209	0.01	11.1	20.0	
Chloroethane	0.206	0.187	0.01	9.2	20.0	
Trichlorofluoromethane	0.337	0.313	0.01	7.1	20.0	
1,1-Dichloroethene	0.288	0.254	0.01	11.8	20.0	
Acetone	0.119	0.098	0.01	17.6	20.0	
Carbon Disulfide	0.803	0.746	0.01	7.1	20.0	
Methylene Chloride	0.384	0.364	0.01	5.2	20.0	
trans-1,2-Dichloroethene	0.299	0.270	0.01	9.7	20.0	
Methyl tert-butyl ether	0.846	0.827	0.01	2.2	20.0	
1,1-Dichloroethane	0.591	0.526	0.1	11.0	20.0	
2-Butanone	0.172	0.178	0.01	3.5	20.0	
cis-1,2-Dichloroethene	0.316	0.288	0.01	8.9	20.0	
Chloroform	0.521	0.467	0.01	10.4	20.0	
1,1,1-Trichloroethane	0.352	0.311	0.01	11.6	20.0	
Carbon Tetrachloride	0.338	0.303	0.01	10.4	20.0	
1,2-Dichloroethane	0.389	0.346	0.01	11.0	20.0	
Benzene	1.241	1.116	0.01	10.1	20.0	
Trichloroethene	0.319	0.288	0.01	9.7	20.0	
1,2-Dichloropropane	0.336	0.301	0.01	10.4	20.0	
Bromodichloromethane	0.391	0.350	0.01	10.5	20.0	
cis-1,3-Dichloropropene	0.519	0.474	0.01	8.7	20.0	
4-Methyl-2-pentanone	0.335	0.343	0.01	2.4	20.0	
Toluene	1.206	1.100	0.01	8.8	20.0	
trans-1,3-Dichloropropene	0.466	0.420	0.01	9.9	20.0	
1,1,2-Trichloroethane	0.261	0.230	0.01	11.9	20.0	
Tetrachloroethene	0.322	0.298	0.01	7.4	20.0	
2-Hexanone	0.297	0.337	0.01	13.5	20.0	
Dibromochloromethane	0.408	0.386	0.01	5.4	20.0	
1,2-Dibromoethane	0.371	0.352	0.01	5.1	20.0	
Chlorobenzene	1.071	1.013	0.3	5.4	20.0	
Ethylbenzene	0.530	0.504	0.01	4.9	20.0	
m,p-Xylene	0.655	0.628	0.01	4.1	20.0	
o-Xylene	0.647	0.603	0.01	6.8	20.0	
Xylene (Total)	0.652	0.620	0.01	4.9	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V5 Calibration Date: 02/19/03 Time: 1637

Lab File ID: V5E3992 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.037	0.01	5.7	20.0
Bromoform	0.280	0.268	0.1	4.3	20.0
Isopropylbenzene	1.622	1.521	0.01	6.2	20.0
1,1,2,2-Tetrachloroethane	1.053	1.019	0.3	3.2	20.0
1,3,5-Trimethylbenzene	2.819	2.666	0.01	5.4	20.0
1,2,4-Trimethylbenzene	2.863	2.707	0.01	5.4	20.0
1,3-Dichlorobenzene	1.661	1.584	0.01	4.6	20.0
1,4-Dichlorobenzene	1.683	1.584	0.01	5.9	20.0
1,2-Dichlorobenzene	1.574	1.489	0.01	5.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.151	0.01	4.4	20.0
1,2,4-Trichlorobenzene	0.869	0.810	0.01	6.8	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.219	0.01	9.5	20.0
Methyl Acetate	0.307	0.305	0.01	0.6	20.0
Cyclohexane	0.496	0.458	0.01	7.7	20.0
Methylcyclohexane	0.488	0.467	0.01	4.3	20.0
Dibromofluoromethane	0.290	0.274	0.01	5.5	20.0
1,2-Dichloroethane-d4	0.058	0.058	0.01	0.0	20.0
Toluene-d8	1.188	1.192	0.01	0.3	20.0
Bromofluorobenzene	0.490	0.474	0.01	3.3	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V6C5020 BFB Injection Date: 02/20/03

Instrument ID: V6 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	6.8 (6.9)1
176	95.0 - 101.0% of mass 174	97.3 (99.7)1
177	5.0 - 9.0% of mass 176	7.6 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506H	V6S0220A	V6C5021	02/20/03	0952
02	VSTD0056H	V6S0220B	V6C5022	02/20/03	1042
03	VSTD2006H	V6S0220D	V6C5024	02/20/03	1141
04	VSTD1006H	V6S0220E	V6C5025	02/20/03	1212
05	VSTD0206H	V6S0220F	V6C5026	02/20/03	1242
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.954	1.080	1.091	1.074	1.061	1.052	5.3
Bromoform	*	0.213	0.231	0.257	0.231	0.229	0.232	6.8*
Isopropylbenzene		1.532	1.587	1.452	1.479	1.396	1.489	4.9
1,1,2,2-Tetrachloroethane	*	0.549	0.600	0.643	0.553	0.542	0.577	7.5*
1,3,5-Trimethylbenzene		2.373	2.532	2.271	2.375	2.311	2.372	4.2
1,2,4-Trimethylbenzene		2.470	2.594	2.412	2.400	2.316	2.438	4.2
1,3-Dichlorobenzene		1.469	1.567	1.477	1.493	1.482	1.498	2.7
1,4-Dichlorobenzene		1.583	1.616	1.529	1.504	1.461	1.539	4.0
1,2-Dichlorobenzene		1.360	1.468	1.427	1.398	1.381	1.407	3.0
1,2-Dibromo-3-chloropropane		0.106	0.096	0.116	0.092	0.088	0.100	11.1
1,2,4-Trichlorobenzene		0.957	0.967	0.925	0.901	0.912	0.932	3.1
1,1,2-Trichlo-1,2,2-trifluor		0.467	0.504	0.378	0.451	0.423	0.445	10.6
Methyl Acetate		0.194	0.197	0.202	0.167	0.155	0.183	11.3
Cyclohexane		0.415	0.407	0.362	0.411	0.402	0.399	5.4
Methylcyclohexane		0.448	0.458	0.424	0.468	0.465	0.453	3.9
Dibromofluoromethane		0.204	0.266	0.277	0.271	0.262	0.256	11.6
1,2-Dichloroethane-d4		0.047	0.060	0.065	0.058	0.057	0.057	11.1
Toluene-d8		0.916	1.191	1.162	1.179	1.055	1.101	10.6
Bromofluorobenzene		0.345	0.421	0.444	0.432	0.413	0.411	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: V6C5080 BFB Injection Date: 02/23/03

Instrument ID: V6 BFB Injection Time: 0904

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.2
75	30.0 - 60.0% of mass 95	57.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	92.0
175	5.0 - 9.0% of mass 174	6.2 (6.7)1
176	95.0 - 101.0% of mass 174	89.9 (97.7)1
177	5.0 - 9.0% of mass 176	5.3 (5.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506J	V6S0223A	V6C5082	02/23/03	0951
02	VBLK6J	V6B0223A	V6C5083	02/23/03	1022
03	V6JLCS	V6L0223A	V6C5084	02/23/03	1053
04	TB-021203	B0258-01A	V6C5098	02/23/03	1739
05	FB-021203	B0258-13A	V6C5099	02/23/03	1807
06	RB-021203	B0258-16A	V6C5100	02/23/03	1836
07					
08					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V6 Calibration Date: 02/23/03 Time: 0951

Lab File ID: V6C5082 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.215	0.270	0.01	25.6	20.0	<-
Chloromethane	0.393	0.405	0.1	3.0	20.0	
Vinyl Chloride	0.432	0.452	0.01	4.6	20.0	
Bromomethane	0.380	0.403	0.01	6.0	20.0	
Chloroethane	0.295	0.329	0.01	11.5	20.0	
Trichlorofluoromethane	0.658	0.728	0.01	10.6	20.0	
1,1-Dichloroethene	0.440	0.428	0.01	2.7	20.0	
Acetone	0.099	0.072	0.01	27.3	20.0	<-
Carbon Disulfide	0.762	0.843	0.01	10.6	20.0	
Methylene Chloride	0.276	0.268	0.01	2.9	20.0	
trans-1,2-Dichloroethene	0.279	0.279	0.01	0.0	20.0	
Methyl tert-butyl ether	0.755	0.659	0.01	12.7	20.0	
1,1-Dichloroethane	0.456	0.490	0.1	7.4	20.0	
2-Butanone	0.088	0.073	0.01	17.0	20.0	
cis-1,2-Dichloroethene	0.289	0.293	0.01	1.4	20.0	
Chloroform	0.489	0.509	0.01	4.1	20.0	
1,1,1-Trichloroethane	0.387	0.415	0.01	7.2	20.0	
Carbon Tetrachloride	0.401	0.423	0.01	5.5	20.0	
1,2-Dichloroethane	0.376	0.367	0.01	2.4	20.0	
Benzene	1.025	1.093	0.01	6.6	20.0	
Trichloroethene	0.296	0.298	0.01	0.7	20.0	
1,2-Dichloropropane	0.257	0.265	0.01	3.1	20.0	
Bromodichloromethane	0.371	0.373	0.01	0.5	20.0	
cis-1,3-Dichloropropene	0.423	0.424	0.01	0.2	20.0	
4-Methyl-2-pentanone	0.167	0.143	0.01	14.4	20.0	
Toluene	1.113	1.189	0.01	6.8	20.0	
trans-1,3-Dichloropropene	0.382	0.369	0.01	3.4	20.0	
1,1,2-Trichloroethane	0.215	0.204	0.01	5.1	20.0	
Tetrachloroethene	0.317	0.323	0.01	1.9	20.0	
2-Hexanone	0.136	0.117	0.01	14.0	20.0	
Dibromochloromethane	0.355	0.328	0.01	7.6	20.0	
1,2-Dibromoethane	0.282	0.256	0.01	9.2	20.0	
Chlorobenzene	0.979	1.005	0.3	2.6	20.0	
Ethylbenzene	0.509	0.536	0.01	5.3	20.0	
m,p-Xylene	0.638	0.680	0.01	6.6	20.0	
o-Xylene	0.640	0.669	0.01	4.5	20.0	
Xylene (Total)	0.639	0.677	0.01	5.9	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: V6 Calibration Date: 02/23/03 Time: 0951

Lab File ID: V6C5082 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.052	1.134	0.01	7.8	20.0	
Bromoform	0.232	0.198	0.1	14.6	20.0	
Isopropylbenzene	1.489	1.624	0.01	9.1	20.0	
1,1,2,2-Tetrachloroethane	0.577	0.509	0.3	11.8	20.0	
1,3,5-Trimethylbenzene	2.372	2.558	0.01	7.8	20.0	
1,2,4-Trimethylbenzene	2.438	2.610	0.01	7.0	20.0	
1,3-Dichlorobenzene	1.498	1.540	0.01	2.8	20.0	
1,4-Dichlorobenzene	1.539	1.581	0.01	2.7	20.0	
1,2-Dichlorobenzene	1.407	1.409	0.01	0.1	20.0	
1,2-Dibromo-3-chloropropane	0.100	0.074	0.01	26.0	20.0	<-
1,2,4-Trichlorobenzene	0.932	0.842	0.01	9.6	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.445	0.483	0.01	8.5	20.0	
Methyl Acetate	0.183	0.150	0.01	18.0	20.0	
Cyclohexane	0.399	0.471	0.01	18.0	20.0	
Methylcyclohexane	0.453	0.507	0.01	11.9	20.0	
Dibromofluoromethane	0.256	0.265	0.01	3.5	20.0	
1,2-Dichloroethane-d4	0.057	0.055	0.01	3.5	20.0	
Toluene-d8	1.101	1.235	0.01	12.2	20.0	
Bromofluorobenzene	0.411	0.424	0.01	3.2	20.0	

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK6J	96	90	106	97	0
02	V6JLCS	106	98	110	102	0
03	TB-021203	93	89	106	91	0
04	FB-021203	95	88	106	90	0
05	RB-021203	95	88	106	90	0
06						
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27						
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29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER (BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5X	95	101	96	93	0
02	V5XLCS	96	99	98	97	0
03	WOD-SS-116	134*	149*	164*	59	3
04	WOD-SS-117	122	127*	162*	56	2
05	WOD-SS-118	103	118	102	87	0
06	VBLK5Y	97	100	100	91	0
07	V5YLCS	96	103	101	101	0
08	WOD-SS-115	105	119	105	86	0
09	SV1150305	101	114	100	94	0
10	WOD-SS-116RE	122	141*	135	64	1
11	WOD-SS-117RE	173*	185*	182*	56	3
12	SV1190507	109	123	105	99	0
13	WOD-SS-120	118	132*	142	68	1
14	VBLK5Z	96	101	101	92	0
15	V5ZLCS	99	104	103	100	0
16	V5ZLCSD	97	100	101	98	0
17	SV1160204	100	115	100	96	0
18	SV1170102	106	122	112	84	0
19	SV1180406	101	113	100	98	0
20	WOD-SS-119	102	115	105	93	0
21	SVDUP06	104	121	100	95	0
22	WOD-SS-120RE	117	136*	134	68	1
23	SV1200406	105	122	103	100	0
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER(BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V6JLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		58	116	48-135
Chloromethane	50		52	104	60-118
Vinyl Chloride	50		51	102	65-113
Bromomethane	50		53	106	73-122
Chloroethane	50		55	110	72-118
Trichlorofluoromethane	50		52	104	68-129
1,1-Dichloroethene	50		48	96	67-121
Acetone	50		47	94	38-161
Carbon Disulfide	50		54	108	53-137
Methylene Chloride	50		54	108	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		44	88	75-123
1,1-Dichloroethane	50		53	106	83-116
2-Butanone	50		44	88	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		53	106	89-118
1,1,1-Trichloroethane	50		53	106	81-122
Carbon Tetrachloride	50		51	102	79-125
1,2-Dichloroethane	50		50	100	83-123
Benzene	50		54	108	81-120
Trichloroethene	50		51	102	77-121
1,2-Dichloropropane	50		53	106	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		50	100	78-119
4-Methyl-2-pentanone	50		45	90	57-138
Toluene	50		54	108	81-121
trans-1,3-Dichloroprope	50		48	96	85-118
1,1,2-Trichloroethane	50		49	98	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V6JLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		49	98	73-121
2-Hexanone	50		44	88	53-145
Dibromochloromethane	50		46	92	80-124
1,2-Dibromoethane	50		45	90	80-124
Chlorobenzene	50		50	100	82-118
Ethylbenzene	50		51	102	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		52	104	77-128
Bromoform	50		44	88	77-130
Isopropylbenzene	50		53	106	58-148
1,1,2,2-Tetrachloroetha	50		45	90	76-125
1,3,5-Trimethylbenzene	50		54	108	76-116
1,2,4-Trimethylbenzene	50		53	106	77-117
1,3-Dichlorobenzene	50		51	102	80-116
1,4-Dichlorobenzene	50		51	102	80-114
1,2-Dichlorobenzene	50		50	100	81-116
1,2-Dibromo-3-chloropro	50		40	80	71-126
1,2,4-Trichlorobenzene	50		45	90	67-114
1,1,2-Trichlo-1,2,2-tri	50		54	108	70-130
Methyl Acetate	50		44	88	70-130
Cyclohexane	50		57	114	70-130
Methylcyclohexane	50		55	110	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5XLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		46	92	58-131
Chloromethane	50		47	94	63-120
Vinyl Chloride	50		49	98	61-134
Bromomethane	50		49	98	10-215
Chloroethane	50		51	102	55-146
Trichlorofluoromethane	50		50	100	63-126
1,1-Dichloroethene	50		48	96	67-127
Acetone	50		45	90	0-154
Carbon Disulfide	50		51	102	63-126
Methylene Chloride	50		46	92	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		51	102	52-130
1,1-Dichloroethane	50		47	94	74-118
2-Butanone	50		53	106	14-154
cis-1,2-Dichloroethene	50		48	96	83-115
Chloroform	50		46	92	77-120
1,1,1-Trichloroethane	50		45	90	72-126
Carbon Tetrachloride	50		47	94	69-135
1,2-Dichloroethane	50		47	94	65-126
Benzene	50		47	94	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		48	96	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		51	102	45-141
Toluene	50		47	94	80-126
trans-1,3-Dichloroprope	50		48	96	73-123
1,1,2-Trichloroethane	50		47	94	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5XLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		47	94	65-134
2-Hexanone	50		55	110	37-136
Dibromochloromethane	50		49	98	76-115
1,2-Dibromoethane	50		50	100	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		49	98	67-126
Isopropylbenzene	50		48	96	80-135
1,1,2,2-Tetrachloroetha	50		50	100	70-117
1,3,5-Trimethylbenzene	50		48	96	72-133
1,2,4-Trimethylbenzene	50		48	96	73-126
1,3-Dichlorobenzene	50		49	98	75-115
1,4-Dichlorobenzene	50		48	96	72-110
1,2-Dichlorobenzene	50		48	96	78-113
1,2-Dibromo-3-chloropro	50		53	106	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		55	110	70-130
Cyclohexane	50		49	98	70-130
Methylcyclohexane	50		51	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		44	88	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		46	92	67-127
Acetone	50		41	82	0-154
Carbon Disulfide	50		48	96	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		49	98	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		49	98	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		43	86	72-126
Carbon Tetrachloride	50		45	90	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		46	92	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		52	104	37-136
Dibromochloromethane	50		49	98	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		49	98	67-126
Isopropylbenzene	50		47	94	80-135
1,1,2,2-Tetrachloroetha	50		49	98	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		49	98	52-128
1,2,4-Trichlorobenzene	50		49	98	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		50	100	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		48	96	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		43	86	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		44	88	67-127
Acetone	50		43	86	0-154
Carbon Disulfide	50		48	96	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		52	104	52-130
1,1-Dichloroethane	50		46	92	74-118
2-Butanone	50		53	106	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		46	92	77-120
1,1,1-Trichloroethane	50		45	90	72-126
Carbon Tetrachloride	50		46	92	69-135
1,2-Dichloroethane	50		46	92	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		47	94	78-117
Bromodichloromethane	50		47	94	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		54	108	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		47	94	73-123
1,1,2-Trichloroethane	50		46	92	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		56	112	37-136
Dibromochloromethane	50		48	96	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		50	100	67-126
Isopropylbenzene	50		47	94	80-135
1,1,2,2-Tetrachloroetha	50		50	100	70-117
1,3,5-Trimethylbenzene	50		47	94	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		49	98	78-113
1,2-Dibromo-3-chloropro	50		51	102	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		55	110	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		50	100	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	41	82	2	40	58-131
Chloromethane	50	43	86	0	40	63-120
Vinyl Chloride	50	46	92	0	40	61-134
Bromomethane	50	47	94	2	40	10-215
Chloroethane	50	47	94	0	40	55-146
Trichlorofluoromethane	50	48	96	0	40	63-126
1,1-Dichloroethene	50	45	90	2	40	67-127
Acetone	50	40	80	7	40	0-154
Carbon Disulfide	50	47	94	2	40	63-126
Methylene Chloride	50	46	92	2	40	62-128
trans-1,2-Dichloroethen	50	46	92	0	40	76-120
Methyl tert-butyl ether	50	50	100	4	40	52-130
1,1-Dichloroethane	50	45	90	2	40	74-118
2-Butanone	50	49	98	8	40	14-154
cis-1,2-Dichloroethene	50	46	92	0	40	83-115
Chloroform	50	45	90	2	40	77-120
1,1,1-Trichloroethane	50	45	90	0	40	72-126
Carbon Tetrachloride	50	46	92	0	40	69-135
1,2-Dichloroethane	50	45	90	2	40	65-126
Benzene	50	47	94	2	40	78-121
Trichloroethene	50	47	94	2	40	75-125
1,2-Dichloropropane	50	46	92	2	40	78-117
Bromodichloromethane	50	46	92	2	40	75-118
cis-1,3-Dichloropropene	50	46	92	2	40	78-120
4-Methyl-2-pentanone	50	50	100	8	40	45-141
Toluene	50	46	92	0	40	80-126
trans-1,3-Dichloroprope	50	45	90	4	40	73-123
1,1,2-Trichloroethane	50	44	88	4	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

0196

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	46	92	0	40	65-134
2-Hexanone	50	55	110	2	40	37-136
Dibromochloromethane	50	47	94	2	40	76-115
1,2-Dibromoethane	50	48	96	2	40	72-117
Chlorobenzene	50	47	94	2	40	78-117
Ethylbenzene	50	48	96	0	40	79-129
Xylene (Total)	150	140	93	0	40	83-125
Styrene	50	47	94	4	40	83-122
Bromoform	50	48	96	4	40	67-126
Isopropylbenzene	50	47	94	0	40	80-135
1,1,2,2-Tetrachloroetha	50	48	96	4	40	70-117
1,3,5-Trimethylbenzene	50	48	96	2	40	72-133
1,2,4-Trimethylbenzene	50	48	96	2	40	73-126
1,3-Dichlorobenzene	50	49	98	2	40	75-115
1,4-Dichlorobenzene	50	48	96	2	40	72-110
1,2-Dichlorobenzene	50	49	98	0	40	78-113
1,2-Dibromo-3-chloropro	50	50	100	2	40	52-128
1,2,4-Trichlorobenzene	50	48	96	0	40	49-126
1,1,2-Trichlo-1,2,2-tri	50	47	94	4	40	70-130
Methyl Acetate	50	51	102	8	40	70-130
Cyclohexane	50	47	94	2	40	70-130
Methylcyclohexane	50	50	100	0	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): V6C5082 Date Analyzed: 02/23/03

Instrument ID: V6 Time Analyzed: 0951

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1484309	7.03	1187394	10.77	662084	13.59
	UPPER LIMIT	2968618	7.53	2374788	11.27	1324168	14.09
	LOWER LIMIT	742155	6.53	593697	10.27	331042	13.09
	EPA SAMPLE NO.						
01	VBLK6J	1542095	7.03	1191383	10.77	624209	13.59
02	V6JLCS	1373186	7.03	1115756	10.77	610038	13.59
03	TB-021203	1268845	7.03	986838	10.77	513837	13.59
04	FB-021203	1240395	7.03	965406	10.77	499259	13.59
05	RB-021203	1222672	7.03	960628	10.77	490204	13.59
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IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): V5E3931 Date Analyzed: 02/15/03

Instrument ID: V5 Time Analyzed: 0948

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	917665	6.25	711077	9.47	374227	12.21
	UPPER LIMIT	1835330	6.75	1422154	9.97	748454	12.71
	LOWER LIMIT	458833	5.75	355539	8.97	187114	11.71
	EPA SAMPLE NO.						
01	VBLK5X	974217	6.25	750903	9.47	347587	12.22
02	V5XLCS	835906	6.25	631839	9.47	325453	12.21
03	WOD-SS-116	471228	6.25	189814*	9.47	30017*	12.22
04	WOD-SS-117	193728*	6.26	76013*	9.47	11600*	12.21
05	WOD-SS-118	837575	6.25	597904	9.47	216198	12.21
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22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): V5E3962 Date Analyzed: 02/17/03

Instrument ID: V5 Time Analyzed: 1144

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	957125	6.25	718869	9.47	378053	12.21
	UPPER LIMIT	1914250	6.75	1437738	9.97	756106	12.71
	LOWER LIMIT	478563	5.75	359435	8.97	189027	11.71
	EPA SAMPLE NO.						
01	VBLK5Y	925512	6.25	703213	9.47	304493	12.22
02	V5YLCS	903742	6.25	674995	9.47	351616	12.21
03	WOD-SS-115	890929	6.25	635775	9.48	216397	12.21
04	SV1150305	540723	6.25	414604	9.47	172251*	12.22
05	WOD-SS-116RE	537428	6.25	252566*	9.47	48773*	12.22
06	WOD-SS-117RE	63062*	6.25	32892*	9.47	6303*	12.21
07	SV1190507	831671	6.26	629036	9.47	265855	12.21
08	WOD-SS-120	504740	6.25	227235*	9.47	48795*	12.21
09							
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20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): V5E3992 Date Analyzed: 02/19/03

Instrument ID: V5 Time Analyzed: 1637

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	888715	6.25	665021	9.47	339123	12.22
	UPPER LIMIT	1777430	6.75	1330042	9.97	678246	12.72
	LOWER LIMIT	444358	5.75	332511	8.97	169562	11.72
	EPA SAMPLE NO.						
01	VBLK5Z	895897	6.25	680818	9.47	296689	12.22
02	V5ZLCS	824972	6.25	623776	9.47	321059	12.22
03	V5ZLCSD	839863	6.25	635094	9.47	321703	12.21
04	SV1160204	917797	6.25	711622	9.47	322142	12.22
05	SV1170102	802674	6.26	540110	9.48	173445	12.21
06	SV1180406	895084	6.25	686366	9.47	301058	12.22
07	WOD-SS-119	893377	6.25	647498	9.47	253908	12.21
08	SVDUP06	839345	6.26	653670	9.48	284410	12.22
09	WOD-SS-120RE	525710	6.26	264193*	9.48	53675*	12.21
10	SV1200406	843832	6.25	652363	9.47	288258	12.22
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13							
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17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030217.B\V5E3978.D
Report Date: 08-Mar-2003 11:59

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030217.B\V5E3978.D
Lab Smp Id: B0258-14C Client Smp ID: WOD-SS-120
Inj Date : 17-FEB-2003 19:37
Operator : AN Inst ID: v5.i
Smp Info : TETRA,B0258-14C,WOD-SS-120,V5B0217A,,B0258
Misc Info : 13-FEB-03,,,,,,,3.8,,23
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030217.B\v58260H.m
Meth Date : 07-Mar-2003 15:29 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	3.800	Weight of sample (g)
M	23.000	% Moisture (not decanted)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
9 Acetone	43	3.400	3.404	(0.544)	306829	255.064	440(A)
112 Methyl Acetate	43	3.744	3.749	(0.599)	300268	96.8450	160
14 Methylene Chloride	84	3.843	3.857	(0.615)	17173	4.42837	8(a)
$ 30 Dibromofluoromethane	113	5.576	5.581	(0.893)	173393	59.1634	100
$ 35 1,2-Dichloroethane-d4	102	5.911	5.915	(0.946)	39114	66.2111	110(R)
* 38 Fluorobenzene	96	6.246	6.250	(1.000)	504740	50.0000	
$ 47 Toluene-d8	98	7.881	7.885	(0.832)	383745	71.0682	120
48 Toluene	91	7.950	7.954	(1.273)	13003	1.06773	2(a)
* 57 Chlorobenzene-d5	117	9.467	9.471	(1.000)	227235	50.0000	
$ 68 Bromofluorobenzene	95	10.826	10.821	(1.144)	76349	34.2712	58
* 81 1,4-Dichlorobenzene-d4	152	12.215	12.209	(1.000)	48795	50.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

3/8/03

0222

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0258
SUBJECT	VOA		
BASED ON	8260	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

WOD-55-120

Methyl Acetate 160 ug/kg

$$\frac{(300268\text{ area})(250\text{ ng})(1)}{(504746\text{ area})(0.307)(3.8\text{ g})(0.77)} = 165.57\ \text{ng/g}$$

≈ 165 ug/kg

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK3N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2291 Lab Sample ID: MB-5802

Instrument ID: S3 Date Extracted: 02/26/03

Matrix: (soil/water) SOIL Date Analyzed: 03/13/03

Level: (low/med) LOW Time Analyzed: 1037

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	S3NLCS	LCS-5802	S3C2292	03/13/03
02	SV1180406	B0258-09A	S3C2312	03/14/03
03	SVDUP06	B0258-11A	S3C2313	03/14/03
04	SV1190507	B0258-12A	S3C2314	03/14/03
05	SV1160204	B0258-05A	S3C2315	03/14/03
06	WOD-SS-117	B0258-06A	S3C2316	03/14/03
07	SV1170102	B0258-07A	S3C2317	03/14/03
08	WOD-SS-118	B0258-08A	S3C2318	03/14/03
09	SV1200406	B0258-15A	S3C2319	03/14/03
10	SV1200406MS	B0258-015AMS	S3C2320	03/14/03
11	SV1200406MSD	B0258-015AMSD	S3C2321	03/14/03
12	WOD-SS-115	B0258-02A	S3C2323	03/14/03
13	WOD-SS-116	B0258-04A	S3C2324	03/14/03
14	WOD-SS-119	B0258-10A	S3C2325	03/14/03
15	WOD-SS-120	B0258-14A	S3C2347	03/15/03
16	SV1150305	B0258-03A	S3C2368	03/15/03
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COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: MB-5802

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2291

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: MB-5802

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2291

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/26/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U
92-52-4	1,1'-Biphenyl	330	U
98-86-2	Acetophenone	330	U
1912-24-9	Atrazine	330	U
100-52-7	Benzaldehyde	330	U
105-60-2	Caprolactum	330	U

(1) - Cannot be separated from Diphenylamine

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2293 Lab Sample ID: MB-5678

Instrument ID: S3 Date Extracted: 02/18/03

Matrix: (soil/water) WATER Date Analyzed: 03/13/03

Level: (low/med) LOW Time Analyzed: 1201

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	S3PLCS	LCS-5678	S3C2294	03/13/03
02	S3PLCSD	LCSD-5678	S3C2295	03/13/03
03	FB-021203	B0258-13D	S3C2296	03/13/03
04	RB-021203	B0258-16D	S3C2297	03/13/03
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COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: MB-5678

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2293

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: MB-5678

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2293

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.466		1.417	1.374	1.349			*
bis(2-Chloroethyl)Ether	*	1.190		1.126	1.078	1.065			*
2-Chlorophenol	*	1.294		1.272	1.255	1.284			*
2-Methylphenol	*	1.128		1.089	1.096	1.140			*
2,2'-oxybis(1-Chloropropane)	*	1.404		1.196	1.142	1.163			*
4-Methylphenol	*	1.124		1.103	1.086	1.098			*
N-Nitroso-di-n-propylamine	*	0.895		0.817	0.843	0.817			*
Hexachloroethane	*	0.620		0.601	0.590	0.606			*
Nitrobenzene	*	0.446		0.423	0.405	0.399			*
Isophorone	*	0.560		0.548	0.535	0.528			*
2-Nitrophenol	*	0.190		0.207	0.208	0.211			*
2,4-Dimethylphenol	*	0.368		0.318	0.327	0.347			*
2,4-Dichlorophenol	*	0.289		0.306	0.321	0.335			*
Naphthalene	*	1.093		1.078	1.120	1.150			*
4-Chloroaniline	*	0.396		0.209	0.204	0.213			*
bis(2-Chloroethoxy)methane	*	0.404		0.397	0.387	0.387			*
Hexachlorobutadiene	*	0.200		0.210	0.216	0.223			*
4-Chloro-3-Methylphenol	*	0.313		0.325	0.332	0.336			*
2-Methylnaphthalene	*	0.877		0.890	0.982	1.015			*
Hexachlorocyclopentadiene	*	0.284		0.296	0.321	0.344			*
2,4,6-Trichlorophenol	*	0.347		0.382	0.383	0.399			*
2,4,5-Trichlorophenol	*		0.375	0.405	0.402	0.423			*
2-Chloronaphthalene	*	1.132		1.161	1.207	1.275			*
2-Nitroaniline	*		0.546	0.539	0.519	0.512			*
Dimethylphthalate	*	1.365		1.371	1.369	1.403			*
Acenaphthylene	*	1.833		1.795	1.781	1.808			*
2,6-Dinitrotoluene	*	0.296		0.307	0.307	0.310			*
3-Nitroaniline	*		0.056	0.108	0.214	0.251			*
Acenaphthene	*	1.158		1.162	1.202	1.255			*
2,4-Dinitrophenol	*		0.123	0.154	0.172	0.183			*
4-Nitrophenol	*		0.239	0.279	0.280	0.271			*
Dibenzofuran	*	2.006		2.129	2.294	2.281			*
2,4-Dinitrotoluene	*	0.378		0.412	0.443	0.448			*
Diethylphthalate	*	1.310		1.335	1.378	1.399			*
4-Chlorophenyl-phenylether	*	0.612		0.666	0.725	0.679			*
Fluorene	*	1.216		1.326	1.457	1.419			*
4-Nitroaniline	*		0.175	0.171	0.164	0.130			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.133	0.150	0.165	0.169			*
N-Nitrosodiphenylamine (1)	*	0.516		0.395	0.308	0.343			*
4-Bromophenyl-phenylether	*	0.226		0.234	0.244	0.248			*
Hexachlorobenzene	*	0.220		0.228	0.236	0.242			*
Pentachlorophenol	*		0.109	0.136	0.146	0.156			*
Phenanthrene	*	1.087		1.124	1.205	1.236			*
Anthracene	*	1.096		1.089	1.181	1.202			*
Carbazole	*	0.871		0.422	0.467	0.486			*
Di-n-butylphthalate	*	1.281		1.340	1.389	1.407			*
Fluoranthene	*	1.016		1.111	1.174	1.185			*
Pyrene	*	1.200		1.176	1.222	1.208			*
Butylbenzylphthalate	*	0.592		0.607	0.618	0.619			*
3,3'-Dichlorobenzidine		0.118		0.162	0.157	0.160			
Benzo(a)anthracene	*	1.086		1.066	1.098	1.087			*
Chrysene	*	1.024		1.069	1.098	1.016			*
bis(2-Ethylhexyl)phthalate	*	0.814		0.911	0.950	0.890			*
Di-n-octylphthalate	*	1.921		2.211	2.574	2.649			*
Benzo(b)fluoranthene	*	1.440		1.544	1.703	1.785			*
Benzo(k)fluoranthene	*	1.520		1.618	1.760	1.766			*
Benzo(a)pyrene	*	1.345		1.356	1.452	1.504			*
Indeno(1,2,3-cd)pyrene	*	1.445		1.560	1.451	1.547			*
Dibenzo(a,h)anthracene	*	1.202		1.320	1.255	1.358			*
Benzo(g,h,i)perylene	*	1.185		1.300	1.160	1.241			*
1,1'-Biphenyl	*	1.583		1.596	1.654	1.701			*
Acetophenone	*	1.830		1.743	1.796	1.820			*
Atrazine	*	0.206		0.161	0.178	0.171			*
Benzaldehyde	*	0.643		0.653	0.526	0.352			*
Caprolactum	*	0.098		0.100	0.099	0.099			*
Nitrobenzene-d5		0.456		0.443	0.436	0.430			*
2-Fluorobiphenyl	*	1.509		1.528	1.554	1.607			*
Terphenyl-d14	*	0.894		0.899	0.923	0.907			*
Phenol-d5	*	1.413		1.332	1.293	1.275			*
2-Fluorophenol	*	1.054		1.158	1.121	1.115			*
2,4,6-Tribromophenol	*	0.102		0.112	0.117	0.120			*
2-Chlorophenol-d4	*	1.301		1.293	1.266	1.268			*
1,2-Dichlorobenzene-d4	*	0.916		0.887	0.903	0.933			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160						$\overline{RRF}$	% RSD
Phenol	* 1.390						1.399	3.2*
bis(2-Chloroethyl)Ether	* 1.100						1.112	4.4*
2-Chlorophenol	* 1.371						1.295	3.5*
2-Methylphenol	* 1.198						1.130	3.8*
2,2'-oxybis(1-Chloropropane)	* 1.235						1.228	8.5*
4-Methylphenol	* 1.129						1.108	1.6*
N-Nitroso-di-n-propylamine	* 0.729						0.820	7.3*
Hexachloroethane	* 0.627						0.609	2.4*
Nitrobenzene	* 0.406						0.416	4.6*
Isophorone	* 0.535						0.541	2.3*
2-Nitrophenol	* 0.219						0.207	5.1*
2,4-Dimethylphenol	* 0.383						0.349	7.8*
2,4-Dichlorophenol	* 0.356						0.321	8.1*
Naphthalene	* 1.196						1.127	4.2*
4-Chloroaniline	* 0.251						0.255	31.9*
bis(2-Chloroethoxy)methane	* 0.403						0.396	2.1*
Hexachlorobutadiene	* 0.220						0.214	4.2*
4-Chloro-3-Methylphenol	* 0.348						0.331	4.0*
2-Methylnaphthalene	* 1.032						0.959	7.5*
Hexachlorocyclopentadiene	* 0.369						0.323	10.7*
2,4,6-Trichlorophenol	* 0.424						0.387	7.2*
2,4,5-Trichlorophenol	* 0.457						0.412	7.4*
2-Chloronaphthalene	* 1.346						1.224	7.1*
2-Nitroaniline	* 0.518						0.527	2.8*
Dimethylphthalate	* 1.415						1.385	1.7*
Acenaphthylene	* 1.879						1.819	2.1*
2,6-Dinitrotoluene	* 0.318						0.308	2.6*
3-Nitroaniline	* 0.274						0.181	52.2*
Acenaphthene	* 1.311						1.218	5.3*
2,4-Dinitrophenol	* 0.201						0.167	17.9*
4-Nitrophenol	* 0.265						0.267	6.2*
Dibenzofuran	* 2.250						2.192	5.6*
2,4-Dinitrotoluene	* 0.456						0.427	7.5*
Diethylphthalate	* 1.413						1.367	3.2*
4-Chlorophenyl-phenylether	* 0.600						0.656	7.8*
Fluorene	* 1.325						1.349	7.0*
4-Nitroaniline	* 0.111						0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND		RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	*	0.177						0.159	11.0*
N-Nitrosodiphenylamine (1)	*	0.407						0.394	20.1*
4-Bromophenyl-phenylether	*	0.262						0.243	5.7*
Hexachlorobenzene	*	0.255						0.236	5.7*
Pentachlorophenol	*	0.166						0.143	15.2*
Phenanthrene	*	1.296						1.190	7.1*
Anthracene	*	1.261						1.166	6.3*
Carbazole	*	0.612						0.572	31.8*
Di-n-butylphthalate	*	1.451						1.374	4.8*
Fluoranthene	*	1.230						1.143	7.2*
Pyrene	*	1.223						1.206	1.6*
Butylbenzylphthalate	*	0.629						0.613	2.3*
3,3'-Dichlorobenzidine		0.136						0.147	12.9
Benzo(a)anthracene	*	1.092						1.086	1.1*
Chrysene	*	0.963						1.034	5.0*
bis(2-Ethylhexyl)phthalate	*	0.824						0.878	6.6*
Di-n-octylphthalate	*	2.687						2.408	13.8*
Benzo(b)fluoranthene	*	1.959						1.686	12.1*
Benzo(k)fluoranthene	*	1.683						1.669	6.2*
Benzo(a)pyrene	*	1.582						1.448	6.9*
Indeno(1,2,3-cd)pyrene	*	1.678						1.536	6.2*
Dibenzo(a,h)anthracene	*	1.479						1.323	8.0*
Benzo(g,h,i)perylene	*	1.338						1.245	6.0*
1,1'-Biphenyl	*	1.686						1.644	3.2*
Acetophenone	*	1.856						1.809	2.4*
Atrazine	*	0.173						0.178	9.6*
Benzaldehyde	*	0.213						0.477	40.0*
Caprolactum	*	0.097						0.099	1.1*
Nitrobenzene-d5		0.436						0.440	2.2*
2-Fluorobiphenyl	*	1.695						1.579	4.7*
Terphenyl-d14	*	0.882						0.901	1.7*
Phenol-d5	*	1.296						1.322	4.2*
2-Fluorophenol	*	1.164						1.122	3.9*
2,4,6-Tribromophenol	*	0.128						0.116	8.5*
2-Chlorophenol-d4	*	1.326						1.291	1.9*
1,2-Dichlorobenzene-d4	*	0.981						0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2289 DFTPP Injection Date: 03/13/03

Instrument ID: S3 DFTPP Injection Time: 0915

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.5
68	Less than 2.0% of mass 69	1.0 (2.0)1
69	Mass 69 relative abundance	49.0
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.0
365	Greater than 1.0% of mass 198	3.94
441	Present, but less than mass 443	10.7
442	40.0 - 99.9% of mass 198	71.5
443	17.0 - 23.0% of mass 442	13.9 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503M	SS0313A	S3C2290	03/13/03	0935
02	SBLK3N	MB-5802	S3C2291	03/13/03	1037
03	S3NLCS	LCS-5802	S3C2292	03/13/03	1119
04	SBLK3P	MB-5678	S3C2293	03/13/03	1201
05	S3PLCS	LCS-5678	S3C2294	03/13/03	1244
06	S3PLCSD	LCSD-5678	S3C2295	03/13/03	1325
07	FB-021203	B0258-13D	S3C2296	03/13/03	1408
08	RB-021203	B0258-16D	S3C2297	03/13/03	1450
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.420	0.050	1.5	20.0
bis(2-Chloroethyl)Ether	1.112	1.150	0.050	3.4	100
2-Chlorophenol	1.295	1.284	0.050	-0.8	100
2-Methylphenol	1.130	1.082	0.050	-4.2	100
2,2'-oxybis(1-Chloropropane)	1.228	1.273	0.050	3.7	100
4-Methylphenol	1.108	1.107	0.050	-0.1	100
N-Nitroso-di-n-propylamine	0.820	0.850	0.050	3.6	100
Hexachloroethane	0.609	0.615	0.050	1.0	100
Nitrobenzene	0.416	0.419	0.050	0.7	100
Isophorone	0.541	0.531	0.050	-1.8	100
2-Nitrophenol	0.207	0.200	0.050	-3.4	20.0
2,4-Dimethylphenol	0.349	0.282	0.050	-19.2	100
2,4-Dichlorophenol	0.321	0.295	0.050	-8.1	20.0
Naphthalene	1.127	1.086	0.050	-3.6	100
4-Chloroaniline	0.255	0.148	0.050	-42.0	100
bis(2-Chloroethoxy)methane	0.396	0.394	0.050	-0.5	100
Hexachlorobutadiene	0.214	0.202	0.050	-5.6	20.0
4-Chloro-3-Methylphenol	0.331	0.318	0.050	-3.9	20.0
2-Methylnaphthalene	0.959	0.903	0.050	-5.8	100
Hexachlorocyclopentadiene	0.323	0.281	0.050	-13.0	100
2,4,6-Trichlorophenol	0.387	0.373	0.050	-3.6	100
2,4,5-Trichlorophenol	0.412	0.381	0.050	-7.5	100
2-Chloronaphthalene	1.224	1.157	0.050	-5.5	100
2-Nitroaniline	0.527	0.532	0.050	0.9	100
Dimethylphthalate	1.385	1.353	0.050	-2.3	100
Acenaphthylene	1.819	1.763	0.050	-3.1	100
2,6-Dinitrotoluene	0.308	0.302	0.050	-1.9	100
3-Nitroaniline	0.181	0.166	0.050	-8.3	100
Acenaphthene	1.218	1.148	0.050	-5.7	20.0
2,4-Dinitrophenol	0.167	0.147	0.050	-12.0	100
4-Nitrophenol	0.267	0.275	0.050	3.0	100
Dibenzofuran	2.192	2.152	0.050	-1.8	100
2,4-Dinitrotoluene	0.427	0.417	0.050	-2.3	100
Diethylphthalate	1.367	1.345	0.050	-1.6	100
4-Chlorophenyl-phenylether	0.656	0.677	0.050	3.2	100
Fluorene	1.349	1.357	0.050	0.6	100
4-Nitroaniline	0.150	0.169	0.050	12.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.148	0.050	-6.9	100
N-Nitrosodiphenylamine(1)	0.394	0.342	0.050	-13.2	20.0
4-Bromophenyl-phenylether	0.243	0.225	0.050	-7.4	100
Hexachlorobenzene	0.236	0.219	0.050	-7.2	100
Pentachlorophenol	0.143	0.129	0.050	-9.8	20.0
Phenanthrene	1.190	1.129	0.050	-5.1	100
Anthracene	1.166	1.071	0.050	-8.1	100
Carbazole	0.572	0.384	0.050	-32.9	100
Di-n-butylphthalate	1.374	1.362	0.050	-0.9	100
Fluoranthene	1.143	1.109	0.050	-3.0	20.0
Pyrene	1.206	1.173	0.050	-2.7	100
Butylbenzylphthalate	0.613	0.604	0.050	-1.5	100
3,3'-Dichlorobenzidine	0.147	0.144	0.050	-2.0	100
Benzo(a)anthracene	1.086	1.064	0.050	-2.0	100
Chrysene	1.034	1.075	0.050	4.0	100
bis(2-Ethylhexyl)phthalate	0.878	0.937	0.050	6.7	100
Di-n-octylphthalate	2.408	2.301	0.050	-4.4	20.0
Benzo(b)fluoranthene	1.686	1.592	0.050	-5.6	100
Benzo(k)fluoranthene	1.669	1.622	0.050	-2.8	100
Benzo(a)pyrene	1.448	1.341	0.050	-7.4	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.512	0.050	-1.6	100
Dibenzo(a,h)anthracene	1.323	1.285	0.050	-2.9	100
Benzo(g,h,i)perylene	1.245	1.239	0.050	-0.5	100
1,1'-Biphenyl	1.644	1.564	0.050	-4.9	100
Acetophenone	1.809	1.818	0.050	0.5	100
Atrazine	0.178	0.129	0.050	-27.5	100
Benzaldehyde	0.477	0.660	0.050	38.4	100
Caprolactum	0.099	0.096	0.050	-3.0	100
Nitrobenzene-d5	0.440	0.447	0.050	1.6	100
2-Fluorobiphenyl	1.579	1.490	0.050	-5.6	100
Terphenyl-d14	0.901	0.874	0.050	-3.0	100
Phenol-d5	1.322	1.346	0.050	1.8	100
2-Fluorophenol	1.122	1.129	0.050	0.6	100
2,4,6-Tribromophenol	0.116	0.105	0.050	-9.5	100
2-Chlorophenol-d4	1.291	1.294	0.050	0.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.886	0.050	-4.1	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2307 DFTPP Injection Date: 03/13/03

Instrument ID: S3 DFTPP Injection Time: 2352

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.1
68	Less than 2.0% of mass 69	0.8 (1.7)1
69	Mass 69 relative abundance	47.4
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.4
365	Greater than 1.0% of mass 198	4.79
441	Present, but less than mass 443	13.3
442	40.0 - 99.9% of mass 198	94.9
443	17.0 - 23.0% of mass 442	18.7 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503N	SS0313B	S3C2308	03/14/03	0012
02	SV1180406	B0258-09A	S3C2312	03/14/03	0253
03	SVDUP06	B0258-11A	S3C2313	03/14/03	0333
04	SV1190507	B0258-12A	S3C2314	03/14/03	0414
05	SV1160204	B0258-05A	S3C2315	03/14/03	0455
06	WOD-SS-117	B0258-06A	S3C2316	03/14/03	0535
07	SV1170102	B0258-07A	S3C2317	03/14/03	0616
08	WOD-SS-118	B0258-08A	S3C2318	03/14/03	0657
09	SV1200406	B0258-15A	S3C2319	03/14/03	0738
10	SV1200406MS	B0258-015AMS	S3C2320	03/14/03	0818
11	SV1200406MSD	B0258-015AMSD	S3C2321	03/14/03	0859
12	WOD-SS-115	B0258-02A	S3C2323	03/14/03	1021
13	WOD-SS-116	B0258-04A	S3C2324	03/14/03	1102
14	WOD-SS-119	B0258-10A	S3C2325	03/14/03	1144
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/14/03 Time: 0012

Lab File ID: S3C2308 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.474	0.050	5.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.183	0.050	6.4	100
2-Chlorophenol	1.295	1.298	0.050	0.2	100
2-Methylphenol	1.130	1.097	0.050	-2.9	100
2,2'-oxybis(1-Chloropropane)	1.228	1.311	0.050	6.8	100
4-Methylphenol	1.108	1.121	0.050	1.2	100
N-Nitroso-di-n-propylamine	0.820	0.905	0.050	10.4	100
Hexachloroethane	0.609	0.633	0.050	3.9	100
Nitrobenzene	0.416	0.420	0.050	1.0	100
Isophorone	0.541	0.541	0.050	0.0	100
2-Nitrophenol	0.207	0.198	0.050	-4.3	20.0
2,4-Dimethylphenol	0.349	0.279	0.050	-20.0	100
2,4-Dichlorophenol	0.321	0.294	0.050	-8.4	20.0
Naphthalene	1.127	1.089	0.050	-3.4	100
4-Chloroaniline	0.255	0.141	0.050	-44.7	100
bis(2-Chloroethoxy)methane	0.396	0.400	0.050	1.0	100
Hexachlorobutadiene	0.214	0.203	0.050	-5.1	20.0
4-Chloro-3-Methylphenol	0.331	0.325	0.050	-1.8	20.0
2-Methylnaphthalene	0.959	0.905	0.050	-5.6	100
Hexachlorocyclopentadiene	0.323	0.267	0.050	-17.3	100
2,4,6-Trichlorophenol	0.387	0.357	0.050	-7.8	100
2,4,5-Trichlorophenol	0.412	0.368	0.050	-10.7	100
2-Chloronaphthalene	1.224	1.150	0.050	-6.0	100
2-Nitroaniline	0.527	0.536	0.050	1.7	100
Dimethylphthalate	1.385	1.354	0.050	-2.2	100
Acenaphthylene	1.819	1.763	0.050	-3.1	100
2,6-Dinitrotoluene	0.308	0.303	0.050	-1.6	100
3-Nitroaniline	0.181	0.179	0.050	-1.1	100
Acenaphthene	1.218	1.151	0.050	-5.5	20.0
2,4-Dinitrophenol	0.167	0.140	0.050	-16.2	100
4-Nitrophenol	0.267	0.252	0.050	-5.6	100
Dibenzofuran	2.192	2.131	0.050	-2.8	100
2,4-Dinitrotoluene	0.427	0.426	0.050	-0.2	100
Diethylphthalate	1.367	1.368	0.050	0.1	100
4-Chlorophenyl-phenylether	0.656	0.669	0.050	2.0	100
Fluorene	1.349	1.348	0.050	-0.1	100
4-Nitroaniline	0.150	0.184	0.050	22.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/14/03 Time: 0012

Lab File ID: S3C2308 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.143	0.050	-10.1	100
N-Nitrosodiphenylamine(1)	0.394	0.351	0.050	-10.9	20.0
4-Bromophenyl-phenylether	0.243	0.218	0.050	-10.3	100
Hexachlorobenzene	0.236	0.217	0.050	-8.0	100
Pentachlorophenol	0.143	0.121	0.050	-15.4	20.0
Phenanthrene	1.190	1.110	0.050	-6.7	100
Anthracene	1.166	1.051	0.050	-9.9	100
Carbazole	0.572	0.372	0.050	-35.0	100
Di-n-butylphthalate	1.374	1.358	0.050	-1.2	100
Fluoranthene	1.143	1.119	0.050	-2.1	20.0
Pyrene	1.206	1.149	0.050	-4.7	100
Butylbenzylphthalate	0.613	0.602	0.050	-1.8	100
3,3'-Dichlorobenzidine	0.147	0.154		4.8	
Benzo(a)anthracene	1.086	1.055	0.050	-2.8	100
Chrysene	1.034	1.078	0.050	4.2	100
bis(2-Ethylhexyl)phthalate	0.878	0.929	0.050	5.8	100
Di-n-octylphthalate	2.408	2.335	0.050	-3.0	20.0
Benzo(b)fluoranthene	1.686	1.604	0.050	-4.9	100
Benzo(k)fluoranthene	1.669	1.644	0.050	-1.5	100
Benzo(a)pyrene	1.448	1.341	0.050	-7.4	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.479	0.050	-3.7	100
Dibenzo(a,h)anthracene	1.323	1.252	0.050	-5.4	100
Benzo(g,h,i)perylene	1.245	1.209	0.050	-2.9	100
1,1'-Biphenyl	1.644	1.541	0.050	-6.3	100
Acetophenone	1.809	1.850	0.050	2.3	100
Atrazine	0.178	0.116	0.050	-34.8	100
Benzaldehyde	0.477	0.757	0.050	58.7	100
Caprolactum	0.099	0.101	0.050	2.0	100
Nitrobenzene-d5	0.440	0.451	0.050	2.5	100
2-Fluorobiphenyl	1.579	1.460	0.050	-7.5	100
Terphenyl-d14	0.901	0.858	0.050	-4.8	100
Phenol-d5	1.322	1.376	0.050	4.1	100
2-Fluorophenol	1.122	1.142	0.050	1.8	100
2,4,6-Tribromophenol	0.116	0.100	0.050	-13.8	100
2-Chlorophenol-d4	1.291	1.297	0.050	0.5	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/14/03 Time: 0012

Lab File ID: S3C2308 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.907	0.050	-1.8	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2342 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 0011

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.3
68	Less than 2.0% of mass 69	0.7 (1.4)1
69	Mass 69 relative abundance	50.4
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.6
197	Less than 1.0% of mass 198	0.7
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.8
365	Greater than 1.0% of mass 198	5.42
441	Present, but less than mass 443	13.7
442	40.0 - 99.9% of mass 198	93.3
443	17.0 - 23.0% of mass 442	18.0 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Q	SS0315A	S3C2343	03/15/03	0031
02	WOD-SS-120	B0258-14A	S3C2347	03/15/03	0313
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.517	0.050	8.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.225	0.050	10.2	100
2-Chlorophenol	1.295	1.304	0.050	0.7	100
2-Methylphenol	1.130	1.099	0.050	-2.7	100
2,2'-oxybis(1-Chloropropane)	1.228	1.446	0.050	17.8	100
4-Methylphenol	1.108	1.097	0.050	-1.0	100
N-Nitroso-di-n-propylamine	0.820	0.870	0.050	6.1	100
Hexachloroethane	0.609	0.622	0.050	2.1	100
Nitrobenzene	0.416	0.470	0.050	13.0	100
Isophorone	0.541	0.572	0.050	5.7	100
2-Nitrophenol	0.207	0.210	0.050	1.4	20.0
2,4-Dimethylphenol	0.349	0.290	0.050	-16.9	100
2,4-Dichlorophenol	0.321	0.301	0.050	-6.2	20.0
Naphthalene	1.127	1.074	0.050	-4.7	100
4-Chloroaniline	0.255	0.138	0.050	-45.9	100
bis(2-Chloroethoxy)methane	0.396	0.434	0.050	9.6	100
Hexachlorobutadiene	0.214	0.210	0.050	-1.9	20.0
4-Chloro-3-Methylphenol	0.331	0.325	0.050	-1.8	20.0
2-Methylnaphthalene	0.959	0.817	0.050	-14.8	100
Hexachlorocyclopentadiene	0.323	0.241	0.050	-25.4	100
2,4,6-Trichlorophenol	0.387	0.384	0.050	-0.8	100
2,4,5-Trichlorophenol	0.412	0.390	0.050	-5.3	100
2-Chloronaphthalene	1.224	1.162	0.050	-5.1	100
2-Nitroaniline	0.527	0.614	0.050	16.5	100
Dimethylphthalate	1.385	1.393	0.050	0.6	100
Acenaphthylene	1.819	1.788	0.050	-1.7	100
2,6-Dinitrotoluene	0.308	0.323	0.050	4.9	100
3-Nitroaniline	0.181	0.206	0.050	13.8	100
Acenaphthene	1.218	1.146	0.050	-5.9	20.0
2,4-Dinitrophenol	0.167	0.129	0.050	-22.8	100
4-Nitrophenol	0.267	0.242	0.050	-9.4	100
Dibenzofuran	2.192	2.012	0.050	-8.2	100
2,4-Dinitrotoluene	0.427	0.396	0.050	-7.2	100
Diethylphthalate	1.367	1.319	0.050	-3.5	100
4-Chlorophenyl-phenylether	0.656	0.621	0.050	-5.3	100
Fluorene	1.349	1.223	0.050	-9.3	100
4-Nitroaniline	0.150	0.174	0.050	16.0	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.142	0.050	-10.7	100
N-Nitrosodiphenylamine(1)	0.394	0.424	0.050	7.6	20.0
4-Bromophenyl-phenylether	0.243	0.227	0.050	-6.6	100
Hexachlorobenzene	0.236	0.224	0.050	-5.1	100
Pentachlorophenol	0.143	0.115	0.050	-19.6	20.0
Phenanthrene	1.190	1.104	0.050	-7.2	100
Anthracene	1.166	1.026	0.050	-12.0	100
Carbazole	0.572	0.654	0.050	14.3	100
Di-n-butylphthalate	1.374	1.326	0.050	-3.5	100
Fluoranthene	1.143	1.052	0.050	-8.0	20.0
Pyrene	1.206	1.229	0.050	1.9	100
Butylbenzylphthalate	0.613	0.629	0.050	2.6	100
3,3'-Dichlorobenzidine	0.147	0.119		-19.0	
Benzo(a)anthracene	1.086	1.057	0.050	-2.7	100
Chrysene	1.034	1.026	0.050	-0.8	100
bis(2-Ethylhexyl)phthalate	0.878	0.891	0.050	1.5	100
Di-n-octylphthalate	2.408	2.294	0.050	-4.7	20.0
Benzo(b)fluoranthene	1.686	1.556	0.050	-7.7	100
Benzo(k)fluoranthene	1.669	1.640	0.050	-1.7	100
Benzo(a)pyrene	1.448	1.328	0.050	-8.3	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.597	0.050	4.0	100
Dibenzo(a,h)anthracene	1.323	1.346	0.050	1.7	100
Benzo(g,h,i)perylene	1.245	1.354	0.050	8.8	100
1,1'-Biphenyl	1.644	1.598	0.050	-2.8	100
Acetophenone	1.809	1.734	0.050	-4.1	100
Atrazine	0.178	0.118	0.050	-33.7	100
Benzaldehyde	0.477	0.806	0.050	69.0	100
Caprolactum	0.099	0.110	0.050	11.1	100
Nitrobenzene-d5	0.440	0.502	0.050	14.1	100
2-Fluorobiphenyl	1.579	1.541	0.050	-2.4	100
Terphenyl-d14	0.901	0.888	0.050	-1.4	100
Phenol-d5	1.322	1.428	0.050	8.0	100
2-Fluorophenol	1.122	1.196	0.050	6.6	100
2,4,6-Tribromophenol	0.116	0.109	0.050	-6.0	100
2-Chlorophenol-d4	1.291	1.313	0.050	1.7	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.892	0.050	-3.5	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID: S3C2361 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 1611

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.7 (1.5)1
69	Mass 69 relative abundance	47.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.2
365	Greater than 1.0% of mass 198	5.04
441	Present, but less than mass 443	14.5
442	40.0 - 99.9% of mass 198	97.9
443	17.0 - 23.0% of mass 442	20.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503R	SS0315B	S3C2362	03/15/03	1632
02	SV1150305	B0258-03A	S3C2368	03/15/03	2050
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.489	0.050	6.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.241	0.050	11.6	100
2-Chlorophenol	1.295	1.314	0.050	1.5	100
2-Methylphenol	1.130	1.136	0.050	0.5	100
2,2'-oxybis(1-Chloropropane)	1.228	1.600	0.050	30.3	100
4-Methylphenol	1.108	1.196	0.050	7.9	100
N-Nitroso-di-n-propylamine	0.820	0.880	0.050	7.3	100
Hexachloroethane	0.609	0.575	0.050	-5.6	100
Nitrobenzene	0.416	0.415	0.050	-0.2	100
Isophorone	0.541	0.560	0.050	3.5	100
2-Nitrophenol	0.207	0.203	0.050	-1.9	20.0
2,4-Dimethylphenol	0.349	0.287	0.050	-17.8	100
2,4-Dichlorophenol	0.321	0.300	0.050	-6.5	20.0
Naphthalene	1.127	1.076	0.050	-4.5	100
4-Chloroaniline	0.255	0.141	0.050	-44.7	100
bis(2-Chloroethoxy)methane	0.396	0.404	0.050	2.0	100
Hexachlorobutadiene	0.214	0.176	0.050	-17.8	20.0
4-Chloro-3-Methylphenol	0.331	0.343	0.050	3.6	20.0
2-Methylnaphthalene	0.959	0.924	0.050	-3.6	100
Hexachlorocyclopentadiene	0.323	0.161	0.050	-50.2	100
2,4,6-Trichlorophenol	0.387	0.360	0.050	-7.0	100
2,4,5-Trichlorophenol	0.412	0.376	0.050	-8.7	100
2-Chloronaphthalene	1.224	1.127	0.050	-7.9	100
2-Nitroaniline	0.527	0.550	0.050	4.4	100
Dimethylphthalate	1.385	1.392	0.050	0.5	100
Acenaphthylene	1.819	1.844	0.050	1.4	100
2,6-Dinitrotoluene	0.308	0.308	0.050	0.0	100
3-Nitroaniline	0.181	0.293	0.050	61.9	100
Acenaphthene	1.218	1.188	0.050	-2.5	20.0
2,4-Dinitrophenol	0.167	0.136	0.050	-18.6	100
4-Nitrophenol	0.267	0.237	0.050	-11.2	100
Dibenzofuran	2.192	2.056	0.050	-6.2	100
2,4-Dinitrotoluene	0.427	0.415	0.050	-2.8	100
Diethylphthalate	1.367	1.418	0.050	3.7	100
4-Chlorophenyl-phenylether	0.656	0.602	0.050	-8.2	100
Fluorene	1.349	1.295	0.050	-4.0	100
4-Nitroaniline	0.150	0.236	0.050	57.3	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.139	0.050	-12.6	100
N-Nitrosodiphenylamine(1)	0.394	0.438	0.050	11.2	20.0
4-Bromophenyl-phenylether	0.243	0.220	0.050	-9.5	100
Hexachlorobenzene	0.236	0.234	0.050	-0.8	100
Pentachlorophenol	0.143	0.135	0.050	-5.6	20.0
Phenanthrene	1.190	1.111	0.050	-6.6	100
Anthracene	1.166	1.062	0.050	-8.9	100
Carbazole	0.572	0.843	0.050	47.4	100
Di-n-butylphthalate	1.374	1.432	0.050	4.2	100
Fluoranthene	1.143	1.085	0.050	-5.1	20.0
Pyrene	1.206	1.230	0.050	2.0	100
Butylbenzylphthalate	0.613	0.689	0.050	12.4	100
3,3'-Dichlorobenzidine	0.147	0.220		49.6	
Benzo(a)anthracene	1.086	1.066	0.050	-1.8	100
Chrysene	1.034	1.010	0.050	-2.3	100
bis(2-Ethylhexyl)phthalate	0.878	1.012	0.050	15.3	100
Di-n-octylphthalate	2.408	2.799	0.050	16.2	20.0
Benzo(b)fluoranthene	1.686	1.630	0.050	-3.3	100
Benzo(k)fluoranthene	1.669	1.665	0.050	-0.2	100
Benzo(a)pyrene	1.448	1.343	0.050	-7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.535	0.050	-0.1	100
Dibenzo(a,h)anthracene	1.323	1.303	0.050	-1.5	100
Benzo(g,h,i)perylene	1.245	1.247	0.050	0.2	100
1,1'-Biphenyl	1.644	1.522	0.050	-7.4	100
Acetophenone	1.809	1.862	0.050	2.9	100
Atrazine	0.178	0.123	0.050	-30.9	100
Benzaldehyde	0.477	0.903	0.050	89.3	100
Caprolactum	0.099	0.115	0.050	16.2	100
Nitrobenzene-d5	0.440	0.435	0.050	-1.1	100
2-Fluorobiphenyl	1.579	1.415	0.050	-10.4	100
Terphenyl-d14	0.901	0.935	0.050	3.8	100
Phenol-d5	1.322	1.403	0.050	6.1	100
2-Fluorophenol	1.122	1.182	0.050	5.3	100
2,4,6-Tribromophenol	0.116	0.119	0.050	2.6	100
2-Chlorophenol-d4	1.291	1.331	0.050	3.1	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.889	0.050	-3.8	100

All other compounds must meet a minimum RRF of 0.010.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	SBLK3P	79	78	100	37	54	85	79	72	0
02	S3PLCS	82	82	94	38	53	94	80	73	0
03	S3PLCSD	81	81	95	37	53	95	79	71	0
04	FB-021203	79	76	72	24	38	79	74	71	0
05	RB-021203	71	68	73	20	33	69	67	65	0
06										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK3N	83	80	96	89	87	73	86	77	0
02	S3NLCS	82	78	89	90	91	86	89	76	0
03	SV1180406	68	66	77	72	73	56	71	63	0
04	SVDUP06	62	58	69	67	67	56	67	59	0
05	SV1190507	63	61	70	68	68	58	68	59	0
06	SV1160204	64	62	72	69	70	62	69	60	0
07	WOD-SS-117	66	66	77	71	72	74	70	60	0
08	SV1170102	60	59	68	66	67	63	66	57	0
09	WOD-SS-118	63	61	71	70	72	66	71	61	0
10	SV1200406	64	63	76	72	75	71	73	62	0
11	SV1200406MS	59	61	71	66	66	68	66	55	0
12	SV1200406MSD	63	62	68	69	71	65	70	61	0
13	WOD-SS-115	53	52	66	58	61	56	59	51	0
14	WOD-SS-116	55	57	80	63	65	66	64	52	0
15	WOD-SS-119	55	57	72	60	63	58	64	55	0
16	WOD-SS-120	57	54	62	49	51	54	54	49	0
17	SV1150305	73	69	92	70	70	68	74	69	0
18										
19										
20										
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28										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	930	0.0	640	69	45-109
bis(2-Chloroethyl)Ether	930	0.0	590	63	43-104
2-Chlorophenol	930	0.0	600	64	43-107
2-Methylphenol	930	0.0	580	62	45-108
2,2'-oxybis(1-Chloropro	930	0.0	600	64	41-105
4-Methylphenol	930	0.0	620	67	48-109
N-Nitroso-di-n-prop.(1)	930	0.0	650	70	44-111
Hexachloroethane	930	0.0	540	58	40-102
Nitrobenzene	930	0.0	600	64	44-108
Isophorone	930	0.0	770	83	42-113
2-Nitrophenol	930	0.0	560	60	42-111
2,4-Dimethylphenol	930	0.0	620	67	37-107
2,4-Dichlorophenol	930	0.0	540	58	49-110
Naphthalene	930	0.0	560	60	44-112
4-Chloroaniline	930	0.0	500	54	4-102
bis(2-Chloroethoxy)meth	930	0.0	610	66	46-108
Hexachlorobutadiene	930	0.0	550	59	41-108
4-Chloro-3-Methylphenol	930	0.0	630	68	56-117
2-Methylnaphthalene	930	0.0	430	46	46-110
Hexachlorocyclopentadie	930	0.0	570	61	10-118
2,4,6-Trichlorophenol	930	0.0	600	64	53-115
2,4,5-Trichlorophenol	930	0.0	550	59	59-113
2-Chloronaphthalene	930	0.0	580	62	52-112
2-Nitroaniline	930	0.0	460	49*	63-117
Dimethylphthalate	930	0.0	660	71	62-117
Acenaphthylene	930	0.0	640	69	58-112
2,6-Dinitrotoluene	930	0.0	670	72	60-118
3-Nitroaniline	930	0.0	780	84	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0198

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	930	0.0	610	66	53-116
2,4-Dinitrophenol	930	0.0	330	35	15-136
4-Nitrophenol	930	0.0	390	42*	50-129
Dibenzofuran	930	0.0	460	49*	61-112
2,4-Dinitrotoluene	930	0.0	640	69	59-123
Diethylphthalate	930	0.0	700	75	61-120
4-Chlorophenyl-phenylet	930	0.0	640	69	59-116
Fluorene	930	0.0	620	67	63-115
4-Nitroaniline	930	0.0	870	94	35-124
4,6-Dinitro-2-methylphe	930	0.0	460	49	33-130
N-Nitrosodiphenylamine	930	0.0	1100	118	50-150
4-Bromophenyl-phenyleth	930	0.0	620	67	66-110
Hexachlorobenzene	930	0.0	630	68	67-112
Pentachlorophenol	930	0.0	460	49	19-130
Phenanthrene	930	0.0	620	67*	70-115
Anthracene	930	0.0	590	63	63-117
Carbazole	930	0.0	1100	118	62-122
Di-n-butylphthalate	930	0.0	710	76	70-120
Fluoranthene	930	0.0	650	70	64-121
Pyrene	930	0.0	660	71	66-120
Butylbenzylphthalate	930	0.0	700	75	63-123
3,3'-Dichlorobenzidine	930	0.0	380	41	8-124
Benzo(a)anthracene	930	0.0	670	72	50-129
Chrysene	930	0.0	680	73	41-150
bis(2-Ethylhexyl)phthal	930	66	740	72	64-115
Di-n-octylphthalate	930	0.0	610	66*	69-137
Benzo(b)fluoranthene	930	0.0	640	69	61-129
Benzo(k)fluoranthene	930	0.0	640	69	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	930	0.0	590	63*	66-119
Indeno(1,2,3-cd)pyrene	930	0.0	620	67	56-128
Dibenzo(a,h)anthracene	930	0.0	610	66	58-128
Benzo(g,h,i)perylene	930	0.0	600	64	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0200

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	930	610	66	4	40	45-109
bis(2-Chloroethyl)Ether	930	580	62	2	40	43-104
2-Chlorophenol	930	580	62	3	40	43-107
2-Methylphenol	930	560	60	3	40	45-108
2,2'-oxybis(1-Chloropro	930	600	64	0	40	41-105
4-Methylphenol	930	590	63	6	40	48-109
N-Nitroso-di-n-prop.(1)	930	620	67	4	40	44-111
Hexachloroethane	930	540	58	0	40	40-102
Nitrobenzene	930	570	61	5	40	44-108
Isophorone	930	730	78	6	40	42-113
2-Nitrophenol	930	530	57	5	40	42-111
2,4-Dimethylphenol	930	600	64	4	40	37-107
2,4-Dichlorophenol	930	500	54	7	40	49-110
Naphthalene	930	540	58	3	40	44-112
4-Chloroaniline	930	470	50	8	40	4-102
bis(2-Chloroethoxy)meth	930	580	62	6	40	46-108
Hexachlorobutadiene	930	540	58	2	40	41-108
4-Chloro-3-Methylphenol	930	560	60	12	40	56-117
2-Methylnaphthalene	930	420	45*	2	40	46-110
Hexachlorocyclopentadie	930	570	61	0	40	10-118
2,4,6-Trichlorophenol	930	530	57	12	40	53-115
2,4,5-Trichlorophenol	930	510	55*	7	40	59-113
2-Chloronaphthalene	930	540	58	7	40	52-112
2-Nitroaniline	930	430	46*	6	40	63-117
Dimethylphthalate	930	580	62	14	40	62-117
Acenaphthylene	930	580	62	11	40	58-112
2,6-Dinitrotoluene	930	580	62	15	40	60-118
3-Nitroaniline	930	670	72	15	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	930	560	60	10	40	53-116
2,4-Dinitrophenol	930	220	24*	37	40	15-136
4-Nitrophenol	930	370	40*	5	40	50-129
Dibenzofuran	930	420	45*	8	40	61-112
2,4-Dinitrotoluene	930	560	60	14	40	59-123
Diethylphthalate	930	620	67	11	40	61-120
4-Chlorophenyl-phenylet	930	580	62	11	40	59-116
Fluorene	930	550	59*	13	40	63-115
4-Nitroaniline	930	830	89	5	40	35-124
4,6-Dinitro-2-methylphe	930	370	40	20	40	33-130
N-Nitrosodiphenylamine	930	940	101	16	40	50-150
4-Bromophenyl-phenyleth	930	540	58*	14	40	66-110
Hexachlorobenzene	930	560	60*	12	40	67-112
Pentachlorophenol	930	390	42	15	40	19-130
Phenanthrene	930	540	58*	14	40	70-115
Anthracene	930	540	58*	8	40	63-117
Carbazole	930	980	105	12	40	62-122
Di-n-butylphthalate	930	620	67*	12	40	70-120
Fluoranthene	930	580	62*	12	40	64-121
Pyrene	930	570	61*	15	40	66-120
Butylbenzylphthalate	930	600	64	16	40	63-123
3,3'-Dichlorobenzidine	930	440	47	14	40	8-124
Benzo(a)anthracene	930	600	64	12	40	50-129
Chrysene	930	600	64	13	40	41-150
bis(2-Ethylhexyl)phthal	930	630	61*	16	40	64-115
Di-n-octylphthalate	930	520	56*	16	40	69-137
Benzo(b)fluoranthene	930	540	58*	17	40	61-129
Benzo(k)fluoranthene	930	570	61*	12	40	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

0202

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - EPA Sample No.: SV1200406 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzo(a)pyrene	930	520	56*	12	40	66-119
Indeno(1,2,3-cd)pyrene	930	560	60	11	40	56-128
Dibenzo(a,h)anthracene	930	550	59	11	40	58-128
Benzo(g,h,i)perylene	930	530	57	12	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 60 outside limits
Spike Recovery: 24 out of 120 outside limits

COMMENTS: _____

0203

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3NLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		810	98	45-109
bis(2-Chloroethyl)Ether	830		740	89	43-104
2-Chlorophenol	830		700	84	43-107
2-Methylphenol	830		680	82	45-108
2,2'-oxybis(1-Chloropro	830		780	94	41-105
4-Methylphenol	830		730	88	48-109
N-Nitroso-di-n-prop.(1)	830		740	89	44-111
Hexachloroethane	830		670	81	40-102
Nitrobenzene	830		730	88	44-108
Isophorone	830		900	108	42-113
2-Nitrophenol	830		650	78	42-111
2,4-Dimethylphenol	830		450	54	37-107
2,4-Dichlorophenol	830		610	73	49-110
Naphthalene	830		650	78	44-112
4-Chloroaniline	830		290	35	4-102
bis(2-Chloroethoxy)meth	830		720	87	46-108
Hexachlorobutadiene	830		610	73	41-108
4-Chloro-3-Methylphenol	830		680	82	56-117
2-Methylnaphthalene	830		480	58	46-110
Hexachlorocyclopentadie	830		570	69	10-118
2,4,6-Trichlorophenol	830		660	80	53-115
2,4,5-Trichlorophenol	830		610	73	59-113
2-Chloronaphthalene	830		640	77	52-112
2-Nitroaniline	830		570	69	63-117
Dimethylphthalate	830		710	86	62-117
Acenaphthylene	830		680	82	58-112
2,6-Dinitrotoluene	830		730	88	60-118
3-Nitroaniline	830		740	89	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3NLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		660	80	53-116
2,4-Dinitrophenol	830		480	58	15-136
4-Nitrophenol	830		640	77	50-129
Dibenzofuran	830		500	60*	61-112
2,4-Dinitrotoluene	830		680	82	59-123
Diethylphthalate	830		730	88	61-120
4-Chlorophenyl-phenylet	830		680	82	59-116
Fluorene	830		650	78	63-115
4-Nitroaniline	830		900	108	35-124
4,6-Dinitro-2-methylphe	830		550	66	33-130
N-Nitrosodiphenylamine	830		1000	120	50-150
4-Bromophenyl-phenyleth	830		670	81	66-110
Hexachlorobenzene	830		680	82	67-112
Pentachlorophenol	830		570	69	19-130
Phenanthrene	830		680	82	70-115
Anthracene	830		660	80	63-117
Carbazole	830		1100	132*	62-122
Di-n-butylphthalate	830		750	90	70-120
Fluoranthene	830		680	82	64-121
Pyrene	830		730	88	66-120
Butylbenzylphthalate	830		760	92	63-123
3,3'-Dichlorobenzidine	830		580	70	8-124
Benzo(a)anthracene	830		740	89	50-129
Chrysene	830		740	89	41-150
bis(2-Ethylhexyl)phthal	830		760	92	64-115
Di-n-octylphthalate	830		610	73	69-137
Benzo(b)fluoranthene	830		660	80	61-129
Benzo(k)fluoranthene	830		700	84	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3NLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	830		660	80	66-119
Indeno(1,2,3-cd)pyrene	830		740	89	56-128
Dibenzo(a,h)anthracene	830		720	87	58-128
Benzo(g,h,i)perylene	830		770	93	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 60 outside limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	50		20	40	0-127
bis(2-Chloroethyl)Ether	50		42	84	46-109
2-Chlorophenol	50		40	80	22-117
2-Methylphenol	50		34	68	40-104
2,2'-oxybis(1-Chloropro	50		42	84	10-134
4-Methylphenol	50		35	70	35-106
N-Nitroso-di-n-prop.(1)	50		48	96	44-122
Hexachloroethane	50		40	80	24-104
Nitrobenzene	50		44	88	47-112
Isophorone	50		59	118	48-118
2-Nitrophenol	50		42	84	29-122
2,4-Dimethylphenol	50		18	36	14-109
2,4-Dichlorophenol	50		40	80	31-122
Naphthalene	50		40	80	38-117
4-Chloroaniline	50		19	38	0-152
bis(2-Chloroethoxy)meth	50		46	92	49-112
Hexachlorobutadiene	50		38	76	28-109
4-Chloro-3-Methylphenol	50		45	90	48-117
2-Methylnaphthalene	50		31	62	43-113
Hexachlorocyclopentadie	50		42	84	34-103
2,4,6-Trichlorophenol	50		45	90	34-127
2,4,5-Trichlorophenol	50		44	88	32-131
2-Chloronaphthalene	50		44	88	47-116
2-Nitroaniline	50		38	76	51-120
Dimethylphthalate	50		48	96	53-124
Acenaphthylene	50		47	94	50-119
2,6-Dinitrotoluene	50		49	98	52-122
3-Nitroaniline	50		53	106	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	50		46	92	50-121
2,4-Dinitrophenol	50		43	86	0-144
4-Nitrophenol	50		23	46	0-160
Dibenzofuran	50		35	70	51-122
2,4-Dinitrotoluene	50		48	96	52-126
Diethylphthalate	50		51	102	53-126
4-Chlorophenyl-phenylet	50		52	104	50-124
Fluorene	50		48	96	52-125
4-Nitroaniline	50		57	114	47-117
4,6-Dinitro-2-methylphe	50		45	90	3-151
N-Nitrosodiphenylamine	50		73	146	50-150
4-Bromophenyl-phenyleth	50		48	96	51-124
Hexachlorobenzene	50		47	94	52-124
Pentachlorophenol	50		44	88	5-125
Phenanthrene	50		48	96	52-128
Anthracene	50		48	96	52-127
Di-n-butylphthalate	50		52	104	56-132
Fluoranthene	50		49	98	53-130
Pyrene	50		50	100	53-131
Butylbenzylphthalate	50		52	104	54-128
3,3'-Dichlorobenzidine	50		46	92	41-117
Benzo(a)anthracene	50		50	100	56-124
Chrysene	50		53	106	53-123
bis(2-Ethylhexyl)phthal	50		54	108	56-127
Di-n-octylphthalate	50		45	90	59-138
Benzo(b)fluoranthene	50		48	96	58-126
Benzo(k)fluoranthene	50		49	98	60-124
Benzo(a)pyrene	50		48	96	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	50		49	98	23-152
Dibenzo(a,h)anthracene	50		49	98	60-122
Benzo(g,h,i)perylene	50		48	96	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	50	20	40	0	40	0-127
bis(2-Chloroethyl)Ether	50	42	84	0	40	46-109
2-Chlorophenol	50	40	80	0	40	22-117
2-Methylphenol	50	34	68	0	40	40-104
2,2'-oxybis(1-Chloropro	50	42	84	0	40	10-134
4-Methylphenol	50	35	70	0	40	35-106
N-Nitroso-di-n-prop.(1)	50	48	96	0	40	44-122
Hexachloroethane	50	38	76	5	40	24-104
Nitrobenzene	50	43	86	2	40	47-112
Isophorone	50	59	118	0	40	48-118
2-Nitrophenol	50	42	84	0	40	29-122
2,4-Dimethylphenol	50	19	38	5	40	14-109
2,4-Dichlorophenol	50	40	80	0	40	31-122
Naphthalene	50	39	78	2	40	38-117
4-Chloroaniline	50	18	36	5	40	0-152
bis(2-Chloroethoxy)meth	50	46	92	0	40	49-112
Hexachlorobutadiene	50	37	74	3	40	28-109
4-Chloro-3-Methylphenol	50	46	92	2	40	48-117
2-Methylnaphthalene	50	31	62	0	40	43-113
Hexachlorocyclopentadie	50	41	82	2	40	34-103
2,4,6-Trichlorophenol	50	45	90	0	40	34-127
2,4,5-Trichlorophenol	50	43	86	2	40	32-131
2-Chloronaphthalene	50	44	88	0	40	47-116
2-Nitroaniline	50	38	76	0	40	51-120
Dimethylphthalate	50	49	98	2	40	53-124
Acenaphthylene	50	46	92	2	40	50-119
2,6-Dinitrotoluene	50	51	102	4	40	52-122
3-Nitroaniline	50	57	114	7	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	50	46	92	0	40	50-121
2,4-Dinitrophenol	50	45	90	4	40	0-144
4-Nitrophenol	50	23	46	0	40	0-160
Dibenzofuran	50	35	70	0	40	51-122
2,4-Dinitrotoluene	50	49	98	2	40	52-126
Diethylphthalate	50	52	104	2	40	53-126
4-Chlorophenyl-phenylet	50	52	104	0	40	50-124
Fluorene	50	49	98	2	40	52-125
4-Nitroaniline	50	59	118*	3	40	47-117
4,6-Dinitro-2-methylphe	50	47	94	4	40	3-151
N-Nitrosodiphenylamine	50	71	142	3	40	50-150
4-Bromophenyl-phenyleth	50	48	96	0	40	51-124
Hexachlorobenzene	50	48	96	2	40	52-124
Pentachlorophenol	50	45	90	2	40	5-125
Phenanthrene	50	48	96	0	40	52-128
Anthracene	50	49	98	2	40	52-127
Di-n-butylphthalate	50	53	106	2	40	56-132
Fluoranthene	50	49	98	0	40	53-130
Pyrene	50	52	104	4	40	53-131
Butylbenzylphthalate	50	53	106	2	40	54-128
3,3'-Dichlorobenzidine	50	51	102	10	40	41-117
Benzo(a)anthracene	50	52	104	4	40	56-124
Chrysene	50	54	108	2	40	53-123
bis(2-Ethylhexyl)phthal	50	56	112	4	40	56-127
Di-n-octylphthalate	50	47	94	4	40	59-138
Benzo(b)fluoranthene	50	49	98	2	40	58-126
Benzo(k)fluoranthene	50	51	102	4	40	60-124
Benzo(a)pyrene	50	49	98	2	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	50	48	96	2	40	23-152
Dibenzo(a,h)anthracene	50	48	96	2	40	60-122
Benzo(g,h,i)perylene	50	47	94	2	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 59 outside limits
Spike Recovery: 1 out of 118 outside limits

COMMENTS: _____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2290 Date Analyzed: 03/13/03

Instrument ID: S3 Time Analyzed: 0935

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	296827	7.91	1000514	10.35	540570	13.89
	UPPER LIMIT	593654	8.41	2001028	10.85	1081140	14.39
	LOWER LIMIT	148414	7.41	500257	9.85	270285	13.39
	EPA SAMPLE NO.						
01	SBLK3N	314985	7.92	1060640	10.35	565638	13.89
02	S3NLCS	276912	7.91	959286	10.34	513193	13.89
03	SBLK3P	315737	7.92	1048915	10.35	530067	13.88
04	S3PLCS	320930	7.92	1082711	10.35	589049	13.89
05	S3PLCSD	328433	7.91	1100394	10.35	599747	13.89
06	FB-021203	326004	7.91	1072362	10.35	549764	13.88
07	RB-021203	295529	7.91	1005166	10.34	529472	13.88
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2290 Date Analyzed: 03/13/03

Instrument ID: S3 Time Analyzed: 0935

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	807628	16.93	781859	22.35	462742	25.17
	UPPER LIMIT	1615256	17.43	1563718	22.85	925484	25.67
	LOWER LIMIT	403814	16.43	390930	21.85	231371	24.67
	EPA SAMPLE NO.						
01	SBLK3N	848208	16.93	782126	22.34	524637	25.17
02	S3NLCS	745492	16.93	696256	22.34	448519	25.16
03	SBLK3P	765491	16.93	668223	22.34	439469	25.16
04	S3PLCS	873095	16.93	842948	22.35	501573	25.17
05	S3PLCSD	886025	16.93	831463	22.35	486349	25.16
06	FB-021203	787014	16.92	673295	22.34	420421	25.16
07	RB-021203	796003	16.92	748269	22.34	490475	25.16
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2308 Date Analyzed: 03/14/03

Instrument ID: S3 Time Analyzed: 0012

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	285363	7.91	975282	10.35	539099	13.89
	UPPER LIMIT	570726	8.41	1950564	10.85	1078198	14.39
	LOWER LIMIT	142682	7.41	487641	9.85	269550	13.39
	EPA SAMPLE NO.						
01	SV1180406	276059	7.91	923632	10.34	475107	13.88
02	SVDUP06	300136	7.91	1036423	10.34	578550	13.88
03	SV1190507	283624	7.91	954689	10.34	510583	13.88
04	SV1160204	275726	7.91	940320	10.34	520841	13.88
05	WOD-SS-117	287985	7.91	937987	10.34	490958	13.88
06	SV1170102	279093	7.91	953205	10.34	528881	13.88
07	WOD-SS-118	259855	7.91	901877	10.34	518981	13.88
08	SV1200406	270949	7.91	941785	10.34	537111	13.88
09	SV1200406MS	277037	7.91	944947	10.35	522896	13.88
10	SV1200406MSD	300713	7.91	1036666	10.34	584630	13.88
11	WOD-SS-115	271564	7.91	935295	10.34	545892	13.88
12	WOD-SS-116	298874	7.91	1059173	10.34	625689	13.88
13	WOD-SS-119	227382	7.91	790912	10.34	473422	13.88
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22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2308 Date Analyzed: 03/14/03

Instrument ID: S3 Time Analyzed: 0012

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	828361	16.93	818423	22.35	474767	25.16
	UPPER LIMIT	1656722	17.43	1636846	22.85	949534	25.66
	LOWER LIMIT	414181	16.43	409212	21.85	237384	24.66
	EPA SAMPLE NO.						
01	SV1180406	687151	16.92	608660	22.34	403712	25.16
02	SVDUP06	928373	16.92	940964	22.34	643979	25.16
03	SV1190507	770903	16.92	728174	22.34	492154	25.16
04	SV1160204	806451	16.92	787262	22.34	541892	25.16
05	WOD-SS-117	721250	16.92	652267	22.34	415586	25.16
06	SV1170102	836723	16.92	822429	22.34	556073	25.16
07	WOD-SS-118	840336	16.92	860183	22.34	571495	25.16
08	SV1200406	863529	16.92	863353	22.34	543194	25.16
09	SV1200406MS	810631	16.92	795691	22.34	507405	25.16
10	SV1200406MSD	924596	16.92	929695	22.34	612246	25.16
11	WOD-SS-115	894029	16.92	787803	22.34	415244	25.16
12	WOD-SS-116	1009070	16.93	772084	22.35	354525	25.17
13	WOD-SS-119	776928	16.93	683118	22.34	361741	25.17
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2343 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 0031

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	203377	7.83	628802	10.27	303104	13.81
	UPPER LIMIT	406754	8.33	1257604	10.77	606208	14.31
	LOWER LIMIT	101689	7.33	314401	9.77	151552	13.31
	EPA SAMPLE NO.						
01	WOD-SS-120	208045	7.83	688291	10.26	358767	13.80
02							
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22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2343 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 0031

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	419800	16.84	366977	22.25	224020	25.05
	UPPER LIMIT	839600	17.34	733954	22.75	448040	25.55
	LOWER LIMIT	209900	16.34	183489	21.75	112010	24.55
	EPA SAMPLE NO.						
01	WOD-SS-120	526680	16.84	436349	22.25	242754	25.05
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2362 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 1632

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	166695	7.77	605343	10.20	345580	13.73
	UPPER LIMIT	333390	8.27	1210686	10.70	691160	14.23
	LOWER LIMIT	83348	7.27	302672	9.70	172790	13.23
	EPA SAMPLE NO.						
01	SV1150305	158413	7.77	574869	10.20	313803	13.73
02							
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22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab File ID (Standard): S3C2362 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 1632

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	526188	16.77	471287	22.19	276572	24.96
	UPPER LIMIT	1052376	17.27	942574	22.69	553144	25.46
	LOWER LIMIT	263094	16.27	235644	21.69	138286	24.46
	EPA SAMPLE NO.						
01	SV1150305	467728	16.76	352760	22.17	201932	24.95
02							
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

Data File: S3C2316.D
Report Date: 17-Mar-2003 21:17

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030313B.B\S3C2316.D
Lab Smp Id: B0258-06A Client Smp ID: WOD-SS-117
Inj Date : 14-MAR-2003 05:35
Operator : JC Inst ID: s3.i
Smp Info : B0258-06A,WOD-SS-117,5802,JC,,B0258
Misc Info : 0,,,2,,,,30.3,33,,26-FEB-03,13-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030313B.B\S3_8270C.m
Meth Date : 14-Mar-2003 13:43 mtl Quant Type: ISTD
Cal Date : 12-MAR-2003 15:21 Cal File: S3C2284.D ✓
Als bottle: 51
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848SL.sub
Target Version: 4.03
Processing Host: TARGET1

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.300	Weight of sample extracted (g)
M	33.000	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
$	3 2-Fluorophenol	112	5.716	5.696	(0.722)	439473	54.3878	2700
	101 Benzaldehyde	77	7.169	7.155	(0.906)	6094	1.77245	87(a)
$	5 Phenol-d5	99	7.313	7.320	(0.924)	505382	53.1052	2600
$	9 2-Chlorophenol-d4	132	7.527	7.529	(0.951)	489329	52.6605	2600
*	12 1,4-Dichlorobenzene-d4	152	7.911	7.913	(1.000)	287985	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	8.194	8.197	(1.036)	199304	29.9575	1500
$	22 Nitrobenzene-d5	82	8.969	8.982	(0.867)	340793	33.0189	1600
*	31 Naphthalene-d8	136	10.342	10.349	(1.000)	937987	40.0000	
$	41 2-Fluorobiphenyl	172	12.522	12.534	(0.902)	635977	32.8233	1600
*	48 Acenaphthene-d10	164	13.879	13.886	(1.000)	490958	40.0000	
$	60 2,4,6-Tribromophenol	330	15.503	15.510	(0.916)	116303	55.6605	2700
*	64 Phenanthrene-d10	188	16.918	16.931	(1.000)	721250	40.0000	
$	72 Terphenyl-d14	244	20.204	20.211	(0.905)	566842	38.5829	1900

Data File: S3C2316.D
Report Date: 17-Mar-2003 21:17

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 76 Chrysene-d12	240	22.335	22.348	(1.000)	652267	40.0000	
* 83 Perylene-d12	264	25.156	25.163	(1.000)	415586	40.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

3/17/03

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0258
SUBJECT	SVOA		
BASED ON	8270	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

WOD-SS-117 3/14/03

Benzaldehyde 87 ug/kg

$$\frac{(6094\ \text{area})(40\ \text{ng})(1000\ \text{ml})(1)(1)}{(287985\ \text{area})(0.477)(30.3\ \text{g})(1\ \text{ml})(0.67)} = 87.4\ \text{ng/g}$$

≈ 87 ug/kg

FORM 4
PCB METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

BBLK1K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab Sample ID: MB-5748 Lab File ID: E1D9479F

Matrix (soil/water) SOIL Extraction: (SepF/Cont/Sonc) SONC

Sulfur Cleanup (Y/N) Y Date Extracted: 02/21/03

Date Analyzed (1): 02/25/03 Date Analyzed (2): 02/25/03

Time Analyzed (1): 2118 Time Analyzed (2): 2118

Instrument ID (1): E1 Instrument ID (2): E1

GC Column (1): RTXCLPPEST 2 ID: 0.53(mm) GC Column (2): RTXCLPPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	B1KLCS	LCS-5748	02/25/03	02/25/03
02	WOD-SS-116	B0258-04A	02/25/03	02/25/03
03	SV1160204	B0258-05A	02/26/03	02/26/03
04	WOD-SS-117	B0258-06A	02/26/03	02/26/03
05	SV1170102	B0258-07A	02/26/03	02/26/03
06	WOD-SS-118	B0258-08A	02/26/03	02/26/03
07	SV1180406	B0258-09A	02/26/03	02/26/03
08	WOD-SS-119	B0258-10A	02/26/03	02/26/03
09	SVDUP06	B0258-11A	02/26/03	02/26/03
10	SV1190507	B0258-12A	02/26/03	02/26/03
11	WOD-SS-120	B0258-14A	02/26/03	02/26/03
12	SV1200406	B0258-15A	02/26/03	02/26/03
13	WOD-SS-115	B0258-02A	02/27/03	02/27/03
14	SV1150305	B0258-03A	02/27/03	02/27/03
15	SV1200406MS	B0258-15AMS	02/27/03	02/27/03
16	SV1200406MSD	B0258-15AMSD	02/27/03	02/27/03
17				
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COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: MB-5748

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9479F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 4
PCB METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

BBLK1L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Lab Sample ID: MB-5680 Lab File ID: E1D9441F

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) Y Date Extracted: 02/18/03

Date Analyzed (1): 02/23/03 Date Analyzed (2): 02/23/03

Time Analyzed (1): 0352 Time Analyzed (2): 0352

Instrument ID (1): E1 Instrument ID (2): E1

GC Column (1): RTXCLPPEST 2 ID: 0.53(mm) GC Column (2): RTXCLPPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	B1LLCS	LCS-5680	02/23/03	02/23/03
02	B1LLCSD	LCSD-5680	02/23/03	02/23/03
03	FB-021203	B0258-13D	02/23/03	02/23/03
04	RB-021203	B0258-16D	02/23/03	02/23/03
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) WATER Lab Sample ID: MB-5680

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9441F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11582.000	0.01	2.9	15.0
(2)	24115.960	23131.000	0.01	4.1	15.0
(3)	14202.320	13615.000	0.01	4.1	15.0
Aroclor-1260	29455.240	28477.000	0.01	3.3	15.0
(2)	40190.280	43668.000	0.01	8.6	15.0
(3)	23147.960	23315.000	0.01	0.7	15.0
Tetrachloro-m-xylene	503358.00	515350.00	0.01	2.4	15.0
Decachlorobiphenyl	581298.00	566950.00	0.01	2.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45838.000	0.01	2.4	15.0
(2)	24183.600	23075.000	0.01	4.6	15.0
(3)	20737.640	20030.000	0.01	3.4	15.0
Aroclor-1260	45409.320	45242.000	0.01	0.4	15.0
(2)	46248.440	46834.000	0.01	1.3	15.0
(3)	64584.960	69479.000	0.01	7.6	15.0
Tetrachloro-m-xylene	741526.00	731650.00	0.01	1.3	15.0
Decachlorobiphenyl	711418.00	760550.00	0.01	6.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11618.000	0.01	2.6	15.0
(2)	24115.960	22936.000	0.01	4.9	15.0
(3)	14202.320	13450.000	0.01	5.3	15.0
Aroclor-1260	29455.240	28739.000	0.01	2.4	15.0
(2)	40190.280	43187.000	0.01	7.4	15.0
(3)	23147.960	23193.000	0.01	0.2	15.0
Tetrachloro-m-xylene	503358.00	516500.00	0.01	2.6	15.0
Decachlorobiphenyl	581298.00	564750.00	0.01	2.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45717.000	0.01	2.6	15.0
(2)	24183.600	23000.000	0.01	4.9	15.0
(3)	20737.640	20262.000	0.01	2.3	15.0
Aroclor-1260	45409.320	44843.000	0.01	1.2	15.0
(2)	46248.440	46669.000	0.01	0.9	15.0
(3)	64584.960	69305.000	0.01	7.3	15.0
Tetrachloro-m-xylene	741526.00	740050.00	0.01	0.2	15.0
Decachlorobiphenyl	711418.00	766150.00	0.01	7.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/25/03 Time: 2006

Lab File ID: E1D9477F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10501.000	0.01	12.0	15.0	
(2)	24115.960	20054.000	0.01	16.8	15.0	<-
(3)	14202.320	11825.000	0.01	16.7	15.0	<-
Aroclor-1260	29455.240	25201.000	0.01	14.4	15.0	
(2)	40190.280	38482.000	0.01	4.2	15.0	
(3)	23147.960	19963.000	0.01	13.8	15.0	
Tetrachloro-m-xylene	503358.00	467050.00	0.01	7.2	15.0	
Decachlorobiphenyl	581298.00	499800.00	0.01	14.0	15.0	

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/25/03 Time: 2006

Lab File ID: E1D9477R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	41761.000	0.01	11.1	15.0
(2)	24183.600	20863.000	0.01	13.7	15.0
(3)	20737.640	18573.000	0.01	10.4	15.0
Aroclor-1260	45409.320	41967.000	0.01	7.6	15.0
(2)	46248.440	43109.000	0.01	6.8	15.0
(3)	64584.960	63083.000	0.01	2.3	15.0
Tetrachloro-m-xylene	741526.00	673100.00	0.01	9.2	15.0
Decachlorobiphenyl	711418.00	680800.00	0.01	4.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/26/03 Time: 0531

Lab File ID: E1D9493F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10586.000	0.01	11.3	15.0
(2)	24115.960	20810.000	0.01	13.7	15.0
(3)	14202.320	12196.000	0.01	14.1	15.0
Aroclor-1260	29455.240	25550.000	0.01	13.2	15.0
(2)	40190.280	39094.000	0.01	2.7	15.0
(3)	23147.960	20797.000	0.01	10.2	15.0
Tetrachloro-m-xylene	503358.00	467600.00	0.01	7.1	15.0
Decachlorobiphenyl	581298.00	513250.00	0.01	11.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/26/03 Time: 0531

Lab File ID: E1D9493R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	42712.000	0.01	9.0	15.0
(2)	24183.600	21285.000	0.01	12.0	15.0
(3)	20737.640	18829.000	0.01	9.2	15.0
Aroclor-1260	45409.320	43041.000	0.01	5.2	15.0
(2)	46248.440	44400.000	0.01	4.0	15.0
(3)	64584.960	65572.000	0.01	1.5	15.0
Tetrachloro-m-xylene	741526.00	678050.00	0.01	8.6	15.0
Decachlorobiphenyl	711418.00	716450.00	0.01	0.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/26/03 Time: 1309

Lab File ID: E1D9506F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11013.000	0.01	7.7	15.0
(2)	24115.960	21764.000	0.01	9.8	15.0
(3)	14202.320	12684.000	0.01	10.7	15.0
Aroclor-1260	29455.240	26809.000	0.01	9.0	15.0
(2)	40190.280	40810.000	0.01	1.5	15.0
(3)	23147.960	21482.000	0.01	7.2	15.0
Tetrachloro-m-xylene	503358.00	484400.00	0.01	3.8	15.0
Decachlorobiphenyl	581298.00	528300.00	0.01	9.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/26/03 Time: 1309

Lab File ID: E1D9506R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43721.000	0.01	6.9	15.0
(2)	24183.600	21933.000	0.01	9.3	15.0
(3)	20737.640	19397.000	0.01	6.5	15.0
Aroclor-1260	45409.320	43655.000	0.01	3.9	15.0
(2)	46248.440	44641.000	0.01	3.5	15.0
(3)	64584.960	66876.000	0.01	3.5	15.0
Tetrachloro-m-xylene	741526.00	700100.00	0.01	5.6	15.0
Decachlorobiphenyl	711418.00	737250.00	0.01	3.6	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/27/03 Time: 1210

Lab File ID: E1D9513F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11004.000	0.01	7.8	15.0
(2)	24115.960	21096.000	0.01	12.5	15.0
(3)	14202.320	12263.000	0.01	13.6	15.0
Aroclor-1260	29455.240	26685.000	0.01	9.4	15.0
(2)	40190.280	40500.000	0.01	0.8	15.0
(3)	23147.960	21191.000	0.01	8.4	15.0
Tetrachloro-m-xylene	503358.00	479900.00	0.01	4.7	15.0
Decachlorobiphenyl	581298.00	523950.00	0.01	9.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/27/03 Time: 1210

Lab File ID: E1D9513R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	42686.000	0.01	9.1	15.0
(2)	24183.600	21593.000	0.01	10.7	15.0
(3)	20737.640	19116.000	0.01	7.8	15.0
Aroclor-1260	45409.320	42581.000	0.01	6.2	15.0
(2)	46248.440	43735.000	0.01	5.4	15.0
(3)	64584.960	65202.000	0.01	1.0	15.0
Tetrachloro-m-xylene	741526.00	692900.00	0.01	6.6	15.0
Decachlorobiphenyl	711418.00	703850.00	0.01	1.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2147

Lab File ID: E1D9529F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11250.000	0.01	5.7	15.0
(2)	24115.960	21994.000	0.01	8.8	15.0
(3)	14202.320	12851.000	0.01	9.5	15.0
Aroclor-1260	29455.240	27838.000	0.01	5.5	15.0
(2)	40190.280	42216.000	0.01	5.0	15.0
(3)	23147.960	22380.000	0.01	3.3	15.0
Tetrachloro-m-xylene	503358.00	495250.00	0.01	1.6	15.0
Decachlorobiphenyl	581298.00	549700.00	0.01	5.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID: E1 Calibration Date: 02/27/03 Time: 2147

Lab File ID: E1D9529R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44357.000	0.01	5.5	15.0
(2)	24183.600	22268.000	0.01	7.9	15.0
(3)	20737.640	19763.000	0.01	4.7	15.0
Aroclor-1260	45409.320	44269.000	0.01	2.5	15.0
(2)	46248.440	45893.000	0.01	0.8	15.0
(3)	64584.960	67428.000	0.01	4.4	15.0
Tetrachloro-m-xylene	741526.00	715400.00	0.01	3.5	15.0
Decachlorobiphenyl	711418.00	743400.00	0.01	4.5	15.0

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660B1	AR1660B1	02/23/03	0242	6.78	22.14
23	BBLK1L	MB-5680	02/23/03	0352	6.78	22.13
24	B1LLCS	LCS-5680	02/23/03	0427	6.78	22.14
25	B1LLCSD	LCSD-5680	02/23/03	0503	6.78	22.13
26	FB-021203	B0258-13D	02/23/03	0724	6.78	22.14
27	RB-021203	B0258-16D	02/23/03	0759	6.78	22.14
28	AR1660B2	AR1660B2	02/23/03	1131	6.78	22.14
29	AR1660BU	AR1660BU	02/25/03	2006	6.78	22.14
30	BBLK1K	MB-5748	02/25/03	2118	6.78	22.14
31	B1KLCS	LCS-5748	02/25/03	2153	6.78	22.14
32	WOD-SS-116	B0258-04A	02/25/03	2338	6.78	22.14

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	SV1160204	B0258-05A	02/26/03	0014	6.78	22.14
02	WOD-SS-117	B0258-06A	02/26/03	0049	6.78	22.14
03	SV1170102	B0258-07A	02/26/03	0124	6.78	22.14
04	WOD-SS-118	B0258-08A	02/26/03	0159	6.78	22.14
05	SV1180406	B0258-09A	02/26/03	0235	6.78	22.14
06	AR1660BV	AR1660BV	02/26/03	0531	6.78	22.14
07	WOD-SS-119	B0258-10A	02/26/03	0641	6.78	22.14
08	SVDUP06	B0258-11A	02/26/03	0716	6.78	22.14
09	SV1190507	B0258-12A	02/26/03	0751	6.78	22.14
10	WOD-SS-120	B0258-14A	02/26/03	0827	6.78	22.13
11	SV1200406	B0258-15A	02/26/03	0902	6.78	22.14
12	AR1660BW	AR1660BW	02/26/03	1309	6.78	22.14
13	AR1660BA	AR1660BA	02/27/03	1210	6.78	22.14
14	WOD-SS-115	B0258-02A	02/27/03	1320	6.78	22.13
15	SV1150305	B0258-03A	02/27/03	1356	6.78	22.14
16	SV1200406MS	B0258-15AMS	02/27/03	1431	6.78	22.14
17	SV1200406MSD	B0258-15AMSD	02/27/03	1517	6.79	22.14
18	AR1660BB	AR1660BB	02/27/03	2147	6.78	22.13
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660B1	AR1660B1	02/23/03	0242	8.44	25.35
23	BBLK1L	MB-5680	02/23/03	0352	8.44	25.34
24	B1LLCS	LCS-5680	02/23/03	0427	8.44	25.34
25	B1LLCSD	LCSD-5680	02/23/03	0503	8.45	25.34
26	FB-021203	B0258-13D	02/23/03	0724	8.44	25.35
27	RB-021203	B0258-16D	02/23/03	0759	8.44	25.34
28	AR1660B2	AR1660B2	02/23/03	1131	8.44	25.34
29	AR1660BU	AR1660BU	02/25/03	2006	8.45	25.35
30	BBLK1K	MB-5748	02/25/03	2118	8.45	25.35
31	B1KLCS	LCS-5748	02/25/03	2153	8.45	25.35
32	WOD-SS-116	B0258-04A	02/25/03	2338	8.45	25.35

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT	#	DCB RT	#
01	SV1160204	B0258-05A	02/26/03	0014	8.45		25.36	
02	WOD-SS-117	B0258-06A	02/26/03	0049	8.45		25.35	
03	SV1170102	B0258-07A	02/26/03	0124	8.45		25.35	
04	WOD-SS-118	B0258-08A	02/26/03	0159	8.45		25.35	
05	SV1180406	B0258-09A	02/26/03	0235	8.45		25.35	
06	AR1660BV	AR1660BV	02/26/03	0531	8.45		25.35	
07	WOD-SS-119	B0258-10A	02/26/03	0641	8.45		25.35	
08	SVDUP06	B0258-11A	02/26/03	0716	8.45		25.35	
09	SV1190507	B0258-12A	02/26/03	0751	8.45		25.35	
10	WOD-SS-120	B0258-14A	02/26/03	0827	8.45		25.35	
11	SV1200406	B0258-15A	02/26/03	0902	8.45		25.35	
12	AR1660BW	AR1660BW	02/26/03	1309	8.45		25.35	
13	AR1660BA	AR1660BA	02/27/03	1210	8.45		25.35	
14	WOD-SS-115	B0258-02A	02/27/03	1320	8.45		25.35	
15	SV1150305	B0258-03A	02/27/03	1356	8.44		25.35	
16	SV1200406MS	B0258-15AMS	02/27/03	1431	8.45		25.35	
17	SV1200406MSD	B0258-15AMSD	02/27/03	1517	8.45		25.35	
18	AR1660BB	AR1660BB	02/27/03	2147	8.44		25.34	
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1K	74	77	70	82			0
02	B1KLCS	76	78	72	84			0
03	WOD-SS-116	80	81	75	85			0
04	SV1160204	59	61	57	65			0
05	WOD-SS-117	73	76	69	79			0
06	SV1170102	57	59	56	62			0
07	WOD-SS-118	73	76	68	78			0
08	SV1180406	64	67	61	70			0
09	WOD-SS-119	72	75	70	80			0
10	SVDUP06	131	140	118	139			0
11	SV1190507	66	69	63	70			0
12	WOD-SS-120	51	52	50	57			0
13	SV1200406	58	59	56	64			0
14	WOD-SS-115	78	79	71	80			0
15	SV1150305	55	64	54	60			0
16	SV1200406MS	61	64	60	65			0
17	SV1200406MSD	68	69	66	73			0
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (42-147)
S2 (DCB) = Decachlorobiphenyl (29-155)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1L	89	90	94	102			0
02	B1LLCS	97	93	100	109			0
03	B1LLCSD	94	88	97	106			0
04	FB-021203	87	90	86	95			0
05	RB-021203	88	91	86	94			0
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
SOIL PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: SV1200406

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	360	0.00	230	64	62-155
Aroclor-1260	360	0.00	250	69	56-173

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	360	260	72	12	40	62-155
Aroclor-1260	360	280	78	12	40	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: B1KLCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		240	73	62-155
Aroclor-1260	330		270	82	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix Spike - Sample No.: B1LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		9.3	93	45-162
Aroclor-1260	10		9.9	99	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	9.2	92	1	40	45-162
Aroclor-1260	10	9.8	98	1	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1200406MS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix: (soil/water) SOIL Lab Sample ID: B0258-15AMS

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9517F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	230	
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	250	

Data File: E1D9517F.D
Report Date: 04-Mar-2003 15:18

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227F.B\E1D9517F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227R.B\E1D9517R.D
Inj Date : 27-FEB-2003 14:31
Sample Info: B0258-15AMS,SV1200406MS,MB-5748,pcb.sub,,
Misc Info : 3,,MS,2,,,,,,,21-FEB-03,13-FEB-03,B0258
Cal Date : 04-MAR-2003 14:20
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030227R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.800	Weight of sample extracted (g)
M	11.000	% Moisture

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/Kg)	Conc#2 (ug/Kg)	Target Range	Ratio
Tetrachloro-m-xylene	6.780	8.447	12238	19026	8.9	9.4		100.00
Decachlorobiphenyl	22.137	25.347	13901	18556	8.7	9.5		100.00
Aroclor-1016	11.997	12.783	7702	29633	240	230	80.00- 120.00	100.00
	10.453	13.173	15347	15390	230	230	175.50- 215.50	199.26
	10.827	14.520	8847	13507	230	240	94.23- 134.23	114.87
			Average of Peak Amounts =		230	230		
Aroclor-1260	16.797	18.573	18505	30352	230	240	80.00- 120.00	100.00
	18.567	19.510	29728	30764	270	240	131.65- 171.65	160.65
	19.283	21.207	15867	45450	250	260	60.39- 100.39	85.74
			Average of Peak Amounts =		250	250		

1005

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0258
SUBJECT	PCBs		
BASED ON	8082	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

WOD-SU-120-0406 MS

Aroclor-1260 250 ug/kg

(1260)	(CF)
30352	44303
30764	45836
45456	64047

$$\frac{(35522 \text{ area})(10{,}000 \text{ ul})(1)(1)}{(51395.3 \text{ area})(30.8 \text{ g})(0.89)(1 \text{ ul})} = 252 \text{ ng/L}$$

= 252 ug/kg

	Sample		Duplicate			
	WOD-SU-118-0406		**WOD-SU-DUP06**			
	UG/KG		UG/KG			
Acetone	10.0	B	12.0	B	18.2	2
Methylene chloride	3.0	B	3.0	B	0.0	0
SVOA	NDs		NDs			
PCBS	NDs		NDs			

NDs = All reported results were non-detects.

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 9, 2003**

FROM: **ERIN M. FAUST** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS, pH AND TOC**
CTO 848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0258

SAMPLES: 13/Soils/

WOD-SS-115	WOD-SS-116	WOD-SS-117
WOD-SS-118	WOD-SS-119	WOD-SS-120
WOD-SU-115-0305	WOD-SU-116-0204	WOD-SU-117-0102
WOD-SU-118-0406	WOD-SU-119-0507	WOD-SU-120-0406
WOD-SU-DUP06		

2/Aqueous/

RB-021203 FB-021203

Overview

The sample set for CTO 848, SDG B0258, NASA Wallops Island, consists of six (6) surface soil samples, seven (7) subsurface soil samples and two (2) aqueous field blanks, RB-021203 and FB-021203. One (1) field duplicate pair (WOD-SU-DUP06 / WOD-SU-118-0406) is included within this SDG.

The surface soil samples (WOD-SS-115, WOD-SS-116, WOD-SS-117, WOD-SS-118, WOD-SS-119 and WOD-SS-120) were analyzed for target analyte list (TAL) metals, pH and grain size. The subsurface soil samples (WOD-SU-115-0305, WOD-SU-116-0204, WOD-SU-117-0102, WOD-SU-118-0406, WOD-SU-119-0507, WOD-SU-120-0406 and WOD-SU-DUP06) were analyzed for TAL metals only. Samples RB-021203 and FB-021203 were analyzed for TAL metals and total organic carbon (TOC). The samples were collected by Tetra Tech NUS on February 12, 2003 and analyzed by Mitkem Corporation. Metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 methods 7470A and 7471A. Analyses for pH were conducted using SW-846 method 9045C. Analyses for TOC were conducted using EPA method 415.1. Grain size analyses were conducted using ASTM method D422.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, post digestion spike results, laboratory duplicate results, field duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) instrumentation. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) instrumentation.

Areas of concern with respect to data quality are listed below.

Minor Problems

- Analyses for pH should be conducted immediately. The samples were received at the laboratory on 2/13/03 and were analyzed one day later on 2/14/03. All results reported for pH were qualified as estimated, "J".

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Samples Affected: All soil samples

Analyte	Maximum Concentration	Action Level
Antimony	5.5 µg/L	1.38 mg/kg
Chromium[(1)]	0.04 mg/kg	0.20 mg/kg
Copper[(1)]	1.428 mg/kg	7.14 mg/kg
Iron[(1)]	2.182 mg/kg	10.91 mg/kg
Magnesium	8.5 µg/L	2.125 mg/kg
Manganese[(1)]	0.291 mg/kg	1.455 mg/kg
Nickel[(1)]	0.078 mg/kg	0.39 mg/kg
Potassium	420.3 µg/L	105.08 mg/kg
Sodium	259 µg/L	64.75 mg/kg
Zinc[(1)]	1.207 mg/kg	6.04 mg/kg

[(1)] Maximum contamination present in a solid preparation blank.

An action level of five times the maximum contaminant level has been established to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results < the action level reported for antimony, copper, potassium, sodium and zinc were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetected.

- The interfering analytes aluminum and iron were present in samples WOD-SS-119 and WOD-SU-119-0507 at concentrations that were comparable to the levels of aluminum and iron in the Interference Check Sample (ICS) solution. Several analytes namely antimony, arsenic, cadmium, chromium, cobalt, copper, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium and vanadium were present in the ICS solution at concentrations which exceeded the absolute value of the Instrument Detection Limit (IDL). Interference affects exist for arsenic, cadmium, selenium and silver in the affected samples. The nondetected results reported for selenium were qualified as biased low, "UL". The positive results reported for arsenic and silver were qualified as biased low, "L". The positive results reported for cadmium were qualified as biased high, "K".

- Matrix Spike (MS) percent recovery for antimony was < 75% quality control limit, affecting the soil matrix. The nondetected result reported for sample WOD-SU-116-0204 was qualified as biased low, "UL". No validation action was required for the remaining samples because all other results were qualified "B" as a result of laboratory blank contamination.

Notes

The field and rinsate blanks were not used to establish blank action levels and were not qualified due to laboratory blank contamination.

Although the COC indicated pH and grain size analyses for sample WOD-SU-119-0507; these analyses were not performed on this sample.

The laboratory incorrectly identified several sample IDs by labeling sections of the sample ID as "SV" when it should have been "SU". The sample IDs were corrected in the electronic database.

The grain size results were not put into the electronic database, however, the sample result forms are included within Appendix B.

Contract Required Detection Limit (CRDL) percent recoveries could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the Interference Check Standard A (ICSA) on the Form 4. The data reviewer printed the ICSA raw data pages from the PDF file.

TOC results for the soil samples are included within a separate SDG.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. pH results were qualified due to holding time noncompliance.

Other Factors Affecting Data Quality: Antimony was qualified due to MS noncompliance. Several analytes were qualified due to ICP noncompliance.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 as amended for use within USEPA Region III.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the Quality Assurance Project Plan (QAPP)."

Erin M Faust

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Edward Saltmarsh for

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

K - Positive result is considered biased high, "K", as a result of technical noncompliances.

L - Positive result is considered biased low, "L", as a result of technical noncompliances.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02A
qc_type	NM
units	MG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1320		
ANTIMONY	0.17	B	A
ARSENIC	1.2		
BARIUM	4.0		
BERYLLIUM	0.09		
CADMIUM	0.04		
CALCIUM	41.8		
CHROMIUM	2.3		
COBALT	0.32		
COPPER	2.8	B	A
IRON	1590		
LEAD	4.7		
MAGNESIUM	112		
MANGANESE	13.8		
MERCURY	0.02	U	
NICKEL	0.71		
POTASSIUM	109		
SELENIUM	0.41	U	
SILVER	0.19		
SODIUM	8.2	B	A
THALLIUM	0.14	U	
VANADIUM	4.1		
ZINC	4.6	B	A

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04A
qc_type	NM
units	MG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3940		
ANTIMONY	0.43	B	A
ARSENIC	2.5		
BARIUM	13.1		
BERYLLIUM	0.20		
CADMIUM	0.06		
CALCIUM	61.3		
CHROMIUM	4.6		
COBALT	0.57		
COPPER	3.0	B	A
IRON	3070		
LEAD	13.3		
MAGNESIUM	218		
MANGANESE	14.8		
MERCURY	0.03		
NICKEL	2.2		
POTASSIUM	126		
SELENIUM	0.50	U	
SILVER	0.29		
SODIUM	5.3	B	A
THALLIUM	0.21		
VANADIUM	13.3		
ZINC	8.4		

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06A
qc_type	NM
units	MG/KG
Pct_Solids	67
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2170		
ANTIMONY	0.50	B	A
ARSENIC	1.9		
BARIUM	4.5		
BERYLLIUM	0.13		
CADMIUM	0.05	U	
CALCIUM	28.2		
CHROMIUM	2.9		
COBALT	0.25		
COPPER	1.6	B	A
IRON	1830		
LEAD	6.9		
MAGNESIUM	119		
MANGANESE	6.7		
MERCURY	0.02	U	
NICKEL	1.1		
POTASSIUM	83.1	B	A
SELENIUM	0.60	U	
SILVER	0.13		
SODIUM	5.5	U	
THALLIUM	0.20	U	
VANADIUM	8.2		
ZINC	5.0	B	A

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08A
qc_type	NM
units	MG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1950		
ANTIMONY	0.18	B	A
ARSENIC	1.6		
BARIUM	7.4		
BERYLLIUM	0.15		
CADMIUM	0.03	U	
CALCIUM	70.4		
CHROMIUM	2.8		
COBALT	0.45		
COPPER	0.97	B	A
IRON	2190		
LEAD	2.7		
MAGNESIUM	139		
MANGANESE	19.6		
MERCURY	0.02	U	
NICKEL	0.58		
POTASSIUM	102		
SELENIUM	0.40	U	
SILVER	0.09	U	
SODIUM	3.7	U	
THALLIUM	0.13	U	
VANADIUM	4.7		
ZINC	2.8	B	A

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10A
qc_type	NM
units	MG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8300		
ANTIMONY	0.66	B	A
ARSENIC	8.5	L	K
BARIUM	38.7		
BERYLLIUM	0.48		
CADMIUM	0.23	K	K
CALCIUM	574		
CHROMIUM	11.5		
COBALT	2.6		
COPPER	6.5	B	A
IRON	7400		
LEAD	33.2		
MAGNESIUM	732		
MANGANESE	140		
MERCURY	0.06		
NICKEL	5.4		
POTASSIUM	279		
SELENIUM	0.52	UL	K
SILVER	0.28	L	K
SODIUM	15.6	B	A
THALLIUM	0.17	U	
VANADIUM	16.7		
ZINC	25.1		

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14A
qc_type	NM
units	MG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1710		
ANTIMONY	0.26	B	A
ARSENIC	1.4		
BARIUM	6.6		
BERYLLIUM	0.12		
CADMIUM	0.04	U	
CALCIUM	62.5		
CHROMIUM	2.6		
COBALT	0.22		
COPPER	2.2	B	A
IRON	1460		
LEAD	7.1		
MAGNESIUM	93.2		
MANGANESE	7.3		
MERCURY	0.03		
NICKEL	1.3		
POTASSIUM	114	B	A
SELENIUM	0.50	U	
SILVER	0.22		
SODIUM	4.6	U	
THALLIUM	0.17	U	
VANADIUM	8.4		
ZINC	4.9	B	A

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-115-0305
samp_date	2/12/2003
lab_id	B0258-03A
qc_type	NM
units	MG/KG
Pct_Solids	93
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	1160		
ANTIMONY	0.24	B	A
ARSENIC	2.2		
BARIUM	7.9		
BERYLLIUM	0.12		
CADMIUM	0.54		
CALCIUM	24.4		
CHROMIUM	2.9		
COBALT	0.24		
COPPER	1.5	B	A
IRON	1700		
LEAD	1.0		
MAGNESIUM	49.5		
MANGANESE	9.3		
MERCURY	0.02	U	
NICKEL	0.43		
POTASSIUM	45.9	B	A
SELENIUM	0.41	U	
SILVER	0.09	U	
SODIUM	6.0	B	A
THALLIUM	0.14	U	
VANADIUM	2.6		
ZINC	2.6	B	A

nsample	WOD-SU-116-0204
samp_date	2/12/2003
lab_id	B0258-05A
qc_type	NM
units	MG/KG
Pct_Solids	84
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4870		
ANTIMONY	0.17	UL	D
ARSENIC	2.0		
BARIUM	20.9		
BERYLLIUM	0.20		
CADMIUM	0.04	U	
CALCIUM	53.8		
CHROMIUM	3.1		
COBALT	4.5		
COPPER	1.6	B	A
IRON	2030		
LEAD	2.6		
MAGNESIUM	156		
MANGANESE	341		
MERCURY	0.02	U	
NICKEL	1.7		
POTASSIUM	126		
SELENIUM	0.50	U	
SILVER	0.11	U	
SODIUM	5.9	B	A
THALLIUM	0.17	U	
VANADIUM	4.5		
ZINC	5.0	B	A

nsample	WOD-SU-117-0102
samp_date	2/12/2003
lab_id	B0258-07A
qc_type	NM
units	MG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3520		
ANTIMONY	0.19	B	A
ARSENIC	0.79		
BARIUM	11.6		
BERYLLIUM	0.20		
CADMIUM	0.03	U	
CALCIUM	51.3		
CHROMIUM	3.0		
COBALT	0.68		
COPPER	0.97	B	A
IRON	2470		
LEAD	2.9		
MAGNESIUM	252		
MANGANESE	11.9		
MERCURY	0.02	U	
NICKEL	1.9		
POTASSIUM	80.8	B	A
SELENIUM	0.44	U	
SILVER	0.11		
SODIUM	6.1	B	A
THALLIUM	0.15	U	
VANADIUM	4.6		
ZINC	6.0		

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-118-0406
samp_date	2/12/2003
lab_id	B0258-09A
qc_type	NM
units	MG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3820		
ANTIMONY	0.21	B	A
ARSENIC	2.7		
BARIUM	17.5		
BERYLLIUM	0.21		
CADMIUM	0.03	U	
CALCIUM	50.9		
CHROMIUM	3.3		
COBALT	0.33		
COPPER	1.5	B	A
IRON	2210		
LEAD	1.3		
MAGNESIUM	131		
MANGANESE	15.3		
MERCURY	0.02	U	
NICKEL	1.1		
POTASSIUM	87.7	B	A
SELENIUM	0.41	U	
SILVER	0.09	U	
SODIUM	4.5	B	A
THALLIUM	0.14	U	
VANADIUM	4.2		
ZINC	3.3	B	A

nsample	WOD-SU-119-0507
samp_date	2/12/2003
lab_id	B0258-12A
qc_type	NM
units	MG/KG
Pct_Solids	91
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8190		
ANTIMONY	0.31	B	A
ARSENIC	2.0	L	K
BARIUM	24.1		
BERYLLIUM	0.37		
CADMIUM	0.06	K	K
CALCIUM	98.2		
CHROMIUM	6.5		
COBALT	2.0		
COPPER	2.5	B	A
IRON	5740		
LEAD	3.9		
MAGNESIUM	433		
MANGANESE	48.7		
MERCURY	0.02	U	
NICKEL	4.1		
POTASSIUM	162		
SELENIUM	0.44	UL	K
SILVER	0.21	L	K
SODIUM	6.7	B	A
THALLIUM	0.15	U	
VANADIUM	10.2		
ZINC	8.1		

nsample	WOD-SU-120-0406
samp_date	2/12/2003
lab_id	B0258-15A
qc_type	NM
units	MG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3920		
ANTIMONY	0.20	B	A
ARSENIC	1.3		
BARIUM	18.1		
BERYLLIUM	0.27		
CADMIUM	0.03		
CALCIUM	99.7		
CHROMIUM	4.3		
COBALT	1.2		
COPPER	1.2	B	A
IRON	2820		
LEAD	3.8		
MAGNESIUM	308		
MANGANESE	37.9		
MERCURY	0.02	U	
NICKEL	2.2		
POTASSIUM	112		
SELENIUM	0.43	U	
SILVER	0.10	U	
SODIUM	4.0	U	
THALLIUM	0.14	U	
VANADIUM	5.8		
ZINC	6.6		

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-DUP06
samp_date	2/12/2003
lab_id	B0258-11A
qc_type	NM
units	MG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-118-0406

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2600		
ANTIMONY	0.22	B	A
ARSENIC	2.3		
BARIUM	12.2		
BERYLLIUM	0.18		
CADMIUM	0.03	U	
CALCIUM	43.7		
CHROMIUM	3.9		
COBALT	0.42		
COPPER	1.0	B	A
IRON	2220		
LEAD	1.4		
MAGNESIUM	144		
MANGANESE	23.0		
MERCURY	0.02	U	
NICKEL	0.94		
POTASSIUM	95.5	B	A
SELENIUM	0.43	U	
SILVER	0.10	U	
SODIUM	3.9	U	
THALLIUM	0.14	U	
VANADIUM	4.3		
ZINC	2.8	B	A

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	4.0	U	
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	0.93		
COBALT	0.90	U	
COPPER	17.6		
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	8.0	U	
MANGANESE	1.2		
MERCURY	0.13	U	
NICKEL	1.2		
POTASSIUM	206		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	174		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	12.9		

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	4.7		
ARSENIC	3.0	U	
BARIUM	4.0	U	
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	1.3		
COBALT	0.90	U	
COPPER	20.8		
IRON	35.4		
LEAD	4.0	U	
MAGNESIUM	8.0	U	
MANGANESE	2.7		
MERCURY	0.14	U	
NICKEL	1.1		
POTASSIUM	78.0	U	
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	83.0	U	
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	18.6		

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-115
samp_date	2/12/2003
lab_id	B0258-02A
qc_type	NM
Pct_Solids	92
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.6	J	H

nsample	WOD-SS-116
samp_date	2/12/2003
lab_id	B0258-04A
qc_type	NM
Pct_Solids	86
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	4.6	J	H

nsample	WOD-SS-117
samp_date	2/12/2003
lab_id	B0258-06A
qc_type	NM
Pct_Solids	67
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	4.3	J	H

PROJ_NO: 4740

SDG: B0258 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-118
samp_date	2/12/2003
lab_id	B0258-08A
qc_type	NM
Pct_Solids	92
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.6	J	H

nsample	WOD-SS-119
samp_date	2/12/2003
lab_id	B0258-10A
qc_type	NM
Pct_Solids	84
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.2	J	H

nsample	WOD-SS-120
samp_date	2/12/2003
lab_id	B0258-14A
qc_type	NM
Pct_Solids	77
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	4.8	J	H

PROJ_NO: 4740

SDG: B0258 MEDIA: WATER DATA FRACTION:

nsample	FB-021203
samp_date	2/12/2003
lab_id	B0258-13B
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	RB-021203
samp_date	2/12/2003
lab_id	B0258-16B
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL ORGANIC CARBON	MG/L	6	U	

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-115

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-02A

Level (low/med): MED Date Received: 02/13/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1320		*	P
7440-36-0	Antimony	0.17	B	N	P
7440-38-2	Arsenic	1.2			P
7440-39-3	Barium	4.0	B		P
7440-41-7	Beryllium	0.094	B		P
7440-43-9	Cadmium	0.042	B		P
7440-70-2	Calcium	41.8			P
7440-47-3	Chromium	2.3			P
7440-48-4	Cobalt	0.32	B		P
7440-50-8	Copper	2.8			P
7439-89-6	Iron	1590			P
7439-92-1	Lead	4.7			P
7439-95-4	Magnesium	112			P
7439-96-5	Manganese	13.8			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	0.71	B		P
7440-09-7	Potassium	109			P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.19	B		P
7440-23-5	Sodium	8.2	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	4.1			P
7440-66-6	Zinc	4.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-116

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-04A

Level (low/med): MED Date Received: 02/13/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3940		*	P
7440-36-0	Antimony	0.43	B	N	P
7440-38-2	Arsenic	2.5			P
7440-39-3	Barium	13.1			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.059	B		P
7440-70-2	Calcium	61.3			P
7440-47-3	Chromium	4.6			P
7440-48-4	Cobalt	0.57	B		P
7440-50-8	Copper	3.0			P
7439-89-6	Iron	3070			P
7439-92-1	Lead	13.3			P
7439-95-4	Magnesium	218			P
7439-96-5	Manganese	14.8			P
7439-97-6	Mercury	0.032	B		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	126			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.29	B		P
7440-23-5	Sodium	5.3	B		P
7440-28-0	Thallium	0.21	B		P
7440-62-2	Vanadium	13.3			P
7440-66-6	Zinc	8.4			P
	Cyanide				NR

pkc 2/27/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-117

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-06A

Level (low/med): MED Date Received: 02/13/03

% Solids: 67.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2170		*	P
7440-36-0	Antimony	0.50	B	N	P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	4.5	B		P
7440-41-7	Beryllium	0.13	B		P
7440-43-9	Cadmium	0.047	U		P
7440-70-2	Calcium	28.2	B		P
7440-47-3	Chromium	2.9			P
7440-48-4	Cobalt	0.25	B	*	P
7440-50-8	Copper	1.6	B		P
7439-89-6	Iron	1830			P
7439-92-1	Lead	6.9			P
7439-95-4	Magnesium	119		*	P
7439-96-5	Manganese	6.7			P
7439-97-6	Mercury	0.022	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	83.1			P
7782-49-2	Selenium	0.60	U		P
7440-22-4	Silver	0.13	B		P
7440-23-5	Sodium	5.5	U		P
7440-28-0	Thallium	0.20	U	TM 2/18/03	P
7440-62-2	Vanadium	8.2			P
7440-66-6	Zinc	5.0			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-118

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-08A

Level (low/med): MED Date Received: 02/13/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1950		*	P
7440-36-0	Antimony	0.18	B	N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	7.4	B		P
7440-41-7	Beryllium	0.15	B		P
7440-43-9	Cadmium	0.031	U		P
7440-70-2	Calcium	70.4			P
7440-47-3	Chromium	2.8			P
7440-48-4	Cobalt	0.45	B		P
7440-50-8	Copper	0.97	B		P
7439-89-6	Iron	2190			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	139			P
7439-96-5	Manganese	19.6			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	0.58	B		P
7440-09-7	Potassium	102			P
7782-49-2	Selenium	0.40	U		P
7440-22-4	Silver	0.088	U		P
7440-23-5	Sodium	3.7	U		P
7440-28-0	Thallium	0.13	U		P
7440-62-2	Vanadium	4.7			P
7440-66-6	Zinc	2.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-119

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-10A

Level (low/med): MED Date Received: 02/13/03

% Solids: 84.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8300		*	P
7440-36-0	Antimony	0.66	B	N	P
7440-38-2	Arsenic	8.5			P
7440-39-3	Barium	38.7			P
7440-41-7	Beryllium	0.48			P
7440-43-9	Cadmium	0.23	B		P
7440-70-2	Calcium	574			P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	6.5			P
7439-89-6	Iron	7400			P
7439-92-1	Lead	33.2			P
7439-95-4	Magnesium	732			P
7439-96-5	Manganese	140			P
7439-97-6	Mercury	0.063			CV
7440-02-0	Nickel	5.4			P
7440-09-7	Potassium	279			P
7782-49-2	Selenium	0.52	U		P
7440-22-4	Silver	0.28	B		P
7440-23-5	Sodium	15.6	B		P
7440-28-0	Thallium	0.17	U		P
7440-62-2	Vanadium	16.7			P
7440-66-6	Zinc	25.1			P
	Cyanide				NR

2/13/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-120

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-14A

Level (low/med): MED Date Received: 02/13/03

% Solids: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1710		*	P
7440-36-0	Antimony	0.26	B	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	6.6	B		P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	0.039	U		P
7440-70-2	Calcium	62.5			P
7440-47-3	Chromium	2.6			P
7440-48-4	Cobalt	0.22	B		P
7440-50-8	Copper	2.2			P
7439-89-6	Iron	1460			P
7439-92-1	Lead	7.1			P
7439-95-4	Magnesium	93.2			P
7439-96-5	Manganese	7.3			P
7439-97-6	Mercury	0.032	B		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	114			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.22	B		P
7440-23-5	Sodium	4.6	U		P
7440-28-0	Thallium	0.17	U		P
7440-62-2	Vanadium	8.4			P
7440-66-6	Zinc	4.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1150305

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-03A

Level (low/med): MED Date Received: 02/13/03

% Solids: 93.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1160		*	P
7440-36-0	Antimony	0.24	B	N	P
7440-38-2	Arsenic	2.2			P
7440-39-3	Barium	7.9	B		P
7440-41-7	Beryllium	0.12	B		P
7440-43-9	Cadmium	0.54			P
7440-70-2	Calcium	24.4	B		P
7440-47-3	Chromium	2.9			P
7440-48-4	Cobalt	0.24	B		P
7440-50-8	Copper	1.5			P
7439-89-6	Iron	1700			P
7439-92-1	Lead	1.0			P
7439-95-4	Magnesium	49.5			P
7439-96-5	Manganese	9.3			P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	0.43	B		P
7440-09-7	Potassium	45.9			P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.091	U		P
7440-23-5	Sodium	6.0	B		P
7440-28-0	Thallium	0.14	U	RM 2/20/03	P
7440-62-2	Vanadium	2.6			P
7440-66-6	Zinc	2.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1160204

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-05A

Level (low/med): MED Date Received: 02/13/03

% Solids: 84.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4870		*	P
7440-36-0	Antimony	0.17	U	N	P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	20.9			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.039	U		P
7440-70-2	Calcium	53.8			P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	4.5		*	P
7440-50-8	Copper	1.6	B		P
7439-89-6	Iron	2030			P
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium	156		*	P
7439-96-5	Manganese	341			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	126			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.11	U		P
7440-23-5	Sodium	5.9	B	*	P
7440-28-0	Thallium	0.17	U	DR 2/13/03	P
7440-62-2	Vanadium	4.5			P
7440-66-6	Zinc	5.0			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1170102

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-07A

Level (low/med): MED Date Received: 02/13/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3520		*	P
7440-36-0	Antimony	0.19	B	N	P
7440-38-2	Arsenic	0.79	B		P
7440-39-3	Barium	11.6			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	51.3			P
7440-47-3	Chromium	3.0			P
7440-48-4	Cobalt	0.68	B	*	P
7440-50-8	Copper	0.97	B		P
7439-89-6	Iron	2470			P
7439-92-1	Lead	2.9			P
7439-95-4	Magnesium	252		*	P
7439-96-5	Manganese	11.9			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	80.8			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.11	B		P
7440-23-5	Sodium	6.1	B	*	P
7440-28-0	Thallium	0.15	U	2/24/03	P
7440-62-2	Vanadium	4.6			P
7440-66-6	Zinc	6.0			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1180406

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-09A

Level (low/med): MED Date Received: 02/13/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3820		*	P
7440-36-0	Antimony	0.21	B	N	P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	17.5			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	50.9			P
7440-47-3	Chromium	3.3			P
7440-48-4	Cobalt	0.33	B	*	P
7440-50-8	Copper	1.5			P
7439-89-6	Iron	2210			P
7439-92-1	Lead	1.3			P
7439-95-4	Magnesium	131			P
7439-96-5	Manganese	15.3			P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	87.7			P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.091	U		P
7440-23-5	Sodium	4.5	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	4.2			P
7440-66-6	Zinc	3.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1190507

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-12A

Level (low/med): MED Date Received: 02/13/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8190		*	P
7440-36-0	Antimony	0.31	B	N	P
7440-38-2	Arsenic	2.0			P
7440-39-3	Barium	24.1			P
7440-41-7	Beryllium	0.37			P
7440-43-9	Cadmium	0.062	B		P
7440-70-2	Calcium	98.2			P
7440-47-3	Chromium	6.5			P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	2.5			P
7439-89-6	Iron	5740			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	433			P
7439-96-5	Manganese	48.7			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	4.1			P
7440-09-7	Potassium	162			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.21	B		P
7440-23-5	Sodium	6.7	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	10.2			P
7440-66-6	Zinc	8.1			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1200406

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-15A

Level (low/med): MED Date Received: 02/13/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3920		*	P
7440-36-0	Antimony	0.20	B	N	P
7440-38-2	Arsenic	1.3			P
7440-39-3	Barium	18.1			P
7440-41-7	Beryllium	0.27			P
7440-43-9	Cadmium	0.034	B		P
7440-70-2	Calcium	99.7			P
7440-47-3	Chromium	4.3			P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	2820			P
7439-92-1	Lead	3.8			P
7439-95-4	Magnesium	308			P
7439-96-5	Manganese	37.9			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	112			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	4.0	U		P
7440-28-0	Thallium	0.14	U	DM 2/20/03	P
7440-62-2	Vanadium	5.8			P
7440-66-6	Zinc	6.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP06

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Lab Sample ID: B0258-11A

Level (low/med): MED Date Received: 02/13/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2600		*	P
7440-36-0	Antimony	0.22	B	N	P
7440-38-2	Arsenic	2.3			P
7440-39-3	Barium	12.2			P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	43.7			P
7440-47-3	Chromium	3.9			P
7440-48-4	Cobalt	0.42	B	*	P
7440-50-8	Copper	1.0	B		P
7439-89-6	Iron	2220			P
7439-92-1	Lead	1.4			P
7439-95-4	Magnesium	144		*	P
7439-96-5	Manganese	23.0			P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	0.94	B		P
7440-09-7	Potassium	95.5			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.095	U		P
7440-23-5	Sodium	3.9	U	*	P
7440-28-0	Thallium	0.14	U	JMC 2/28/03	P
7440-62-2	Vanadium	4.3			P
7440-66-6	Zinc	2.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-115 **Collection Date:** 02/12/03 8:25
Lab ID: B0258-02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	5.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-116 **Collection Date:** 02/12/03 9:05
Lab ID: B0258-04

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	4.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-117 **Collection Date:** 02/12/03 9:50
Lab ID: B0258-06

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	4.3		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-118 **Collection Date:** 02/12/03 11:10
Lab ID: B0258-08

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.6		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-119 **Collection Date:** 02/12/03 12:05
Lab ID: B0258-10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.2		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-120 **Collection Date:** 02/12/03 12:55
Lab ID: B0258-14

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	4.8		1.0	pH Units	1	02/14/2003	R1893

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-021203

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): WATER Lab Sample ID: B0258-13C

Level (low/med): MED Date Received: 02/13/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	0.93	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	17.6	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	1.2	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.2	B		P
7440-09-7	Potassium	206	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	174	B		P
7440-28-0	Thallium	3.0	U	TM 2/26/03	P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	12.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021203

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): WATER Lab Sample ID: B0258-16C

Level (low/med): MED Date Received: 02/13/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	4.7	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	20.8	B		P
7439-89-6	Iron	35.4	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	2.7	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	18.6	B		P
	Cyanide				NR

RM 2/27/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: FB-021203 **Collection Date:** 02/12/03 12:45
Lab ID: B0258-13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION					E415.1_TOC_W		
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: RB-021203 **Collection Date:** 02/12/03 14:45
Lab ID: B0258-16

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						E415.1_TOC_W	
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 01 B0258-02B GRAB 02/12/03 @0825

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	2.72	97.28
No. 20	20.04	77.24
No. 40	36.39	40.85
No. 60	23.91	16.94
No. 140	14.15	2.79
No. 200	0.83	1.96

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 02 B0258-04B GRAB 02/12/03 @0905

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.26	99.74
No. 10	1.64	98.10
No. 20	7.01	91.09
No. 40	32.65	58.44
No. 60	32.21	26.23
No. 140	22.31	3.92
No. 200	1.41	2.51

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 03 B0258-06B GRAB 02/12/03 @0950

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.08	99.92
No. 10	0.20	99.72
No. 20	1.26	98.46
No. 40	15.86	82.60
No. 60	42.89	39.71
No. 140	36.71	3.00
No. 200	1.26	1.74

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 04 B0258-08B GRAB 02/12/03 @1110

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.82	99.18
No. 10	1.84	97.34
No. 20	9.07	88.27
No. 40	33.82	54.45
No. 60	34.57	19.88
No. 140	16.18	3.70
No. 200	1.19	2.51

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 05 B0258-10B GRAB 02/12/03 @1205

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.99	98.01
No. 10	7.92	90.09
No. 20	14.24	75.85
No. 40	18.32	57.53
No. 60	21.08	36.45
No. 140	24.57	11.88
No. 200	2.54	9.34

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1986
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 06 B0258-14B GRAB 02/12/03 @1255

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.65	99.35
No. 10	0.32	99.03
No. 20	1.42	97.61
No. 40	15.36	82.25
No. 60	39.52	42.73
No. 140	37.42	5.31
No. 200	3.62	1.69

APPENDIX C
SUPPORT DOCUMENTATION

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0258
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vials HCl	TAL VOC 40z Amber Glass Widemouth	TAL SVOC PCB 40z Amber Glass Widemouth	TAL Metals pH 40z Amber Glass Widemouth	TAL % moisture 40z Amber Glass Widemouth	Grain Size Grain Size sample	TAL VOC 40z Amber Glass Widemouth	TAL Metals Hg Mercury	COMMENTS
TB-021203	2/12/03 0800		X	X			01	2	2								Trip Blank
WOD-SS-115	2/12/03 0825		X		X		02	7		1	1	1	1	3			
WOD-SU-115-0305	2/12/03 0845		X		X		03	5		1				3	1		
WOD-SS-116	2/12/03 0905		X		X		04	7		1	1	1	1	3			
WOD-SU-116-0204	2/12/03 0925		X		X		05	5		1				3	1		
WOD-SS-117	2/12/03 0950		X		X		06	7		1	1	1	1	3			
WOD-SU-117-0102	2/12/03 1010		X		X		07	5		1				3	1		
WOD-SB-118	2/12/03 1110		X		X		08	7		1	1	1	1	3			
WOD-SU-118-0406	2/12/03 1130		X		X		09	5		1				3	1		
WOD-SS-119	2/12/03 1205		X		X		10	7		1	1	1	1	3			
WOD-SU-Dup06	2/12/03 1145		X		X		11	5		1				3	1		
WOD-SU-119-0507	2/12/03 1230		X		X		12 *	7		1 *	1 *	1	1	3 *			

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	2/12/03 1700	[signature]	2-13-03 0900
		/		/
		/		/

ADDITIONAL REMARKS:
Blank water supplied by Laboratory
Shipped via Federal Express
Airbill No 8286 8471 0200

COOLER TEMP: 3°

0017

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: 30258
NAME: Garth Glenn	FAX: 610-491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen, Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSIS: 40 ml VOA vials HCl	1 Liter VOC	1 Liter Amber Glass	1 Liter SVOC	1 Liter Amber Glass	TAL PCB	40 ml VOA vials HCl	500 ml poly HNO3	TAL Metals	5 gram encore sampler	TCL VOC	40z Amber Glass wide mouth	TCL SVOC PCB	40z Amber Glass wide mouth	TAL Metals Hg	40z Amberglass wide mouth	TCL Pesticides + PCB	40z Amber Glass wide mouth	TAL Metals % moisture	8oz Amber Glass wide mouth	TOC % moisture	40z Amber Glass wide mouth	TAL Metals % moisture	8oz Amber Glass wide mouth	Grain Size	COMMENTS
FB-021203	2/12/03 1245		X	X			13	9	2	2	2	2	1																			Field Blank
WOD-SS-120	2/12/03 1255		X		X		14	7								3	1	1	1		1											
WOD-SU-120-0406	2/12/03 1315		X		X		15	5								3	1			1												
RB-021203	2/12/03 1445		X	X			16	9	2	2	2	2	1																			Rinsate Blank
	/																															
	/																															
	/																															
	/																															
	/																															
	/																															
	/																															
	/																															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP
	Charles Wilson	2/12/03 1700	Arthur Leath	2-13-03 0900	Blank water supplied by Laboratory shipped via Federal Express Airbill No 8286 8471 0200	3C
		/		/		
		/		/		

0018

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

Sample Condition Form

Page __ of __

Received By:	Reviewed By:	Date: 2-13-03	MITKEM Project: B025858
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed YES / NO*

*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 3c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 2-13-03

8)Time Received 0900

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B025801					H
02					E
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					E
13	<2				H
14					E
15					E
B025810	<2				H

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes / no

Comments / Remarks

2-13-03

Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

0019

Sample Condition Notification

Mitkem Project#: 02258
Client: TETRA TECH
Client project #/name: NBIA WFF

Date of Receipt: 2-13-07
Received By: (AL) 0900

Unusual Occurance Description:

(1) EXAMPLE Sample's WITH ID's WOD-55- DATA HAVE TESTS SVOC/PCB/TAL METALS+PH/TOC/GRAIN SIZE

(2) EXAMPLE Samples WITH ID'S WOD-SU" HAVE TESTS TAL METALS/SVOC/PCB

Sample # WOD-50-119-05"07 HAS TEST MARK OFF FOR EVERY THING LIKE EXAMPLE (1) ONLY RECEIVED BOTTLES FOR TAL METALS/SVOC/PCB LIKE EXAM.1E (2) (NC) 2-13-05

Client Contacted:

Contacted via: Phone/Fax/E-mail
Date: _____ **Time:** _____
Contacted By: _____
Name of person contacted: _____

Client Response:

Responded via: Phone/Fax/E-mail
Date: _____
Name of person responding: _____
Responding to: _____

~~Use~~ Only report Met/SVOC/PCB for ~~the~~ sample WOD-50-119-0507

Mitkem Action Taken:

B0258

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FB-021203	B0258-13C	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
UG/L	FB-021203DUP	B0258-13CDUP	DUPLICATE	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	FB-021203MS	B0258-13CMS	MS	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	LCSS1	0217LCSS	LCS	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
%	LCSW1	0217LCSW	LCS	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
MG/KG	PBS1	0217PBS	M_BLANK	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	PBW1	0217PBW	M_BLANK	B0258	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	RB-021203	B0258-16C	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-115	B0258-02A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-115DUP	B0258-02ADUP	DUPLICATE	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
%	WOD-SS-115MS	B0258-02AMS	MS	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-116	B0258-04A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-117	B0258-06A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-118	B0258-08A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-119	B0258-10A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SS-120	B0258-14A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
MG/KG	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	HG	02/12/03	02/17/03	02/18/03	5	1	6
UG/L	FB-021203	B0258-13C	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FB-021203DUP	B0258-13CDUP	DUPLICATE	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
UG/L	FB-021203L	B0258-13CL	NORMAL	B0258	M	02/12/03	02/18/03	02/18/03	6	0	6
%	FB-021203MS	B0258-13CMS	MS	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
%	LCSS	0215LCSS	LCS	B0258	M	/ /	02/15/03	02/18/03	0	3	0
%	LCSW	0215LCSW	LCS	B0258	M	/ /	02/15/03	02/18/03	0	3	0
MG/KG	PBS	0215PBS	M_BLANK	B0258	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	PBW	0215PBW	M_BLANK	B0258	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	RB-021203	B0258-16C	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-115	B0258-02A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-115DUP	B0258-02ADUP	DUPLICATE	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
%	WOD-SS-115MS	B0258-02AMS	MS	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-116	B0258-04A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-117	B0258-06A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-118	B0258-08A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-119	B0258-10A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SS-120	B0258-14A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
MG/KG	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	M	02/12/03	02/15/03	02/18/03	3	3	6
UG/L	FB-021203	B0258-13D	NORMAL	B0258	OS	02/12/03	02/18/03	03/13/03	6	23	29
%	RB-021203	B0258-16D	NORMAL	B0258	OS	02/12/03	02/18/03	03/13/03	6	23	29
%	SBLK3N	MB-5802	M_BLANK	B0258	OS	/ /	02/26/03	03/13/03	0	15	0
%	SBLK3NLCS	LCS-5802	LCS	B0258	OS	/ /	02/26/03	03/13/03	0	15	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	SBLK3P	MB-5678	M_BLANK	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCS	LCS-5678	LCS	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCSD	LCSD-5678	LCSD	B0258	OS	/ /	02/18/03	03/13/03	0	23	0
%	WOD-SS-115	B0258-02A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-116	B0258-04A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-117	B0258-06A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-118	B0258-08A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-119	B0258-10A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SS-120	B0258-14A	NORMAL	B0258	OS	02/12/03	02/26/03	03/15/03	14	17	31
%	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	OS	02/12/03	02/26/03	03/15/03	14	17	31
%	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406MS	B0258-15AMS	MS	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-120-0406MSD	B0258-15AMSD	MSD	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	OS	02/12/03	02/26/03	03/14/03	14	16	30
%	FB-021203	B0258-13A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
%	RB-021203	B0258-16A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
UG/L	TB-021203	B0258-01A	NORMAL	B0258	OV	02/12/03	02/23/03	02/23/03	11	0	11
%	VBLK5X	V5B0215A	M_BLANK	B0258	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5XLCS	V5L0215A	LCS	B0258	OV	/ /	02/15/03	02/15/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0258	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0258	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5Z	V5B0219A	M_BLANK	B0258	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCS	V5L0219A	LCS	B0258	OV	/ /	02/19/03	02/19/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5ZLCSD	V5L0219B	LCSD	B0258	OV	/ /	02/19/03	02/19/03	0	0	0
UG/L	VBLK6J	V6B0223A	M_BLANK	B0258	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK6JLCS	V6L0223A	LCS	B0258	OV	/ /	02/23/03	02/23/03	0	0	0
%	WOD-SS-115	B0258-02C	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
UG/KG	WOD-SS-116	B0258-04C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-116RE	B0258-04CRE	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-117	B0258-06C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-117RE	B0258-06CRE	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-118	B0258-08C	NORMAL	B0258	OV	02/12/03	02/15/03	02/15/03	3	0	3
%	WOD-SS-119	B0258-10C	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SS-120	B0258-14C	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SS-120RE	B0258-14CRE	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-115-0305	B0258-03B	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SV-116-0204	B0258-05B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-117-0102	B0258-07B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-118-0406	B0258-09B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-119-0507	B0258-12B	NORMAL	B0258	OV	02/12/03	02/17/03	02/17/03	5	0	5
%	WOD-SV-120-0406	B0258-15B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	WOD-SV-DUP06	B0258-11B	NORMAL	B0258	OV	02/12/03	02/19/03	02/19/03	7	0	7
%	BBLK1K	MB-5748	M_BLANK	B0258	PCB	/ /	02/21/03	02/25/03	0	4	0
%	BBLK1KLCS	LCS-5748	LCS	B0258	PCB	/ /	02/21/03	02/25/03	0	4	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0258	PCB	/ /	02/18/03	02/23/03	0	5	0
%	FB-021203	B0258-13D	NORMAL	B0258	PCB	02/12/03	02/18/03	02/23/03	6	5	11
%	RB-021203	B0258-16D	NORMAL	B0258	PCB	02/12/03	02/18/03	02/23/03	6	5	11
%	WOD-SS-115	B0258-02A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-116	B0258-04A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/25/03	9	4	13
%	WOD-SS-117	B0258-06A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-118	B0258-08A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-119	B0258-10A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SS-120	B0258-14A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-115-0305	B0258-03A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-116-0204	B0258-05A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-117-0102	B0258-07A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-118-0406	B0258-09A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-119-0507	B0258-12A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-120-0406	B0258-15A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
%	WOD-SV-120-0406MS	B0258-15AMS	MS	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-120-0406MSD	B0258-15AMSD	MSD	B0258	PCB	02/12/03	02/21/03	02/27/03	9	6	15
%	WOD-SV-DUP06	B0258-11A	NORMAL	B0258	PCB	02/12/03	02/21/03	02/26/03	9	5	14
S.U.	WOD-SS-115	B0258-02A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-116	B0258-04A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-117	B0258-06A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-118	B0258-08A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-119	B0258-10A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
S.U.	WOD-SS-120	B0258-14A	NORMAL	B0258	PH	02/12/03	02/14/03	02/14/03	2	0	2
MG/L	FB-021203	B0258-13B	NORMAL	B0258	TOC	02/12/03	02/28/03	02/28/03	16	0	16
%	LCS-6168	LCS-6168	LCS	B0258	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0258	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021203	B0258-16B	NORMAL	B0258	TOC	02/12/03	02/28/03	02/28/03	16	0	16

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for three aqueous and thirteen soil samples that were collected on February 12, 2003, and received at Mitkem on February 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

0001

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on samples FB021203 and WOD-SS-115. Spike recoveries were within the QC limits with the exception of antimony for sample WOD-SS-115. Form 1's are flagged with an "N" for antimony. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on samples FB021203 and WOD-SS-115. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0258

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0258-01A	TB-021203	
B0258-02A	WOD-SS-115	
B0258-02B	WOD-SS-115	
B0258-02C	WOD-SS-115	
B0258-03A	SV1150305	WOD-SV-115-0305
B0258-03B	SV1150305	WOD-SV-115-0305
B0258-04A	WOD-SS-116	
B0258-04B	WOD-SS-116	
B0258-04C	WOD-SS-116	
B0258-05A	SV1160204	WOD-SV-116-0204
B0258-05B	SV1160204	WOD-SV-116-0204
B0258-06A	WOD-SS-117	
B0258-06B	WOD-SS-117	
B0258-06C	WOD-SS-117	
B0258-07A	SV1170102	WOD-SV-117-0102
B0258-07B	SV1170102	WOD-SV-117-0102
B0258-08A	WOD-SS-118	
B0258-08B	WOD-SS-118	
B0258-08C	WOD-SS-118	
B0258-09A	SV1180406	WOD-SV-118-0406
B0258-09B	SV1180406	WOD-SV-118-0406
B0258-10A	WOD-SS-119	
B0258-10B	WOD-SS-119	
B0258-10C	WOD-SS-119	
B0258-11A	SVDUP06	WOD-SV-DUP06
B0258-11B	SVDUP06	WOD-SV-DUP06
B0258-12A	SV1190507	WOD-SV-119-0507
B0258-12B	SV1190507	WOD-SV-119-0507
B0258-13A	FB-021203	
B0258-13B	FB-021203	
B0258-13C	FB-021203	
B0258-13D	FB-021203	
B0258-14A	WOD-SS-120	
B0258-14B	WOD-SS-120	
B0258-14C	WOD-SS-120	
B0258-15A	SV1200406	WOD-SV-120-0406
B0258-15B	SV1200406	WOD-SV-120-0406
B0258-16A	RB-021203	
B0258-16B	RB-021203	
B0258-16C	RB-021203	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

0 05

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0258-16D	RB-021203	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FB-021203	B0258-13C
FB-021203D	B0258-13CD
FB-021203S	B0258-13CS
RB-021203	B0258-16C
SV1150305	B0258-03A
SV1160204	B0258-05A
SV1170102	B0258-07A
SV1180406	B0258-09A
SV1190507	B0258-12A
SV1200406	B0258-15A
SVDUP06	B0258-11A
WOD-SS-115	B0258-02A
WOD-SS-115D	B0258-02AD
WOD-SS-115S	B0258-02AS
WOD-SS-116	B0258-04A
WOD-SS-117	B0258-06A
WOD-SS-118	B0258-08A
WOD-SS-119	B0258-10A
WOD-SS-120	B0258-14A

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: REINER A. CONRAD

Date: 2/12/03 Title: CHEMIST

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	10250.69	102.5	10000.0	9948.41	99.5	10165.98	101.7	P
Antimony	500.0	530.26	106.1	500.0	524.26	104.9	525.23	105.0	P
Arsenic	500.0	529.81	106.0	500.0	527.28	105.5	527.07	105.4	P
Barium	10000.0	10797.49	108.0	10000.0	10787.69	107.9	10799.87	108.0	P
Beryllium	250.0	256.20	102.5	250.0	256.17	102.5	257.25	102.9	P
Cadmium	250.0	261.75	104.7	250.0	256.18	102.5	260.68	104.3	P
Calcium	25000.0	25354.02	101.4	25000.0	25166.45	100.7	25424.88	101.7	P
Chromium	1000.0	1046.02	104.6	1000.0	1020.88	102.1	1038.38	103.8	P
Cobalt	2500.0	2647.04	105.9	2500.0	2601.72	104.1	2658.64	106.3	P
Copper	1250.0	1307.22	104.6	1250.0	1309.99	104.8	1319.24	105.5	P
Iron	5000.0	5223.03	104.5	5000.0	5122.40	102.4	5224.31	104.5	P
Lead	500.0	522.04	104.4	500.0	519.75	104.0	521.76	104.4	P
Magnesium	25000.0	25870.70	103.5	25000.0	25836.85	103.3	25978.45	103.9	P
Manganese	2500.0	2621.23	104.8	2500.0	2615.71	104.6	2601.34	104.1	P
Mercury	5.0	4.70	94.0	5.0	4.83	96.6	4.89	97.8	CV
Nickel	2500.0	2644.38	105.8	2500.0	2585.53	103.4	2599.80	104.0	P
Potassium	25000.0	24749.70	99.0	25000.0	23753.25	95.0	23314.00	93.3	P
Selenium	500.0	514.95	103.0	500.0	511.10	102.2	517.14	103.4	P
Silver	1250.0	1268.26	101.5	1250.0	1274.23	101.9	1289.21	103.1	P
Sodium	25000.0	25788.04	103.2	25000.0	25254.26	101.0	25119.43	100.5	P
Thallium	500.0	523.40	104.7	500.0	521.08	104.2	523.33	104.7	P
Vanadium	2500.0	2624.24	105.0	2500.0	2623.82	105.0	2629.13	105.2	P
Zinc	2500.0	2646.19	105.8	2500.0	2606.16	104.2	2643.48	105.7	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Initial Calibration Source:

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	9882.99	98.8	10152.07	101.5	P
Antimony				500.0	518.79	103.8	516.00	103.2	P
Arsenic				500.0	523.24	104.6	517.80	103.6	P
Barium				10000.0	10774.98	107.7	10572.51	105.7	P
Beryllium				250.0	256.71	102.7	252.34	100.9	P
Cadmium				250.0	255.56	102.2	260.93	104.4	P
Calcium				25000.0	25224.37	100.9	25142.99	100.6	P
Chromium				1000.0	1018.72	101.9	1041.49	104.1	P
Cobalt				2500.0	2609.99	104.4	2675.94	107.0	P
Copper				1250.0	1308.85	104.7	1291.18	103.3	P
Iron				5000.0	5115.21	102.3	5233.68	104.7	P
Lead				500.0	517.83	103.6	514.42	102.9	P
Magnesium				25000.0	25955.80	103.8	25551.38	102.2	P
Manganese				2500.0	2597.59	103.9	2534.18	101.4	P
Mercury				5.0	4.99	99.8			CV
Nickel				2500.0	2562.45	102.5	2587.88	103.5	P
Potassium				25000.0	22951.30	91.8			P
Selenium				500.0	510.11	102.0	512.37	102.5	P
Silver				1250.0	1285.71	102.9	1266.59	101.3	P
Sodium				25000.0	25039.02	100.2			P
Thallium				500.0	519.86	104.0	519.03	103.8	P
Vanadium				2500.0	2624.10	105.0	2575.46	103.0	P
Zinc				2500.0	2593.54	103.7	2643.25	105.7	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Aqueous prep blank - associated with field blank & rinsate blank samples only! EMF 5-5-03

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	17.000	U	P
Antimony	4.9	B	4.4	B	4.6	B	5.5	B	3.673	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.900	U	P
Copper	9.2	B	6.1	B	4.1	B	4.0	U	27.262	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	31.221	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	8.0	U	8.0	U	8.0	U	8.5	B	13.343	B	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	1.554	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium	420.3	B	78.0	U	-120.4	B	-152.9	B	168.267	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	259.0	B	83.0	U	83.0	U	83.0	U	196.492	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	18.244	B	P
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U					0.850	U	P
Antimony			4.7	B					0.150	U	P
Arsenic			3.0	U					0.150	U	P
Barium			4.0	U					0.200	U	P
Beryllium			0.5	U					0.025	U	P
Cadmium			0.7	U					0.035	U	P
Calcium			240.0	U					12.000	U	P
Chromium			0.6	U					0.040	B	P
Cobalt			0.9	U					0.045	U	P
Copper			4.0	U					1.428	B	P
Iron			26.0	U					2.182	B	P
Lead			4.0	U					0.200	U	P
Magnesium			8.0	U					0.400	U	P
Manganese			0.8	U					0.291	B	P
Mercury									0.017	U	CV
Nickel			0.8	U					0.078	B	P
Potassium									3.900	U	P
Selenium			9.0	U					0.450	U	P
Silver			2.0	U					0.100	U	P
Sodium									4.150	U	P
Thallium			3.0	U					0.150	U	P
Vanadium			0.7	U					0.035	U	P
Zinc			7.0	U					1.207	B	P
Cyanide											

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		25658.9	102.6		24705.8	98.8
Selenium								
Silver								
Sodium		25000		27059.5	108.2		26453.4	105.8
Thallium								
Vanadium								
Zinc								

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
K 766.490	3	Lin Thru 0	0.0	2063	0.00000	0.999282	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/18/03 10:41:08 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	99667.3	48.306	mg/L	0.0609	48.306	mg/L	0.0609	0.13%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/18/03 10:43:25 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	51064.8	24.750	mg/L	0.0707	24.750	mg/L	0.0707	0.29%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/18/03 10:45:42 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	867.2	0.4203	mg/L	0.00637	0.4203	mg/L	0.00637	1.51%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/18/03 10:48:01 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	371.1	0.1799	mg/L	0.03274	0.1799	mg/L	0.03274	18.20%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/18/03 10:50:20 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	52940.6	25.659	mg/L	0.2598	25.659	mg/L	0.2598	1.01%

Sequence No.: 32 Autosampler Location: 35
Sample ID: B0258-11A,5660 Date Collected: 2/18/03 11:43:16 AM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: B0258-11A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	4160.9	2.0167	mg/L	0.07644	2.0167	mg/L	0.07644	3.79%

Sequence No.: 33 Autosampler Location: 36
Sample ID: B0258-12A,5660 Date Collected: 2/18/03 11:45:32 AM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: B0258-12A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	6893.4	3.3410	mg/L	0.00727	3.3410	mg/L	0.00727	0.22%

Sequence No.: 34 Autosampler Location: 37
Sample ID: B0258-14A,5660 Date Collected: 2/18/03 11:47:49 AM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: B0258-14A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	4277.6	2.0732	mg/L	0.01411	2.0732	mg/L	0.01411	0.68%

Sequence No.: 35 Autosampler Location: 38
Sample ID: B0258-15A,5660 Date Collected: 2/18/03 11:50:06 AM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: B0258-15A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	4846.3	2.3488	mg/L	0.03603	2.3488	mg/L	0.03603	1.53%

Sequence No.: 36 Autosampler Location: 5
Sample ID: ICSA Date Collected: 2/18/03 11:52:23 AM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	-673.3	-0.3263	mg/L	0.04074	-0.3263	mg/L	0.04074	12.49%

Sequence No.: 37 Autosampler Location: 6
Sample ID: ICSAB Date Collected: 2/18/03 11:54:42 AM
Analyst:
Sample Wt: Sample Prep Volume:

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Na 589.592	3	Lin Thru 0	0.0	5684	0.00000	0.999944	

Sequence No.: 5 Autosampler Location: 2
Sample ID: CHECK Date Collected: 2/18/03 12:12:23 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	281771.5	49.572	mg/L	0.8557	49.572	mg/L	0.8557	1.73%

Sequence No.: 6 Autosampler Location: 3
Sample ID: ICV Date Collected: 2/18/03 12:14:41 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	146580.6	25.788	mg/L	0.0862	25.788	mg/L	0.0862	0.33%

Sequence No.: 7 Autosampler Location: 4
Sample ID: ICB Date Collected: 2/18/03 12:16:59 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1472.0	0.2590	mg/L	0.01743	0.2590	mg/L	0.01743	6.73%

Sequence No.: 8 Autosampler Location: 5
Sample ID: ICSA Date Collected: 2/18/03 12:19:18 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1540.1	0.2710	mg/L	0.02068	0.2710	mg/L	0.02068	7.63%

Sequence No.: 9 Autosampler Location: 6
Sample ID: ICSAB Date Collected: 2/18/03 12:21:37 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	153807.7	27.060	mg/L	0.1361	27.060	mg/L	0.1361	0.50%

Sequence No.: 32
Sample ID: B0258-11A,5660
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 35
Date Collected: 2/18/03 1:14:38 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0258-11A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	409.1	0.0720	mg/L	0.00188	0.0720	mg/L	0.00188	2.61%

Sequence No.: 33
Sample ID: B0258-12A,5660
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 36
Date Collected: 2/18/03 1:16:54 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0258-12A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	778.0	0.1369	mg/L	0.00288	0.1369	mg/L	0.00288	2.11%

Sequence No.: 34
Sample ID: B0258-14A,5660
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 37
Date Collected: 2/18/03 1:19:11 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0258-14A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	136.5	0.0240	mg/L	0.00454	0.0240	mg/L	0.00454	18.89%

Sequence No.: 35
Sample ID: B0258-15A,5660
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 38
Date Collected: 2/18/03 1:21:28 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0258-15A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	391.2	0.0688	mg/L	0.00471	0.0688	mg/L	0.00471	6.84%

Sequence No.: 36
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/18/03 1:23:45 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units		Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-143.8	-0.0253	mg/L	OK	0.00769	-0.0253	mg/L	0.00769	30.41%

Sequence No.: 37
Sample ID: ICSAB
Analyst:
Sample Wt:
Autosampler Location: 6
Date Collected: 2/18/03 1:26:04 PM
Sample Prep Volume:

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	518537	521288.7	104.3	508694	494314.5	98.9
Antimony		600		653.0	108.8		623.4	103.9
Arsenic		100		104.1	104.1		106.8	106.8
Barium		500		516.8	103.4		501.7	100.3
Beryllium		500		513.6	102.7		488.0	97.6
Cadmium		1000		965.0	96.5		935.9	93.6
Calcium	500000	500000	550121	540708.2	108.1	544516	522808.2	104.6
Chromium		500		494.1	98.8		477.4	95.5
Cobalt		500		474.0	94.8		454.8	91.0
Copper		500		575.3	115.1		531.2	106.2
Iron	200000	200000	183957	184799.7	92.4	181104	175612.8	87.8
Lead		500		496.3	99.3		474.2	94.8
Magnesium	500000	500000	512535	514196.9	102.8	504092	488354.5	97.7
Manganese		500		486.6	97.3		469.5	93.9
Mercury								
Nickel		1000		933.9	93.4		901.8	90.2
Potassium								
Selenium		500		515.3	103.1		508.6	101.7
Silver		200		218.1	109.0		205.1	102.6
Sodium								
Thallium		100		93.3	93.3		96.2	96.2
Vanadium		500		504.7	100.9		487.5	97.5
Zinc		1000		917.5	91.8		899.2	89.9

U.S. EPA - CLP

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000				506085	496558.3	99.3
Antimony		600					605.3	100.9
Arsenic		100					94.2	94.2
Barium		500					498.3	99.7
Beryllium		500					489.2	97.8
Cadmium		1000					938.0	93.8
Calcium	500000	500000				533642	522131.6	104.4
Chromium		500					477.0	95.4
Cobalt		500					455.2	91.0
Copper		500					527.3	105.5
Iron	200000	200000				180227	176221.5	88.1
Lead		500					466.9	93.4
Magnesium	500000	500000				502114	489986.4	98.0
Manganese		500					461.2	92.2
Mercury								
Nickel		1000					886.6	88.7
Potassium								
Selenium		500					513.0	102.6
Silver		200					207.0	103.5
Sodium								
Thallium		100					90.7	90.7
Vanadium		500					485.2	97.0
Zinc		1000					901.2	90.1

Pb 220.353	4.8	0.0002	mg/L	0.00034	0.0002	mg/L	0.00034 149.82%
Sb 206.836	16.6	0.0049	mg/L	0.00054	0.0049	mg/L	0.00054 11.02%
Se 196.026	-2.1	-0.0008	mg/L	0.00023	-0.0008	mg/L	0.00023 27.28%
Tl 190.801	1.7	0.0007	mg/L	0.00076	0.0007	mg/L	0.00076 116.39%
V 292.402	56.8	0.0001	mg/L	0.00013	0.0001	mg/L	0.00013 91.10%
Zn 206.200	443.1	0.0041	mg/L	0.00068	0.0041	mg/L	0.00068 16.71%
Na 330.237	22.5	0.0096	mg/L	0.02015	0.0096	mg/L	0.02015 209.32%
Cd 226.502	14.4	0.0000	mg/L	0.00002	0.0000	mg/L	0.00002 45.85%
Ti 334.940	94.1	0.0001	mg/L	0.00003	0.0001	mg/L	0.00003 37.17%
Ca 227.546	27.9	0.0410	mg/L	0.02545	0.0410	mg/L	0.02545 62.03%

Sequence No.: 12 **Autosampler Location: 5**
Sample ID: ICSA **Date Collected: 2/18/2003 3:33:01 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-10566.7	-0.0047	mg/L	0.00025	-0.0047	mg/L	0.00025	5.36%
Al 308.215	28317800.4	518.54	mg/L	4.169	518.54	mg/L	4.169	0.80%
As 188.979	-47.8	-0.0267	mg/L	0.01082	-0.0267	mg/L	0.01082	40.55%
Ba 233.527	691.4	-0.0016	mg/L	0.00029	-0.0016	mg/L	0.00029	17.69%
Be 313.107	405.4	0.0000	mg/L	0.00000	0.0000	mg/L	0.00000	6.32%
Co 228.616	15.8	-0.0007	mg/L	0.00091	-0.0007	mg/L	0.00091	133.43%
Cr 267.716	-796.8	0.0002	mg/L	0.00034	0.0002	mg/L	0.00034	195.99%
Cu 324.752	-4534.4	0.0153	mg/L	0.00015	0.0153	mg/L	0.00015	0.97%
Fe 273.955	9803205.6	183.96	mg/L	1.156	183.96	mg/L	1.156	0.63%
Mg 279.077	24080595.3	512.53	mg/L	3.125	512.53	mg/L	3.125	0.61%
Mn 257.610	-3804.8	-0.0126	mg/L	0.00006	-0.0126	mg/L	0.00006	0.46%
Ni 231.604	-17.9	-0.0003	mg/L	0.00018	-0.0003	mg/L	0.00018	65.43%
Pb 220.353	-752.4	0.0042	mg/L	0.00340	0.0042	mg/L	0.00340	81.06%
Sb 206.836	-57.0	-0.0060	mg/L	0.00423	-0.0060	mg/L	0.00423	70.68%
Se 196.026	-124.5	-0.0007	mg/L	0.00298	-0.0007	mg/L	0.00298	417.70%
Tl 190.801	3.8	0.0025	mg/L	0.01112	0.0025	mg/L	0.01112	446.89%
V 292.402	-573.0	-0.0030	mg/L	0.00017	-0.0030	mg/L	0.00017	5.56%
Zn 206.200	2655.9	-0.0020	mg/L	0.00028	-0.0020	mg/L	0.00028	14.36%
Na 330.237	936.0	0.1311	mg/L	0.13596	0.1311	mg/L	0.13596	103.70%
Cd 226.502	3853.4	0.0036	mg/L	0.00017	0.0036	mg/L	0.00017	4.85%
Ti 334.940	9131.1	0.0113	mg/L	0.00003	0.0113	mg/L	0.00003	0.31%
Ca 227.546	373498.9	550.12	mg/L	4.209	550.12	mg/L	4.209	0.77%

Sequence No.: 13 **Autosampler Location: 6**
Sample ID: ICSAB **Date Collected: 2/18/2003 3:35:40 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	76840.0	0.2181	mg/L	0.00007	0.2181	mg/L	0.00007	0.03%
Al 308.215	28468080.7	521.29	mg/L	1.518	521.29	mg/L	1.518	0.29%
As 188.979	213.6	0.1041	mg/L	0.00729	0.1041	mg/L	0.00729	7.00%
Ba 233.527	44315.9	0.5168	mg/L	0.00160	0.5168	mg/L	0.00160	0.31%
Be 313.107	4969596.1	0.5136	mg/L	0.00187	0.5136	mg/L	0.00187	0.36%
Co 228.616	24561.0	0.4740	mg/L	0.00148	0.4740	mg/L	0.00148	0.31%
Cr 267.716	183462.3	0.4941	mg/L	0.00106	0.4941	mg/L	0.00106	0.22%
Cu 324.752	293938.5	0.5753	mg/L	0.00031	0.5753	mg/L	0.00031	0.05%
Fe 273.955	9848122.9	184.80	mg/L	0.497	184.80	mg/L	0.497	0.27%
Mg 279.077	24158572.0	514.20	mg/L	1.462	514.20	mg/L	1.462	0.28%
Mn 257.610	167057.6	0.4866	mg/L	0.00185	0.4866	mg/L	0.00185	0.38%
Ni 231.604	62188.7	0.9339	mg/L	0.00417	0.9339	mg/L	0.00417	0.45%
Pb 220.353	9476.5	0.4963	mg/L	0.00449	0.4963	mg/L	0.00449	0.90%
Sb 206.836	2171.0	0.6530	mg/L	0.00066	0.6530	mg/L	0.00066	0.10%
Se 196.026	1173.3	0.5153	mg/L	0.00903	0.5153	mg/L	0.00903	1.75%

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Ag 328.068	-945.3	0.0041	mg/L	0.00009	0.0041	mg/L	0.00009	2.30%
Al 308.215	1574784.2	28.836	mg/L	0.1845	28.836	mg/L	0.1845	0.64%
As 188.979	49.6	0.0268	mg/L	0.00049	0.0268	mg/L	0.00049	1.84%
Ba 233.527	7499.8	0.0875	mg/L	0.00017	0.0875	mg/L	0.00017	0.19%
Be 313.107	12473.8	0.0021	mg/L	0.00000	0.0021	mg/L	0.00000	0.21%
Co 228.616	440.7	0.0071	mg/L	0.00013	0.0071	mg/L	0.00013	1.87%
Cr 267.716	18836.7	0.0509	mg/L	0.00024	0.0509	mg/L	0.00024	0.47%
Cu 324.752	30295.3	0.0608	mg/L	0.00257	0.0608	mg/L	0.00257	4.23%
Fe 273.955	1860125.0	34.905	mg/L	0.2112	34.905	mg/L	0.2112	0.61%
Mg 279.077	114812.3	2.4452	mg/L	0.00888	2.4452	mg/L	0.00888	0.36%
Mn 257.610	102917.0	0.3014	mg/L	0.00265	0.3014	mg/L	0.00265	0.88%
Ni 231.604	1044.5	0.0154	mg/L	0.00016	0.0154	mg/L	0.00016	1.03%
Pb 220.353	2057.0	0.1020	mg/L	0.00044	0.1020	mg/L	0.00044	0.43%
Sb 206.836	4.8	0.0038	mg/L	0.00047	0.0038	mg/L	0.00047	12.27%
Se 196.026	-14.6	0.0026	mg/L	0.00043	0.0026	mg/L	0.00043	16.56%
Tl 190.801	-8.0	-0.0002	mg/L	0.00038	-0.0002	mg/L	0.00038	240.88%
V 292.402	34800.2	0.0898	mg/L	0.00068	0.0898	mg/L	0.00068	0.76%
Zn 206.200	10970.7	0.1001	mg/L	0.00109	0.1001	mg/L	0.00109	1.09%
Na 330.237	1033.7	0.6941	mg/L	0.08678	0.6941	mg/L	0.08678	12.50%
Cd 226.502	812.4	0.0009	mg/L	0.00001	0.0009	mg/L	0.00001	1.55%
Ti 334.940	918098.2	0.7473	mg/L	0.00567	0.7473	mg/L	0.00567	0.76%
Ca 227.546	819.2	0.9161	mg/L	0.03498	0.9161	mg/L	0.03498	3.82%

Sequence No.: 27
Sample ID: B0258-02ADUP,5660
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 28
Date Collected: 2/18/2003 4:31:34 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0258-02ADUP,5660

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-1464.5	0.0042	mg/L	0.00009	0.0042	mg/L	0.00009	2.17%
Al 308.215	2023899.9	37.060	mg/L	0.6513	37.060	mg/L	0.6513	1.76%
As 188.979	64.2	0.0344	mg/L	0.00029	0.0344	mg/L	0.00029	0.84%
Ba 233.527	8857.3	0.1034	mg/L	0.00033	0.1034	mg/L	0.00033	0.32%
Be 313.107	15539.0	0.0025	mg/L	0.00003	0.0025	mg/L	0.00003	1.19%
Co 228.616	538.1	0.0088	mg/L	0.00000	0.0088	mg/L	0.00000	0.02%
Cr 267.716	25290.5	0.0683	mg/L	0.00104	0.0683	mg/L	0.00104	1.53%
Cu 324.752	29483.6	0.0602	mg/L	0.00014	0.0602	mg/L	0.00014	0.23%
Fe 273.955	2267577.4	42.551	mg/L	0.7126	42.551	mg/L	0.7126	1.67%
Mg 279.077	139623.7	2.9735	mg/L	0.05219	2.9735	mg/L	0.05219	1.76%
Mn 257.610	115713.8	0.3389	mg/L	0.00681	0.3389	mg/L	0.00681	2.01%
Ni 231.604	1270.9	0.0188	mg/L	0.00017	0.0188	mg/L	0.00017	0.90%
Pb 220.353	2361.4	0.1174	mg/L	0.00047	0.1174	mg/L	0.00047	0.40%
Sb 206.836	3.4	0.0039	mg/L	0.00027	0.0039	mg/L	0.00027	6.89%
Se 196.026	-15.7	0.0040	mg/L	0.00123	0.0040	mg/L	0.00123	30.39%
Tl 190.801	-6.5	0.0008	mg/L	0.00128	0.0008	mg/L	0.00128	164.66%
V 292.402	43235.3	0.1116	mg/L	0.00205	0.1116	mg/L	0.00205	1.84%
Zn 206.200	12215.6	0.1115	mg/L	0.00037	0.1115	mg/L	0.00037	0.33%
Na 330.237	793.4	0.6278	mg/L	0.00086	0.6278	mg/L	0.00086	0.14%
Cd 226.502	988.5	0.0011	mg/L	0.00004	0.0011	mg/L	0.00004	3.22%
Ti 334.940	1031344.1	0.8394	mg/L	0.01469	0.8394	mg/L	0.01469	1.75%
Ca 227.546	909.7	0.9864	mg/L	0.00888	0.9864	mg/L	0.00888	0.90%

Sequence No.: 28
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/18/2003 4:35:38 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-10617.6	-0.0052	mg/L	0.00050	-0.0052	mg/L	0.00050	9.67%
Al 308.215	27780262.8	508.69	mg/L	4.421	508.69	mg/L	4.421	0.87%

As 188.979	22.9	0.0076	mg/L	0.00628	0.0076	mg/L	0.00628 83.14%
Ba 233.527	670.9	-0.0017	mg/L OK	0.00029	-0.0017	mg/L	0.00029 16.66%
Be 313.107	-231.4	0.0000	mg/L OK	0.00000	0.0000	mg/L	0.00000 15.70%
Co 228.616	0.7	-0.0010	mg/L	0.00083	-0.0010	mg/L	0.00083 86.22%
Cr 267.716	-711.3	0.0004	mg/L OK	0.00004	0.0004	mg/L	0.00004 11.28%
Cu 324.752	-9440.9	0.0057	mg/L	0.00031	0.0057	mg/L	0.00031 5.40%
Fe 273.955	9651183.7	181.10	mg/L	1.170	181.10	mg/L	1.170 0.65%
Mg 279.077	23683936.1	504.09	mg/L	3.670	504.09	mg/L	3.670 0.73%
Mn 257.610	-3951.5	-0.0130	mg/L	0.00014	-0.0130	mg/L	0.00014 1.04%
Ni 231.604	-58.6	-0.0009	mg/L	0.00033	-0.0009	mg/L	0.00033 37.34%
Pb 220.353	-802.3	0.0011	mg/L OK	0.00108	0.0011	mg/L	0.00108 102.85%
Sb 206.836	-43.8	-0.0023	mg/L OK	0.01110	-0.0023	mg/L	0.01110 492.50%
Se 196.026	-144.7	-0.0095	mg/L	0.00652	-0.0095	mg/L	0.00652 68.66%
Tl 190.801	20.5	0.0088	mg/L	0.00323	0.0088	mg/L	0.00323 36.64%
V 292.402	-592.5	-0.0031	mg/L OK	0.00011	-0.0031	mg/L	0.00011 3.60%
Zn 206.200	3062.4	0.0022	mg/L OK	0.00005	0.0022	mg/L	0.00005 2.13%
Na 330.237	837.5	0.0899	mg/L	0.07552	0.0899	mg/L	0.07552 84.02%
Cd 226.502	3774.0	0.0035	mg/L	0.00025	0.0035	mg/L	0.00025 7.11%
Ti 334.940	8685.6	0.0109	mg/L	0.00007	0.0109	mg/L	0.00007 0.62%
Ca 227.546	369688.8	544.52	mg/L	5.950	544.52	mg/L	5.950 1.09%

Sequence No.: 29
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/18/2003 4:38:17 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	72259.7	0.2051	mg/L	0.00238	0.2051	mg/L	0.00238	1.16%
Al 308.215	26994992.3	494.31	mg/L	1.786	494.31	mg/L	1.786	0.36%
As 188.979	219.0	0.1068	mg/L	0.00713	0.1068	mg/L	0.00713	6.68%
Ba 233.527	43004.7	0.5017	mg/L	0.00527	0.5017	mg/L	0.00527	1.05%
Be 313.107	4722385.4	0.4880	mg/L	0.00251	0.4880	mg/L	0.00251	0.51%
Co 228.616	23569.0	0.4548	mg/L	0.00109	0.4548	mg/L	0.00109	0.24%
Cr 267.716	177289.4	0.4774	mg/L	0.00427	0.4774	mg/L	0.00427	0.89%
Cu 324.752	271063.0	0.5312	mg/L	0.00589	0.5312	mg/L	0.00589	1.11%
Fe 273.955	9358541.6	175.61	mg/L	0.585	175.61	mg/L	0.585	0.33%
Mg 279.077	22944415.4	488.35	mg/L	1.948	488.35	mg/L	1.948	0.40%
Mn 257.610	161196.8	0.4695	mg/L	0.00389	0.4695	mg/L	0.00389	0.83%
Ni 231.604	60054.7	0.9018	mg/L	0.00575	0.9018	mg/L	0.00575	0.64%
Pb 220.353	9059.3	0.4742	mg/L	0.00142	0.4742	mg/L	0.00142	0.30%
Sb 206.836	2072.8	0.6234	mg/L	0.00894	0.6234	mg/L	0.00894	1.43%
Se 196.026	1162.6	0.5086	mg/L	0.01845	0.5086	mg/L	0.01845	3.63%
Tl 190.801	248.1	0.0962	mg/L	0.01306	0.0962	mg/L	0.01306	13.57%
V 292.402	187881.2	0.4875	mg/L	0.00406	0.4875	mg/L	0.00406	0.83%
Zn 206.200	100120.8	0.8992	mg/L	0.00527	0.8992	mg/L	0.00527	0.59%
Na 330.237	61310.7	26.028	mg/L	0.2517	26.028	mg/L	0.2517	0.97%
Cd 226.502	337460.8	0.9359	mg/L	0.00652	0.9359	mg/L	0.00652	0.70%
Ti 334.940	8192.2	0.0103	mg/L	0.00018	0.0103	mg/L	0.00018	1.79%
Ca 227.546	354985.7	522.81	mg/L	6.157	522.81	mg/L	6.157	1.18%

Sequence No.: 30
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/18/2003 4:41:01 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	506443.5	1.2892	mg/L	0.01066	1.2892	mg/L	0.01066	0.83%
Al 308.215	555174.1	10.166	mg/L	0.0066	10.166	mg/L	0.0066	0.06%
As 188.979	1072.3	0.5271	mg/L	0.00006	0.5271	mg/L	0.00006	0.01%
Ba 233.527	910371.1	10.800	mg/L	0.0533	10.800	mg/L	0.0533	0.49%
Be 313.107	2489384.5	0.2573	mg/L	0.00168	0.2573	mg/L	0.00168	0.65%

Mean Data: B0258-15A,5660

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3591.5	0.0018	mg/L	0.00022	0.0018	mg/L	0.00022	11.97%
Al 308.215	4497475.5	82.355	mg/L	0.4605	82.355	mg/L	0.4605	0.56%
As 188.979	51.0	0.0284	mg/L	0.00076	0.0284	mg/L	0.00076	2.68%
Ba 233.527	32260.6	0.3801	mg/L	0.00271	0.3801	mg/L	0.00271	0.71%
Be 313.107	36651.5	0.0057	mg/L	0.00001	0.0057	mg/L	0.00001	0.16%
Co 228.616	1418.5	0.0244	mg/L	0.00003	0.0244	mg/L	0.00003	0.13%
Cr 267.716	33517.5	0.0905	mg/L	0.00025	0.0905	mg/L	0.00025	0.28%
Cu 324.752	10448.7	0.0253	mg/L	0.00026	0.0253	mg/L	0.00026	1.04%
Fe 273.955	3154602.3	59.196	mg/L	0.2545	59.196	mg/L	0.2545	0.43%
Mg 279.077	303671.5	6.4675	mg/L	0.01721	6.4675	mg/L	0.01721	0.27%
Mn 257.610	271856.7	0.7956	mg/L	0.00602	0.7956	mg/L	0.00602	0.76%
Ni 231.604	3098.9	0.0459	mg/L	0.00001	0.0459	mg/L	0.00001	0.03%
Pb 220.353	1498.4	0.0800	mg/L	0.00033	0.0800	mg/L	0.00033	0.41%
Sb 206.836	-0.8	0.0042	mg/L	0.00106	0.0042	mg/L	0.00106	24.91%
Se 196.026	-32.0	0.0013	mg/L	0.00180	0.0013	mg/L	0.00180	142.47%
Tl 190.801	-11.8	0.0021	mg/L	0.00104	0.0021	mg/L	0.00104	49.18%
V 292.402	47484.2	0.1220	mg/L	0.00094	0.1220	mg/L	0.00094	0.77%
Zn 206.200	15389.7	0.1395	mg/L	0.00038	0.1395	mg/L	0.00038	0.27%
Na 330.237	130.8	0.6219	mg/L	0.07947	0.6219	mg/L	0.07947	12.78%
Cd 226.502	1081.2	0.0007	mg/L	0.00016	0.0007	mg/L	0.00016	21.79%
Ti 334.940	2231638.9	1.8164	mg/L	0.01201	1.8164	mg/L	0.01201	0.66%
Ca 227.546	1744.2	2.0947	mg/L	0.00837	2.0947	mg/L	0.00837	0.40%

Sequence No.: 48
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/18/2003 5:54:55 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-10366.6	-0.0045	mg/L	0.00086	-0.0045	mg/L	0.00086	19.04%
Al 308.215	27637814.1	506.09	mg/L	0.020	506.09	mg/L	0.020	0.00%
As 188.979	-23.3	-0.0147	mg/L	0.01100	-0.0147	mg/L	0.01100	74.81%
Ba 233.527	752.0	-0.0007	mg/L OK	0.00048	-0.0007	mg/L	0.00048	70.26%
Be 313.107	-707.7	-0.0001	mg/L OK	0.00002	-0.0001	mg/L	0.00002	36.62%
Co 228.616	6.0	-0.0009	mg/L OK	0.00016	-0.0009	mg/L	0.00016	18.93%
Cr 267.716	-758.9	0.0002	mg/L OK	0.00004	0.0002	mg/L	0.00004	16.40%
Cu 324.752	-11253.9	0.0022	mg/L OK	0.00013	0.0022	mg/L	0.00013	6.02%
Fe 273.955	9604412.6	180.23	mg/L	0.068	180.23	mg/L	0.068	0.04%
Mg 279.077	23591007.7	502.11	mg/L	0.248	502.11	mg/L	0.248	0.05%
Mn 257.610	-3920.3	-0.0129	mg/L	0.00020	-0.0129	mg/L	0.00020	1.52%
Ni 231.604	-57.8	-0.0009	mg/L	0.00029	-0.0009	mg/L	0.00029	32.90%
Pb 220.353	-798.0	0.0010	mg/L OK	0.00040	0.0010	mg/L	0.00040	38.04%
Sb 206.836	-50.1	-0.0042	mg/L	0.01373	-0.0042	mg/L	0.01373	327.03%
Se 196.026	-137.7	-0.0070	mg/L OK	0.01158	-0.0070	mg/L	0.01158	166.42%
Tl 190.801	-3.2	-0.0002	mg/L OK	0.00194	-0.0002	mg/L	0.00194	>999.9%
V 292.402	-689.5	-0.0033	mg/L	0.00007	-0.0033	mg/L	0.00007	2.15%
Zn 206.200	2972.0	0.0015	mg/L OK	0.00039	0.0015	mg/L	0.00039	25.84%
Na 330.237	874.2	0.1158	mg/L	0.10285	0.1158	mg/L	0.10285	88.85%
Cd 226.502	3770.4	0.0035	mg/L OK	0.00037	0.0035	mg/L	0.00037	10.53%
Ti 334.940	8733.9	0.0109	mg/L	0.00016	0.0109	mg/L	0.00016	1.48%
Ca 227.546	362320.1	533.64	mg/L	13.757	533.64	mg/L	13.757	2.58%

Sequence No.: 49
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/18/2003 5:57:34 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-119	0.66	B	Aluminum	506085	-6	8300	-0.10	na	na
Arsenic	WOD-SS-119	8.5		Aluminum	506085	-26.7	8300	-0.44	na	na
Cadmium	WOD-SS-119	0.23		Aluminum	506085	3.6	8300	0.06	J K	na
Chromium	WOD-SS-119	11.5		Aluminum	506085	15.3	8300	0.25	na	na
Cobalt	WOD-SS-119	2.6		Aluminum	506085	-1	8300	-0.02	na	na
Copper	WOD-SS-119	6.5	B	Aluminum	506085	5.7	8300	0.09	na	na
Lead	WOD-SS-119	33.2		Aluminum	506085	4.2	8300	0.07	na	na
Manganese	WOD-SS-119	140		Aluminum	506085	-13	8300	-0.21	na	na
Nickel	WOD-SS-119	5.4		Aluminum	506085	-0.9	8300	-0.01	na	na
Potassium	WOD-SS-119	279		Aluminum	506085	-326.3	8300	-5.35	na	na
Selenium	WOD-SS-119	0.52	U	Aluminum	506085	-9.5	8300	-0.16	na	U J L
Silver	WOD-SS-119	0.28		Aluminum	506085	-5.2	8300	-0.09	J L	na
Sodium	WOD-SS-119	15.6	B	Aluminum	506085	271	8300	4.44	na	na
Thallium	WOD-SS-119	0.17	U	Aluminum	506085	8.8	8300	0.14	na	na
Vanadium	WOD-SS-119	16.7		Aluminum	506085	-3.3	8300	-0.05	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-119	0.66	B	Iron	180227	-6	7400	-0.25	na	na
Arsenic	WOD-SS-119	8.5		Iron	180227	-26.7	7400	-1.10	J L	na
Cadmium	WOD-SS-119	0.23		Iron	180227	3.6	7400	0.15	J K	na
Chromium	WOD-SS-119	11.5		Iron	180227	15.3	7400	0.63	na	na
Cobalt	WOD-SS-119	2.6		Iron	180227	-1	7400	-0.04	na	na
Copper	WOD-SS-119	6.5	B	Iron	180227	5.7	7400	0.23	na	na
Lead	WOD-SS-119	33.2		Iron	180227	4.2	7400	0.17	na	na
Manganese	WOD-SS-119	140		Iron	180227	-13	7400	-0.53	na	na
Nickel	WOD-SS-119	5.4		Iron	180227	-0.9	7400	-0.04	na	na
Potassium	WOD-SS-119	279		Iron	180227	-326.3	7400	-13.40	na	na
Selenium	WOD-SS-119	0.52	U	Iron	180227	-9.5	7400	-0.39	na	U J L
Silver	WOD-SS-119	0.28		Iron	180227	-5.2	7400	-0.21	J L	na
Sodium	WOD-SS-119	15.6	B	Iron	180227	271	7400	11.13	na	na
Thallium	WOD-SS-119	0.17	U	Iron	180227	8.8	7400	0.36	na	na
Vanadium	WOD-SS-119	16.7		Iron	180227	-3.3	7400	-0.14	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-119-0507	0.31	B	Aluminum	506085	-6	8190	-0.10	na	na
Arsenic	WOD-SU-119-0507	2		Aluminum	506085	-26.7	8190	-0.43	J L	na
Cadmium	WOD-SU-119-0507	0.06		Aluminum	506085	3.6	8190	0.06	J K	na
Chromium	WOD-SU-119-0507	6.5		Aluminum	506085	15.3	8190	0.25	na	na
Cobalt	WOD-SU-119-0507	2		Aluminum	506085	-1	8190	-0.02	na	na
Copper	WOD-SU-119-0507	2.5	B	Aluminum	506085	5.7	8190	0.09	na	na
Lead	WOD-SU-119-0507	3.9		Aluminum	506085	4.2	8190	0.07	na	na
Manganese	WOD-SU-119-0507	48.7		Aluminum	506085	-13	8190	-0.21	na	na
Nickel	WOD-SU-119-0507	4.1		Aluminum	506085	-0.9	8190	-0.01	na	na
Potassium	WOD-SU-119-0507	162		Aluminum	506085	-326.3	8190	-5.28	na	na
Selenium	WOD-SU-119-0507	0.44	U	Aluminum	506085	-9.5	8190	-0.15	na	U J L
Silver	WOD-SU-119-0507	0.21		Aluminum	506085	-5.2	8190	-0.08	J L	na
Sodium	WOD-SU-119-0507	6.7	B	Aluminum	506085	271	8190	4.39	na	na
Thallium	WOD-SU-119-0507	0.15	U	Aluminum	506085	8.8	8190	0.14	na	na
Vanadium	WOD-SU-119-0507	10.2		Aluminum	506085	-3.3	8190	-0.05	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-119-0507	0.31	B	Iron	180227	-6	5740	-0.19	na	na
Arsenic	WOD-SU-119-0507	2		Iron	180227	-26.7	5740	-0.85	J L	na
Cadmium	WOD-SU-119-0507	0.06		Iron	180227	3.6	5740	0.11	J K	na
Chromium	WOD-SU-119-0507	6.5		Iron	180227	15.3	5740	0.49	na	na
Cobalt	WOD-SU-119-0507	2		Iron	180227	-1	5740	-0.03	na	na
Copper	WOD-SU-119-0507	2.5	B	Iron	180227	5.7	5740	0.18	na	na
Lead	WOD-SU-119-0507	3.9		Iron	180227	4.2	5740	0.13	na	na
Manganese	WOD-SU-119-0507	48.7		Iron	180227	-13	5740	-0.41	na	na
Nickel	WOD-SU-119-0507	4.1		Iron	180227	-0.9	5740	-0.03	na	na
Potassium	WOD-SU-119-0507	162		Iron	180227	-326.3	5740	-10.39	na	na
Selenium	WOD-SU-119-0507	0.44	U	Iron	180227	-9.5	5740	-0.30	na	U J L
Silver	WOD-SU-119-0507	0.21		Iron	180227	-5.2	5740	-0.17	J L	na
Sodium	WOD-SU-119-0507	6.7	B	Iron	180227	271	5740	8.63	na	na
Thallium	WOD-SU-119-0507	0.15	U	Iron	180227	8.8	5740	0.28	na	na
Vanadium	WOD-SU-119-0507	10.2		Iron	180227	-3.3	5740	-0.11	na	na

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

FB-021203S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	9070.0820		17.0000	U	9100.00	99.7		P
Antimony	75-125	514.6275		3.0000	U	455.00	113.1		P
Arsenic	75-125	493.5855		3.0000	U	455.00	108.5		P
Barium	75-125	9488.1835		4.0000	U	9100.00	104.3		P
Beryllium	75-125	231.2555		0.5000	U	227.00	101.9		P
Cadmium	75-125	242.4785		0.7000	U	227.00	106.8		P
Calcium									NR
Chromium	75-125	928.0000		0.9260	B	910.00	101.9		P
Cobalt	75-125	2358.7445		0.9000	U	2270.00	103.9		P
Copper	75-125	1173.0530		17.5625	B	1130.00	102.3		P
Iron	80-120	4691.2400		26.0000	U	4550.00	103.1		P
Lead	75-125	488.2805		4.0000	U	455.00	107.3		P
Magnesium									NR
Manganese	75-125	2350.7875		1.2410	B	2270.00	103.5		P
Mercury	75-125	4.2481		0.1320	U	4.83	88.0		CV
Nickel	75-125	2340.5870		1.2070	B	2200.00	106.3		P
Potassium									NR
Selenium	75-125	472.3070		9.0000	U	455.00	103.8		P
Silver	75-125	1141.1270		2.0000	U	1130.00	101.0		P
Sodium									NR
Thallium	75-125	487.2065		3.0000	U	420.00	116.0		P
Vanadium	75-125	2309.2700		0.7000	U	2270.00	101.7		P
Zinc	75-125	2351.0350		12.9185	B	2270.00	103.0		P
Cyanide									NR

Comments:

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WOD-SS-115S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	15.2561		0.1736	B	20.78	72.6	N	P
Arsenic	75-125	23.3354		1.2238		20.78	106.4		P
Barium	75-125	444.6519		3.9984	B	415.60	106.0		P
Beryllium	75-125	10.6239		0.0941	B	10.37	101.5		P
Cadmium	75-125	11.0789		0.0416	B	10.37	106.4		P
Calcium									NR
Chromium	75-125	45.3800		2.3243		41.56	103.6		P
Cobalt	75-125	110.8359		0.3244	B	103.67	106.6		P
Copper	75-125	57.2561		2.7758		51.61	105.6		P
Iron									NR
Lead	75-125	26.4151		4.6593		20.78	104.7		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.7316		0.0162	U	0.65	112.6		CV
Nickel	75-125	107.9169		0.7053	B	103.67	103.4		P
Potassium									NR
Selenium	75-125	20.5115		0.4110	U	20.78	98.7		P
Silver	75-125	53.0088		0.1861	B	51.61	102.3		P
Sodium									NR
Thallium	75-125	21.9554		0.1370	U	20.78	105.7		P
Vanadium	75-125	109.1396		4.1007		103.67	101.3		P
Zinc	75-125	111.6544		4.5735		103.67	103.3		P
Cyanide									NR

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WOD-SS-115A

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		494.86		3.80	B	455.0	107.9		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

FB-021203D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		17.0000	U	17.0000	U			P
Antimony		3.0000	U	3.0000	U			P
Arsenic		3.0000	U	3.0000	U			P
Barium		4.0000	U	4.0000	U			P
Beryllium		0.5000	U	0.5000	U			P
Cadmium		0.7000	U	0.7000	U			P
Calcium		240.0000	U	240.0000	U			P
Chromium		0.9260	B	0.6760	B	31.2	*	P
Cobalt		0.9000	U	0.9000	U			P
Copper		17.5625	B	17.3375	B	1.3		P
Iron		26.0000	U	26.0000	U			P
Lead		4.0000	U	4.0000	U			P
Magnesium		8.0000	U	8.0000	U			P
Manganese		1.2410	B	1.5365	B	21.3	*	P
Mercury		0.1320	U	0.1340	U			CV
Nickel		1.2070	B	0.8000	U	200.0	*	P
Potassium		206.4810	B	108.4355	B	62.3	*	P
Selenium		9.0000	U	9.0000	U			P
Silver		2.0000	U	2.0000	U			P
Sodium		173.6055	B	122.3205	B	34.7	*	P
Thallium		3.0000	U	3.0000	U			P
Vanadium		0.7000	U	0.7000	U			P
Zinc		12.9185	B	14.5915	B	12.2		P
Cyanide								NR

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6
DUPLICATES

EPA SAMPLE NO.

WOD-SS-115D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0 % Solids for Duplicate: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		1316.9716		1692.5612		25.0	*	P
Antimony		0.1736	B	0.1768	B	1.8		P
Arsenic	0.9134	1.2238		1.5715		24.9		P
Barium		3.9984	B	4.7201	B	16.6		P
Beryllium		0.0941	B	0.1129	B	18.2		P
Cadmium		0.0416	B	0.0504	B	19.1		P
Calcium	36.5364	41.8407		45.0509		7.4		P
Chromium	0.9134	2.3243		3.1186		29.2		P
Cobalt		0.3244	B	0.4011	B	21.1		P
Copper	1.3701	2.7758		2.7491		1.0		P
Iron		1594.1356		1943.3241		19.7		P
Lead		4.6593		5.3635		14.1		P
Magnesium	22.8352	111.6744		135.8013		19.5		P
Manganese		13.7640		15.4794		11.7		P
Mercury		0.0162	U	0.0162	U			CV
Nickel		0.7053	B	0.8591	B	19.7		P
Potassium	45.6704	108.6553		114.4273		5.2		P
Selenium		0.4110	U	0.4110	U			P
Silver		0.1861	B	0.1908	B	2.5		P
Sodium		8.1886	B	4.8699	B	50.8		P
Thallium		0.1370	U	0.1370	U			P
Vanadium	2.2835	4.1007		5.0977		21.7		P
Zinc	2.2835	4.5735		5.0911		10.7		P
Cyanide								NR

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LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Solid LCS Source: ERA LOT#802115

Aqueous LCS Source: HIGH_PURITY

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C Limits		%R
Aluminum	9100.0	9026.1	99.2	910.0	870.4	682.5	1137.5	95.6
Antimony	455.0	525.9	115.6	45.5	50.0	34.1	56.9	109.9
Arsenic	455.0	518.2	113.9	45.5	47.1	39.1	51.9	103.5
Barium	9100.0	9593.5	105.4	910.0	940.9	859.0	1010.1	103.4
Beryllium	227.0	233.6	102.9	22.7	22.7	17.0	28.4	100.0
Cadmium	227.0	249.4	109.9	22.7	23.3	20.2	25.2	102.6
Calcium	22700.0	22943.3	101.1	2270.0	2169.1	1702.5	2837.5	95.6
Chromium	910.0	924.6	101.6	91.0	91.0	84.4	97.4	100.0
Cobalt	2270.0	2348.7	103.5	227.0	230.8	170.2	283.8	101.7
Copper	1130.0	1191.0	105.4	113.0	117.6	84.8	141.2	104.1
Iron	4550.0	4691.3	103.1	455.0	460.9	341.2	568.8	101.3
Lead	455.0	511.3	112.4	45.5	47.8	39.8	51.9	105.1
Magnesium	22700.0	23254.4	102.4	2270.0	2269.1	1702.5	2837.5	100.0
Manganese	2270.0	2388.7	105.2	227.0	234.4	170.2	283.8	103.3
Mercury	4.6	4.1	89.1	0.8	0.7	0.6	1.0	87.5
Nickel	2270.0	2351.3	103.6	227.0	227.0	170.2	283.8	100.0
Potassium	22700.0	21433.2	94.4	2270.0	2046.4	1702.5	2837.5	90.1
Selenium	455.0	494.1	108.6	45.5	43.4	37.3	46.9	95.4
Silver	1130.0	1148.7	101.7	113.0	111.2	98.1	124.3	98.4
Sodium	22700.0	22416.4	98.8	2270.0	2186.4	1702.5	2837.5	96.3
Thallium	455.0	508.9	111.8	45.5	47.3	34.1	56.9	104.0
Vanadium	2270.0	2330.7	102.7	227.0	228.4	170.2	283.8	100.6
Zinc	2270.0	2353.7	103.7	227.0	227.9	170.2	283.8	100.4
Cyanide								

9
ICP SERIAL DILUTIONS

EPA SAMPLE NO.

FB-0212031.

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Matrix (soil/water): WATER Level (low/med): MED

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	17.00	U	85.00	U			P
Antimony	3.00	U	15.00	U			P
Arsenic	3.00	U	15.00	U			P
Barium	4.00	U	20.00	U			P
Beryllium	0.50	U	2.50	U			P
Cadmium	0.70	U	3.50	U			P
Calcium	240.00	U	1200.00	U			P
Chromium	0.93	B	3.00	U	100.0		P
Cobalt	0.90	U	4.50	U			P
Copper	17.56	B	36.61	B	108.5		P
Iron	26.00	U	130.00	U			P
Lead	4.00	U	20.00	U			P
Magnesium	8.00	U	40.00	U			P
Manganese	1.24	B	4.00	U	100.0		P
Mercury							NR
Nickel	1.21	B	4.00	U	100.0		P
Potassium	206.48	B	490.77	B	137.7		P
Selenium	9.00	U	45.00	U			P
Silver	2.00	U	10.00	U			P
Sodium	173.61	B	415.00	U	100.0		P
Thallium	3.00	U	15.00	U			P
Vanadium	0.70	U	3.50	U			P
Zinc	12.92	B	35.00	U	100.0		P

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FB-021203	02/15/03		50
FB-021203D	02/15/03		50
FB-021203S	02/15/03		50
LCSW	02/15/03		50
PBW	02/15/03		50
RB-021203	02/15/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/15/03	0.50	50
PBS	02/15/03	1.00	50
SV1150305	02/15/03	1.18	50
SV1160204	02/15/03	1.07	50
SV1170102	02/15/03	1.19	50
SV1180406	02/15/03	1.24	50
SV1190507	02/15/03	1.13	50
SV1200406	02/15/03	1.18	50
SVDUP06	02/15/03	1.16	50
WOD-SS-115	02/15/03	1.19	50
WOD-SS-115D	02/15/03	1.19	50
WOD-SS-115S	02/15/03	1.19	50
WOD-SS-116	02/15/03	1.04	50
WOD-SS-117	02/15/03	1.12	50
WOD-SS-118	02/15/03	1.23	50
WOD-SS-119	02/15/03	1.04	50
WOD-SS-120	02/15/03	1.18	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FB-021203	02/17/03		132
FB-021203D	02/17/03		134
FB-021203S	02/17/03		138
LCSW	02/17/03		100
PBW	02/17/03		100
RB-021203	02/17/03		140

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/17/03	0.60	100
PBS	02/17/03	0.60	100
SV1150305	02/17/03	0.69	100
SV1160204	02/17/03	0.63	100
SV1170102	02/17/03	0.68	100
SV1180406	02/17/03	0.62	100
SV1190507	02/17/03	0.75	100
SV1200406	02/17/03	0.60	100
SVDUP06	02/17/03	0.65	100
WOD-SS-115	02/17/03	0.67	100
WOD-SS-115D	02/17/03	0.67	100
WOD-SS-115S	02/17/03	0.67	100
WOD-SS-116	02/17/03	0.65	100
WOD-SS-117	02/17/03	0.67	100
WOD-SS-118	02/17/03	0.66	100
WOD-SS-119	02/17/03	0.75	100
WOD-SS-120	02/17/03	0.63	100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	% R	Analytes: ALKALINITY	SULFATE	AMMONIA	TOTAL NITROGEN	VOLATILES	ZINC	CHLORIDE
S0	1.00	1033					X			
S1	1.00	1035					X			
S2	1.00	1037					X			
S3	1.00	1039					X			
ZZZZZZ	1.00	1042								
ICV	1.00	1044					X			
ICB	1.00	1046					X			
ICSA	1.00	1049								
ICSAB	1.00	1051					X			
PBW	1.00	1053					X			
LCSW	1.00	1056					X			
FB-021203	1.00	1058					X			
FB-021203D	1.00	1100					X			
FB-021203L	1.00	1102					X			
RB-021203	1.00	1105					X			
CCV	1.00	1107					X			
CCB	1.00	1109					X			
PBS	1.00	1112					X			
LCSS	1.00	1114					X			
WOD-SS-115	1.00	1116					X			
WOD-SS-115D	1.00	1118					X			
SV1150305	1.00	1121					X			
WOD-SS-116	1.00	1123					X			
SV1160204	1.00	1125					X			
WOD-SS-117	1.00	1128					X			
SV1170102	1.00	1130					X			
CCV	1.00	1133					X			
CCB	1.00	1135					X			
WOD-SS-118	1.00	1137					X			
SV1180406	1.00	1139					X			
WOD-SS-119	1.00	1142					X			
SVDUP06	1.00	1144					X			

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	AL	TL	V	ZN	CN
SV1190507	1.00	1146																	X							
WOD-SS-120	1.00	1148																	X							
SV1200406	1.00	1151																	X							
ICSA	1.00	1153																								
ICSAB	1.00	1155																	X							
CCV	1.00	1158																	X							
CCB	1.00	1200																	X							

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	% R	Analytes: ALB ASB AAS BAA BED CDA CAR CRO CUE FEB PBG MGN MNG HGI K SE AGA NAL TV ZN CN
S0	1.00	1204		X
S1	1.00	1206		X
S2	1.00	1208		X
S3	1.00	1211		X
ZZZZZZ	1.00	1213		
ICV	1.00	1215		X
ICB	1.00	1218		X
ICSA	1.00	1220		
ICSAB	1.00	1222		X
PBW	1.00	1225		X
LCSW	1.00	1227		X
FB-021203	1.00	1229		X
FB-021203D	1.00	1231		X
FB-021203L	1.00	1234		X
RB-021203	1.00	1236		X
CCV	1.00	1238		X
CCB	1.00	1241		X
PBS	1.00	1243		X
LCSS	1.00	1245		X
WOD-SS-115	1.00	1248		X
WOD-SS-115D	1.00	1250		X
SV1150305	1.00	1252		X
WOD-SS-116	1.00	1255		X
SV1160204	1.00	1257		X
WOD-SS-117	1.00	1259		X
SV1170102	1.00	1302		X
CCV	1.00	1304		X
CCB	1.00	1306		X
WOD-SS-118	1.00	1308		X
SV1180406	1.00	1311		X
WOD-SS-119	1.00	1313		X
SVDUP06	1.00	1315		X

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: ALB	ASB	AAS	BBA	BBE	CCD	CCA	CCR	CCO	CCU	FE	PB	MGN	MNG	HGI	NI	K	SE	AG	ANAL	T	V	ZN	CNN
SV1190507	1.00	1318																					X				
WOD-SS-120	1.00	1320																					X				
SV1200406	1.00	1322																					X				
ICSA	1.00	1324																									
ICSAB	1.00	1327																					X				
CCV	1.00	1329																					X				
CCB	1.00	1331																					X				

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1436		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S1	1.00	1445		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S2	1.00	1447		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S3	1.00	1451		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ZZZZZZ	1.00	1458																									
ZZZZZZ	1.00	1501																									
ZZZZZZ	1.00	1502																									
ZZZZZZ	1.00	1506																									
ZZZZZZ	1.00	1510																									
ZZZZZZ	1.00	1516																									
ICV	1.00	1524		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ICB	1.00	1530		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ICSA	1.00	1534		X						X				X			X										
ICSAB	1.00	1536		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
PBW	1.00	1539		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
LCSW	1.00	1543		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
FB-021203	1.00	1547		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
FB-021203D	1.00	1551		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
FB-021203S	1.00	1555		X	X	X	X	X	X		X	X	X	X	X		X		X		X	X	X	X	X	X	
FB-021203L	1.00	1600		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCV	1.00	1604		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCB	1.00	1608		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ZZZZZZ	1.00	1612																									
RB-021203	1.00	1616		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
PBS	1.00	1620		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
LCSS	1.00	1624		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
WOD-SS-115	1.00	1628		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
WOD-SS-115D	1.00	1632		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ICSA	1.00	1636		X						X				X			X										
ICSAB	1.00	1639		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCV	1.00	1642		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCB	1.00	1646		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				ALB	SBS	AAS	BAE	BBE	CCD	CDA	CAR	CRO	CCU	FUE	PEB	MBG	MNG	HGI	NI	KI	SE	AG	NA	TL	V	ZN	CN	
WOD-SS-115S	1.00	1650			X	X	X	X	X		X	X	X		X			X		X	X		X	X	X		
WOD-SS-115A	1.00	1654			X																							
SV1150305	1.00	1658		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
WOD-SS-116	1.00	1702		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SV1160204	1.00	1706		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
WOD-SS-117	1.00	1710		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SV1170102	1.00	1715		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
WOD-SS-118	1.00	1719		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
CCV	1.00	1723		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
CCB	1.00	1727		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SV1180406	1.00	1731		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
WOD-SS-119	1.00	1735		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SVDUP06	1.00	1739		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SV1190507	1.00	1743		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
WOD-SS-120	1.00	1748		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
SV1200406	1.00	1752		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
ICSA	1.00	1756		X						X				X		X												
ICSAB	1.00	1758		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
CCV	1.00	1801		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		
CCB	1.00	1805		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X		

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: AL	AS	AB	AS	BA	BE	CD	CA	CR	CO	CU	CE	FB	PB	MG	MN	HG	NI	K	SE	AG	AA	NL	TL	V	ZN	CN
S0	1.00	1325																		X										
S0.2	1.00	1326																		X										
S1	1.00	1328																		X										
S2	1.00	1329																		X										
S5	1.00	1330																		X										
S10	1.00	1332																		X										
ICV	1.00	1333																		X										
ICB	1.00	1334																		X										
PBW	1.00	1336																		X										
LCSW	1.00	1337																		X										
FB-021203	1.00	1338																		X										
FB-021203D	1.00	1340																		X										
FB-021203S	1.00	1341																		X										
RB-021203	1.00	1342																		X										
PBS	1.00	1344																		X										
LCSS	1.00	1345																		X										
CCV	1.00	1346																		X										
CCB	1.00	1348																		X										
WOD-SS-115	1.00	1349																		X										
WOD-SS-115D	1.00	1350																		X										
WOD-SS-115S	1.00	1352																		X										
SV1150305	1.00	1353																		X										
WOD-SS-116	1.00	1354																		X										
SV1160204	1.00	1356																		X										
WOD-SS-117	1.00	1357																		X										
SV1170102	1.00	1358																		X										
CCV	1.00	1400																		X										
CCB	1.00	1401																		X										
WOD-SS-118	1.00	1402																		X										
SV1180406	1.00	1404																		X										
WOD-SS-119	1.00	1405																		X										
SVDUP06	1.00	1406																		X										

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ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0258

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: ALBS	SBAS	ABAE	BBED	CCAR	CROU	CUE	FBG	PMN	MHGI	NK	SE	AG	AL	NA	TV	ZN	CN
SV1190507	1.00	1408											X								
WOD-SS-120	1.00	1409											X								
SV1200406	1.00	1410											X								
ZZZZZZ	1.00	1412																			
CCV	1.00	1413											X								
CCB	1.00	1414											X								

Mitkem Corporation

Date: *19-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0258
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6168**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **2/28/03**			Run ID: **TOC1_030228A**		
Client ID: **MB-6168**	Batch ID: **6168**	Units: **mg/L**			Analysis Date: **2/28/03**			SeqNo: **86778**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6168**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **2/28/03**			Run ID: **TOC1_030228A**		
Client ID: **LCS-6168**	Batch ID: **6168**	Units: **mg/L**			Analysis Date: **2/28/03**			SeqNo: **86779**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	48.7	6.0	54.1	0	90	80	120	0	0		

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

FIELD DUPLICATE PRECISION

ANALYTE	WOD-SU-DUP06	WOD-SU-118-0406	RPD	DIFFERENCE
Aluminum	2600	3820	38.01	1220
Antimony	0.22B	0.21B	#VALUE!	#VALUE!
Arsenic	2.3	2.7	16.00	0.4
Barium	12.2	17.5	35.69	5.3
Beryllium	0.18	0.21	15.38	0.03
Cadmium	0.03U	0.03U	#VALUE!	#VALUE!
Calcium	43.7	50.9	15.22	7.2
Chromium	3.9	3.3	16.67	0.6
Cobalt	0.42	0.33	24.00	0.09
Copper	1.0B	1.5B	#VALUE!	#VALUE!
Iron	2220	2210	0.45	10
Lead	1.4	1.3	7.41	0.1
Magnesium	144	131	9.45	13
Manganese	23	15.3	40.21	7.7
Mercury	0.02U	0.02U	#VALUE!	#VALUE!
Nickel	0.94	1.1	15.69	0.16
Potassium	95.5B	87.7B	#VALUE!	#VALUE!
Selenium	0.43U	0.41U	#VALUE!	#VALUE!
Silver	0.10U	0.09U	#VALUE!	#VALUE!
Sodium	3.9U	4.5B	#VALUE!	#VALUE!
Thallium	0.14U	0.14U	#VALUE!	#VALUE!
Vanadium	4.3	4.2	2.35	0.1
Zinc	2.8B	3.3B	#VALUE!	#VALUE!

Sequence No.: 43
Sample ID: B0258-10A,5660 WOD-SS-119 QuF 5/6/03
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 38
Date Collected: 2/18/2003 5:34:24 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0258-10A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-7468.9	0.0049	mg/L	0.00015	0.0049	mg/L	0.00015	3.03%
Al 308.215	7921484.1	~~145.05 mg/L~~		0.958	145.05	mg/L	0.958	0.66%
As 188.979	288.3	0.1481	mg/L	0.00002	0.1481	mg/L	0.00002	0.01%
Ba 233.527	57415.1	~~0.6755 mg/L~~		0.00249	0.6755	mg/L	0.00249	0.37%
Be 313.107	54470.6	0.0083	mg/L	0.00005	0.0083	mg/L	0.00005	0.58%
Co 228.616	2600.2	0.0453	mg/L	0.00001	0.0453	mg/L	0.00001	0.03%
Cr 267.716	74420.0	0.2007	mg/L	0.00050	0.2007	mg/L	0.00050	0.25%
Cu 324.752	53840.6	0.1139	mg/L	0.00018	0.1139	mg/L	0.00018	0.16%
Fe 273.955	6891941.0	129.33	mg/L	0.806	129.33	mg/L	0.806	0.62%
Mg 279.077	600683.8	12.798	mg/L	0.0509	12.798	mg/L	0.0509	0.40%
Mn 257.610	834293.1	2.4400	mg/L	0.00415	2.4400	mg/L	0.00415	0.17%
Ni 231.604	6368.2	0.0947	mg/L	0.00048	0.0947	mg/L	0.00048	0.50%
Pb 220.353	11767.9	0.5797	mg/L	0.00245	0.5797	mg/L	0.00245	0.42%
Sb 206.836	9.7	0.0115	mg/L	0.00083	0.0115	mg/L	0.00083	7.18%
Se 196.026	-73.2	0.0010	mg/L	0.00162	0.0010	mg/L	0.00162	163.98%
Tl 190.801	-41.0	0.0000	mg/L	0.00157	0.0000	mg/L	0.00157	>999.9%
V 292.402	113295.4	0.2922	mg/L	0.00058	0.2922	mg/L	0.00058	0.20%
Zn 206.200	48031.6	0.4389	mg/L	0.00128	0.4389	mg/L	0.00128	0.29%
Na 330.237	1064.7	1.3363	mg/L	0.08107	1.3363	mg/L	0.08107	6.07%
Cd 226.502	3231.9	0.0040	mg/L	0.00009	0.0040	mg/L	0.00009	2.18%
Ti 334.940	3231673.6	2.6304	mg/L	0.01766	2.6304	mg/L	0.01766	0.67%
Ca 227.546	7509.5	10.020	mg/L	0.0104	10.020	mg/L	0.0104	0.10%

Sequence No.: 44
Sample ID: B0258-11A,5660
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 39
Date Collected: 2/18/2003 5:38:39 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0258-11A,5660

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-2712.9	0.0018	mg/L	0.00000	0.0018	mg/L	0.00000	0.07%
Al 308.215	2997194.2	54.883	mg/L	0.2626	54.883	mg/L	0.2626	0.48%
As 188.979	91.9	0.0478	mg/L	0.00137	0.0478	mg/L	0.00137	2.86%
Ba 233.527	21901.8	0.2578	mg/L	0.00086	0.2578	mg/L	0.00086	0.33%
Be 313.107	22192.0	0.0037	mg/L	0.00001	0.0037	mg/L	0.00001	0.38%
Co 228.616	585.5	0.0089	mg/L	0.00010	0.0089	mg/L	0.00010	1.08%
Cr 267.716	30764.2	0.0830	mg/L	0.00027	0.0830	mg/L	0.00027	0.32%
Cu 324.752	9009.4	0.0217	mg/L	0.00023	0.0217	mg/L	0.00023	1.05%
Fe 273.955	2500477.3	46.921	mg/L	0.2338	46.921	mg/L	0.2338	0.50%
Mg 279.077	142588.4	3.0374	mg/L	0.01862	3.0374	mg/L	0.01862	0.61%
Mn 257.610	165857.2	0.4856	mg/L	0.00147	0.4856	mg/L	0.00147	0.30%
Ni 231.604	1345.6	0.0198	mg/L	0.00003	0.0198	mg/L	0.00003	0.14%
Pb 220.353	479.1	0.0286	mg/L	0.00043	0.0286	mg/L	0.00043	1.50%
Sb 206.836	3.9	0.0046	mg/L	0.00087	0.0046	mg/L	0.00087	18.73%
Se 196.026	-23.3	0.0019	mg/L	0.00049	0.0019	mg/L	0.00049	25.72%
Tl 190.801	-10.2	0.0007	mg/L	0.00025	0.0007	mg/L	0.00025	34.00%
V 292.402	35651.9	0.0916	mg/L	0.00014	0.0916	mg/L	0.00014	0.15%
Zn 206.200	6523.1	0.0584	mg/L	0.00023	0.0584	mg/L	0.00023	0.39%
Na 330.237	434.8	0.6199	mg/L	0.03759	0.6199	mg/L	0.03759	6.06%
Cd 226.502	800.5	0.0004	mg/L	0.00004	0.0004	mg/L	0.00004	9.14%
Ti 334.940	1690363.9	1.3758	mg/L	0.00522	1.3758	mg/L	0.00522	0.38%
Ca 227.546	885.7	0.9223	mg/L	0.00288	0.9223	mg/L	0.00288	0.31%

Sequence No.: 45
Sample ID: B0258-12A,5660

Autosampler Location: 40
Date Collected: 2/18/2003 5:42:47 PM

1113

As = 0.1481 mg/L × 1L/1000mL × 50mL/1.04g × 1000g/1kg × 1/0.84 = 8.476 mg/kg

* Reported result = 8.5 mg/kg

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 27, 2003**
FROM:	**EDWARD SEDLMYER**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION – VOA/SVOA/PCB CTO 848, NASA WALLOPS ISLAND SDG B0262**		

SAMPLES: 2 / Aqueous

RB-021303 TB-021302*

11 / Solid

WOD-SS-121	WOD-SS-122	WOD-SS-123
WOD-SS-124	WOD-SS-125	WOD-SU-121-1012
WOD-SU-122-1012	WOD-SU-123-1012	WOD-SU-124-0203
WOD-SU-125-0203	WOD-SU-DUP07	

OVERVIEW

The sample set for CTO 848; SDG B0262, NASA Wallops Island consists of one (1) rinse blank, one (1) trip blank, one (1) field duplicate, and ten (10) solid environmental samples. One field duplicate pair was included in this SDG: (WOD-SU-122-1012 / WOD-SU-DUP07. All samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOC), TCL semivolatile organic compounds (SVOA), and TCL polychlorinated biphenyls (PCBs). The sample denoted with an asterisk (*) was analyzed for TCL VOAs only.

The samples were collected by TetraTech NUS on February 13th and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analysis and reporting protocols.

The findings in this report are based upon a general review of all available data including: data completeness, system performance, holding times, initial / continuing calibrations, laboratory method blank results, surrogate spike/internal standard recoveries, blank spike results, field duplicate results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- None.

Minor Problems

- The initial calibration analyzed on 02/20/03 had a percent relative standard deviation (%RSD) greater than the 30% (but was <50%) quality control limit for acetone on instrument "V6". The positive acetone result for sample RB021303 was qualified as estimated (J). The direction of bias cannot be determined.

- An initial calibration contained a %RSD that exceeded the 30% (and was >50%) quality control limit for 3-nitroaniline on instrument "S3", on 03/12/03. The non-detected result for 3-nitroaniline

was qualified as estimated (UJ) in sample RB-021303. The direction of bias cannot be determined.

- An initial calibration contained a %RSD that exceeded the 30% (and was >50%) quality control limit for 4-chloroaniline on instrument "S2", on 3/13/03. The non-detected results for 4-chloroaniline were qualified as estimated (UJ in the associated samples. The direction of bias cannot be detemined.

- The following compounds were detected in the method blanks at the maximum concentrations indicated below:

Compound	Concentration	Action Level
Acetone	4 ug/kg	40 ug/kg
2-Hexanone	2 ug/kg	10 ug/kg
Methylene chloride[1]	6 ug/L	60 ug/L

[1] Concentration taken from the associated trip blank.

Blank Actions

- Value < Reporting Limit (RL); report value followed by a B.
- Value > RL and < Action Level; report value followed by a B.
- Value > RL and > Action Level; report value unqualified.

Dilution factors, percent solids, and sample aliquots were taken into consideration during the application of all action levels. The affected positive results were qualified (B) as a result of blank contamination for acetone. Field quality control samples were not qualified due to method blank contamination.

- Surrogate 1,2-dichloroethane-d4 had a recovery greater than the quality control criteria for samples WOD-SS-124, WOD-SU-124-0203, WOD-SU-123-1012MS, and WOD-SU-123-1012MSD. The positive and non-detected results for samples WOD-SS-124 and WOD-SU-124-0203 have been qualified J and UJ, respectively. No action was taken on samples WOD-SU-123-1012MS and WOD-SU-123-1012MSD because these samples represent quality control analyses.

- Samples WOD-SS-122, WOD-SU-122-1012, WOD-SS-125, and WOD-SS-123 had a low internal standard recovery for 1,4-dichlorobenzene-d4. The positive and non-detected results quantitated using 1,4-dichlorobenzene-d4 have been qualified J and UJ, respectively.

- Sample WOD-SS-124 had low recoveries for all three internal standards. The sample was re-analyzed with a low internal standard recovery for 1,4-dichlorobenzene-d4. The re-analysis was used for validation and the non-detected results quantitiated using 1,4-dichlorobenzene-d4 have been qualified as estimated, UJ.

- Sample WOD-SS-123 had a low internal standard recovery for perylene-d12. The positive and non-detected results quantitated using perylene-d12 have been qualified J and UJ, respectively.

Notes

An initial calibration %RSD exceeded the 30% (but were <50%) quality control limit for hexachlorocyclopentadiene on instrument "S2" on 03/09/03. Only non-detected results were reported for hexachlorocyclopentadiene and these did not require qualification based on this noncompliance.

Initial calibration %RSDs exceeded the 30% (but were <50%) quality control limit for hexachlorocyclopentadiene, 2,4-dinitrophenol, and atrazine on instrument "S2" on 03/13/03. Only non-detected results were reported for the aforementioned compounds and these did not require qualification based on this noncompliance.

Initial calibration %RSDs exceeded the 30% (but were <50%) quality control limit for 4-chloroaniline, carbazole, and benzaldehyde on instrument "S3" on 03/12/03. Only non-detected results were reported for the aforementioned compounds and did not require qualification based on this noncompliance.

A calibration verification percent difference (%D) exceeded the 25% (but was <50%) quality control limit for acetone on instrument "V5", on 02/23/03. The positive result for acetone in sample WOD-SU-125-0203 was already qualified as non-detected, so no action was taken on the calibration non-compliance.

A calibration verification %D exceeded the 25% (but was <50%) quality control limit for 1,2-dibromo-3-chloropropane on instrument "V6", on 02/24/03. Only non-detected results were reported for 1,2-dibromo-3-chloropropane and did not require qualification based on this noncompliance.

Calibration verification %Ds exceeded the 25% (but was <50%) quality control limit for 4-nitroaniline and benzaldehyde on instrument "S2", on 03/10/03 @0101. Only non-detected results were reported for the aforementioned compounds and these did not require qualification based on this noncompliance.

Calibration verification %Ds exceeded the 25% (but was <50%) quality control limit for 4-chloroaniline and benzaldehyde on instrument "S2", on 03/10/03 @1525. Only non-detected results were reported for the aforementioned compounds and these did not require qualification based on this noncompliance.

Calibration verification %D exceeded the 25% (but was <50%) quality control limit for benzaldehyde on instrument "S2", on 03/14/03 @0228. Only non-detected results were reported for benzaldehyde and these did not require qualification based on this noncompliance.

Calibration verification %D exceeded the 25% (but was <50%) quality control limit for 4-chloroaniline, carbazole, atrazine, and benzaldehyde on instrument "S3", on 03/13/03 @0935. Only non-detected results were reported for the aforementioned compounds and these did not require qualification based on this noncompliance.

Recovery of several volatile compounds were outside the quality control limits for the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis of sample WOD-SU-123-1012. Additionally, the relative percent difference (%RPD) for styrene was outside the quality control limit. Laboratory Control Sample (LCS) recoveries of all spike compounds were compliant. Therefore, no action was taken.

Surrogates phenol-d5 and 2-fluorophenol had recoveries greater than the quality control criteria for the method blank (SBLK2S) and LCS (S2SLCS) associated with the soil samples. No action was taken on the out of control surrogates because all the associated soil samples had acceptable surrogate recoveries.

Recovery of several semivolatile compounds were outside the quality control limits for the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analysis of sample WOD-SU-123-1012. The laboratory control sample (LCS) recoveries of all spike compounds that were out of control in the MS/MSD were compliant. Therefore, no action was taken.

The laboratory control sample duplicate associated with the aqueous sample had a recovery greater than the quality control criteria for 4-nitroaniline. The LCS recovery of all spike compounds met quality control criteria. Therefore, no action was taken.

Sample WOD-SS-123 required a dilution due to high concentrations of hydrocarbons. All non-detected compounds in sample WOD-SS-123 have elevated reporting limits.

The aqueous reporting limits exceeded the reporting limits stated in the laboratory specification for all PCB compounds.

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

EXECUTIVE SUMMARY

Laboratory Performance Issues: The Initial or continuing calibrations of several volatile and semivolatile compounds failed to meet linearity criteria. Several compounds were detected in laboratory method blanks resulting in the qualification of analytical data.

Other Factors Affecting Data Quality: Internal standards for volatiles and semivolatiles failed to meet recovery criteria. A surrogate for the volatile analyses did not meet recovery criteria. The PCB reporting limits for aqueous samples did not meet laboratory specification.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (9/94) as modified by Region III and the NFESC guidelines "Navy IRCDQM" (September, 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

TetraTech NUS

Edward Sedlmyer
Chemist/Data Validator

TetraTech NUS

Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION:

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	9	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	3		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-021302
samp_date	2/13/2003
lab_id	B0262-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION:

nsample	TB-021302
samp_date	2/13/2003
lab_id	B0262-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	6		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-121		nsample	WOD-SS-121		nsample	WOD-SS-122	
samp_date	2/13/2003		samp_date	2/13/2003		samp_date	2/13/2003	
lab_id	B0262-02C		lab_id	B0262-02C		lab_id	B0262-04C	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/KG		units	UG/KG		units	UG/KG	
Pct_Solids	92		Pct_Solids	92		Pct_Solids	85	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	36	U	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	5	J	P
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	3	B	B
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	14	U	
1,1,2,2-TETRACHLOROETHANE	14	U	
1,1,2-TRICHLOROETHANE	14	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	14	U	
1,1-DICHLOROETHANE	14	U	
1,1-DICHLOROETHENE	14	U	
1,2,4-TRICHLOROBENZENE	14	UJ	N
1,2,4-TRIMETHYLBENZENE	14	U	
1,2-DIBROMO-3-CHLOROPROPANE	14	UJ	N
1,2-DIBROMOETHANE	14	U	
1,2-DICHLOROBENZENE	14	UJ	N
1,2-DICHLOROETHANE	14	U	
1,2-DICHLOROPROPANE	14	U	
1,3,5-TRIMETHYLBENZENE	14	U	
1,3-DICHLOROBENZENE	14	UJ	N
1,4-DICHLOROBENZENE	14	UJ	N
2-BUTANONE	18	U	
2-HEXANONE	14	U	
4-METHYL-2-PENTANONE	14	U	
ACETONE	150	U	
BENZENE	14	U	
BROMODICHLOROMETHANE	14	U	
BROMOFORM	14	U	
BROMOMETHANE	14	U	
CARBON DISULFIDE	14	U	
CARBON TETRACHLORIDE	14	U	
CHLOROBENZENE	14	U	
CHLORODIBROMOMETHANE	14	U	
CHLOROETHANE	14	U	
CHLOROFORM	14	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-122
samp_date	2/13/2003
lab_id	B0262-04C
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	14	U	
CIS-1,2-DICHLOROETHENE	14	U	
CIS-1,3-DICHLOROPROPENE	14	U	
CYCLOHEXANE	14	U	
DICHLORODIFLUOROMETHANE	14	U	
ETHYLBENZENE	14	U	
ISOPROPYLBENZENE	14	U	
M+P-XYLENES	14	U	
METHYL ACETATE	57	U	
METHYL CYCLOHEXANE	14	U	
METHYL TERT-BUTYL ETHER	14	U	
METHYLENE CHLORIDE	9	B	B
O-XYLENE	14	U	
STYRENE	14	U	
TETRACHLOROETHENE	14	U	
TOLUENE	14	U	
TOTAL XYLENES	14	U	
TRANS-1,2-DICHLOROETHENE	14	U	
TRANS-1,3-DICHLOROPROPENE	14	U	
TRICHLOROETHENE	14	U	
TRICHLOROFLUOROMETHANE	14	U	
VINYL CHLORIDE	14	U	

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07B
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	UJ	N
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	N
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	UJ	N
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	UJ	N
1,4-DICHLOROBENZENE	12	UJ	N
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	14	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07B
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	1	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09CRE
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	UJ	R
1,1,2,2-TETRACHLOROETHANE	12	UJ	R
1,1,2-TRICHLOROETHANE	12	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	12	UJ	R
1,1-DICHLOROETHANE	12	UJ	R
1,1-DICHLOROETHENE	12	UJ	R
1,2,4-TRICHLOROBENZENE	12	UJ	NR
1,2,4-TRIMETHYLBENZENE	12	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	NR
1,2-DIBROMOETHANE	12	UJ	R
1,2-DICHLOROBENZENE	12	UJ	NR
1,2-DICHLOROETHANE	12	UJ	R
1,2-DICHLOROPROPANE	12	UJ	R
1,3,5-TRIMETHYLBENZENE	12	UJ	R
1,3-DICHLOROBENZENE	12	UJ	NR
1,4-DICHLOROBENZENE	12	UJ	NR
2-BUTANONE	12	UJ	R
2-HEXANONE	12	UJ	R
4-METHYL-2-PENTANONE	12	UJ	R
ACETONE	32	B	A
BENZENE	12	UJ	R
BROMODICHLOROMETHANE	12	UJ	R
BROMOFORM	12	UJ	R
BROMOMETHANE	12	UJ	R
CARBON DISULFIDE	12	UJ	R
CARBON TETRACHLORIDE	12	UJ	R
CHLOROBENZENE	12	UJ	R
CHLORODIBROMOMETHANE	12	UJ	R
CHLOROETHANE	12	UJ	R
CHLOROFORM	12	UJ	R

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09CRE
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	UJ	R
CIS-1,2-DICHLOROETHENE	12	UJ	R
CIS-1,3-DICHLOROPROPENE	12	UJ	R
CYCLOHEXANE	12	UJ	R
DICHLORODIFLUOROMETHANE	12	UJ	R
ETHYLBENZENE	12	UJ	R
ISOPROPYLBENZENE	12	UJ	R
M+P-XYLENES	12	UJ	R
METHYL ACETATE	4	J	PR
METHYL CYCLOHEXANE	12	UJ	R
METHYL TERT-BUTYL ETHER	12	UJ	R
METHYLENE CHLORIDE	4	B	B
O-XYLENE	12	UJ	R
STYRENE	12	UJ	R
TETRACHLOROETHENE	12	UJ	R
TOLUENE	12	UJ	R
TOTAL XYLENES	12	UJ	R
TRANS-1,2-DICHLOROETHENE	12	UJ	R
TRANS-1,3-DICHLOROPROPENE	12	UJ	R
TRICHLOROETHENE	12	UJ	R
TRICHLOROFLUOROMETHANE	12	UJ	R
VINYL CHLORIDE	12	UJ	R

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11C
qc_type	NM
units	UG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	UJ	N
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	UJ	N
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	UJ	N
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	UJ	N
1,4-DICHLOROBENZENE	11	UJ	N
2-BUTANONE	14		
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	130		
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11C
qc_type	NM
units	UG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	37		
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	9	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03B
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	4	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	UJ	N
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	UJ	N
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	UJ	N
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	UJ	N
1,4-DICHLOROBENZENE	12	UJ	N
2-BUTANONE	12	U	
2-HEXANONE	12	U	
4-METHYL-2-PENTANONE	12	U	
ACETONE	19	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	6	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08B
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	12	U	
1,1,2,2-TETRACHLOROETHANE	12	U	
1,1,2-TRICHLOROETHANE	12	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	12	U	
1,1-DICHLOROETHANE	12	U	
1,1-DICHLOROETHENE	12	U	
1,2,4-TRICHLOROBENZENE	12	U	
1,2,4-TRIMETHYLBENZENE	12	U	
1,2-DIBROMO-3-CHLOROPROPANE	12	U	
1,2-DIBROMOETHANE	12	U	
1,2-DICHLOROBENZENE	12	U	
1,2-DICHLOROETHANE	12	U	
1,2-DICHLOROPROPANE	12	U	
1,3,5-TRIMETHYLBENZENE	12	U	
1,3-DICHLOROBENZENE	12	U	
1,4-DICHLOROBENZENE	12	U	
2-BUTANONE	12	U	
2-HEXANONE	3	B	A
4-METHYL-2-PENTANONE	12	U	
ACETONE	11	B	A
BENZENE	12	U	
BROMODICHLOROMETHANE	12	U	
BROMOFORM	12	U	
BROMOMETHANE	12	U	
CARBON DISULFIDE	12	U	
CARBON TETRACHLORIDE	12	U	
CHLOROBENZENE	12	U	
CHLORODIBROMOMETHANE	12	U	
CHLOROETHANE	12	U	
CHLOROFORM	12	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08B
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	12	U	
CIS-1,2-DICHLOROETHENE	12	U	
CIS-1,3-DICHLOROPROPENE	12	U	
CYCLOHEXANE	12	U	
DICHLORODIFLUOROMETHANE	12	U	
ETHYLBENZENE	12	U	
ISOPROPYLBENZENE	12	U	
M+P-XYLENES	12	U	
METHYL ACETATE	12	U	
METHYL CYCLOHEXANE	12	U	
METHYL TERT-BUTYL ETHER	12	U	
METHYLENE CHLORIDE	7	B	B
O-XYLENE	12	U	
STYRENE	12	U	
TETRACHLOROETHENE	12	U	
TOLUENE	12	U	
TOTAL XYLENES	12	U	
TRANS-1,2-DICHLOROETHENE	12	U	
TRANS-1,3-DICHLOROPROPENE	12	U	
TRICHLOROETHENE	12	U	
TRICHLOROFLUOROMETHANE	12	U	
VINYL CHLORIDE	12	U	

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10B
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	UJ	R
1,1,2,2-TETRACHLOROETHANE	10	UJ	R
1,1,2-TRICHLOROETHANE	10	UJ	R
1,1,2-TRICHLOROTRIFLUOROETHANE	10	UJ	R
1,1-DICHLOROETHANE	10	UJ	R
1,1-DICHLOROETHENE	10	UJ	R
1,2,4-TRICHLOROBENZENE	10	UJ	R
1,2,4-TRIMETHYLBENZENE	10	UJ	R
1,2-DIBROMO-3-CHLOROPROPANE	10	UJ	R
1,2-DIBROMOETHANE	10	UJ	R
1,2-DICHLOROBENZENE	10	UJ	R
1,2-DICHLOROETHANE	10	UJ	R
1,2-DICHLOROPROPANE	10	UJ	R
1,3,5-TRIMETHYLBENZENE	10	UJ	R
1,3-DICHLOROBENZENE	10	UJ	R
1,4-DICHLOROBENZENE	10	UJ	R
2-BUTANONE	10	UJ	R
2-HEXANONE	10	UJ	R
4-METHYL-2-PENTANONE	10	UJ	R
ACETONE	27	B	A
BENZENE	10	UJ	R
BROMODICHLOROMETHANE	10	UJ	R
BROMOFORM	10	UJ	R
BROMOMETHANE	10	UJ	R
CARBON DISULFIDE	10	UJ	R
CARBON TETRACHLORIDE	10	UJ	R
CHLOROBENZENE	10	UJ	R
CHLORODIBROMOMETHANE	10	UJ	R
CHLOROETHANE	10	UJ	R
CHLOROFORM	10	UJ	R

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10B
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	UJ	R
CIS-1,2-DICHLOROETHENE	10	UJ	R
CIS-1,3-DICHLOROPROPENE	10	UJ	R
CYCLOHEXANE	10	UJ	R
DICHLORODIFLUOROMETHANE	10	UJ	R
ETHYLBENZENE	10	UJ	R
ISOPROPYLBENZENE	10	UJ	R
M+P-XYLENES	10	UJ	R
METHYL ACETATE	5	J	PR
METHYL CYCLOHEXANE	10	UJ	R
METHYL TERT-BUTYL ETHER	10	UJ	R
METHYLENE CHLORIDE	5	B	B
O-XYLENE	10	UJ	R
STYRENE	10	UJ	R
TETRACHLOROETHENE	10	UJ	R
TOLUENE	10	UJ	R
TOTAL XYLENES	10	UJ	R
TRANS-1,2-DICHLOROETHENE	10	UJ	R
TRANS-1,3-DICHLOROPROPENE	10	UJ	R
TRICHLOROETHENE	10	UJ	R
TRICHLOROFLUOROMETHANE	10	UJ	R
VINYL CHLORIDE	10	UJ	R

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-125-0203	nsample	WOD-SU-125-0203	nsample	WOD-SU-DUP07
samp_date	2/13/2003	samp_date	2/13/2003	samp_date	2/13/2003
lab_id	B0262-12B	lab_id	B0262-12B	lab_id	B0262-06B
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	91
DUP_OF:		DUP_OF:		DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	10	U	
1,1,2,2-TETRACHLOROETHANE	10	U	
1,1,2-TRICHLOROETHANE	10	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	10	U	
1,1-DICHLOROETHANE	10	U	
1,1-DICHLOROETHENE	10	U	
1,2,4-TRICHLOROBENZENE	10	U	
1,2,4-TRIMETHYLBENZENE	1	J	P
1,2-DIBROMO-3-CHLOROPROPANE	10	U	
1,2-DIBROMOETHANE	10	U	
1,2-DICHLOROBENZENE	10	U	
1,2-DICHLOROETHANE	10	U	
1,2-DICHLOROPROPANE	10	U	
1,3,5-TRIMETHYLBENZENE	1	J	P
1,3-DICHLOROBENZENE	10	U	
1,4-DICHLOROBENZENE	10	U	
2-BUTANONE	10	U	
2-HEXANONE	3	B	A
4-METHYL-2-PENTANONE	10	U	
ACETONE	20	B	A
BENZENE	10	U	
BROMODICHLOROMETHANE	10	U	
BROMOFORM	10	U	
BROMOMETHANE	10	U	
CARBON DISULFIDE	10	U	
CARBON TETRACHLORIDE	10	U	
CHLOROBENZENE	10	U	
CHLORODIBROMOMETHANE	10	U	
CHLOROETHANE	10	U	
CHLOROFORM	10	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	10	U	
CIS-1,2-DICHLOROETHENE	10	U	
CIS-1,3-DICHLOROPROPENE	10	U	
CYCLOHEXANE	10	U	
DICHLORODIFLUOROMETHANE	10	U	
ETHYLBENZENE	10	U	
ISOPROPYLBENZENE	10	U	
M+P-XYLENES	1	J	P
METHYL ACETATE	10	U	
METHYL CYCLOHEXANE	10	U	
METHYL TERT-BUTYL ETHER	10	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	10	U	
STYRENE	10	U	
TETRACHLOROETHENE	10	U	
TOLUENE	10	U	
TOTAL XYLENES	1	J	P
TRANS-1,2-DICHLOROETHENE	10	U	
TRANS-1,3-DICHLOROPROPENE	10	U	
TRICHLOROETHENE	10	U	
TRICHLOROFLUOROMETHANE	10	U	
VINYL CHLORIDE	10	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	11	U	
1,1,2,2-TETRACHLOROETHANE	11	U	
1,1,2-TRICHLOROETHANE	11	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	11	U	
1,1-DICHLOROETHANE	11	U	
1,1-DICHLOROETHENE	11	U	
1,2,4-TRICHLOROBENZENE	11	U	
1,2,4-TRIMETHYLBENZENE	11	U	
1,2-DIBROMO-3-CHLOROPROPANE	11	U	
1,2-DIBROMOETHANE	11	U	
1,2-DICHLOROBENZENE	11	U	
1,2-DICHLOROETHANE	11	U	
1,2-DICHLOROPROPANE	11	U	
1,3,5-TRIMETHYLBENZENE	11	U	
1,3-DICHLOROBENZENE	11	U	
1,4-DICHLOROBENZENE	11	U	
2-BUTANONE	11	U	
2-HEXANONE	11	U	
4-METHYL-2-PENTANONE	11	U	
ACETONE	8	B	A
BENZENE	11	U	
BROMODICHLOROMETHANE	11	U	
BROMOFORM	11	U	
BROMOMETHANE	11	U	
CARBON DISULFIDE	11	U	
CARBON TETRACHLORIDE	11	U	
CHLOROBENZENE	11	U	
CHLORODIBROMOMETHANE	11	U	
CHLOROETHANE	11	U	
CHLOROFORM	11	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06B
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	11	U	
CIS-1,2-DICHLOROETHENE	11	U	
CIS-1,3-DICHLOROPROPENE	11	U	
CYCLOHEXANE	11	U	
DICHLORODIFLUOROMETHANE	11	U	
ETHYLBENZENE	11	U	
ISOPROPYLBENZENE	11	U	
M+P-XYLENES	11	U	
METHYL ACETATE	11	U	
METHYL CYCLOHEXANE	11	U	
METHYL TERT-BUTYL ETHER	11	U	
METHYLENE CHLORIDE	2	B	B
O-XYLENE	11	U	
STYRENE	11	U	
TETRACHLOROETHENE	11	U	
TOLUENE	11	U	
TOTAL XYLENES	11	U	
TRANS-1,2-DICHLOROETHENE	11	U	
TRANS-1,3-DICHLOROPROPENE	11	U	
TRICHLOROETHENE	11	U	
TRICHLOROFLUOROMETHANE	11	U	
VINYL CHLORIDE	11	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION:

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION: P

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-121
samp_date	2/13/2003
lab_id	B0262-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	UJ	C
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SS-121
samp_date	2/13/2003
lab_id	B0262-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SS-121
samp_date	2/13/2003
lab_id	B0262-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-122	nsample	WOD-SS-122	nsample	WOD-SS-122
samp_date	2/13/2003	samp_date	2/13/2003	samp_date	2/13/2003
lab_id	B0262-04A	lab_id	B0262-04A	lab_id	B0262-04A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	85	Pct_Solids	85	Pct_Solids	85
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	970	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	970	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	970	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	970	U	
4,6-DINITRO-2-METHYLPHENOL	970	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	UJ	C
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	970	U	
4-NITROPHENOL	970	U	
ACENAPHTHENE	380	U	
ACENAPHTHYLENE	380	U	
ACETOPHENONE	380	U	
ANTHRACENE	380	U	
ATRAZINE	380	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	380	U	
BENZO(A)ANTHRACENE	380	U	
BENZO(A)PYRENE	380	U	
BENZO(B)FLUORANTHENE	45	J	P
BENZO(G,H,I)PERYLENE	380	U	
BENZO(K)FLUORANTHENE	380	U	
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	380	U	
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	380	U	
DIBENZO(A,H)ANTHRACENE	380	U	
DIBENZOFURAN	380	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	U	
FLUORANTHENE	380	U	
FLUORENE	380	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	380	U	
ISOPHORONE	380	U	
NAPHTHALENE	380	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	970	U	
PHENANTHRENE	380	U	
PHENOL	380	U	
PYRENE	380	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	1900	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	1900	U	
2,4,5-TRICHLOROPHENOL	4800	U	
2,4,6-TRICHLOROPHENOL	1900	U	
2,4-DICHLOROPHENOL	1900	U	
2,4-DIMETHYLPHENOL	1900	U	
2,4-DINITROPHENOL	4800	U	
2,4-DINITROTOLUENE	1900	U	
2,6-DINITROTOLUENE	1900	U	
2-CHLORONAPHTHALENE	1900	U	
2-CHLOROPHENOL	1900	U	
2-METHYLNAPHTHALENE	1900	U	
2-METHYLPHENOL	1900	U	
2-NITROANILINE	4800	U	
2-NITROPHENOL	1900	U	
3,3'-DICHLOROBENZIDINE	1900	U	
3-NITROANILINE	4800	U	
4,6-DINITRO-2-METHYLPHENOL	4800	U	
4-BROMOPHENYL PHENYL ETHER	1900	U	
4-CHLORO-3-METHYLPHENOL	1900	U	
4-CHLOROANILINE	1900	U	
4-CHLOROPHENYL PHENYL ETHER	1900	U	
4-METHYLPHENOL	1900	U	
4-NITROANILINE	4800	U	
4-NITROPHENOL	4800	U	
ACENAPHTHENE	1900	U	
ACENAPHTHYLENE	1900	U	
ACETOPHENONE	1900	U	
ANTHRACENE	1900	U	
ATRAZINE	1900	U	

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	1900	U	
BENZO(A)ANTHRACENE	1900	U	
BENZO(A)PYRENE	550	J	PN
BENZO(B)FLUORANTHENE	1900	UJ	N
BENZO(G,H,I)PERYLENE	1900	UJ	N
BENZO(K)FLUORANTHENE	1900	UJ	N
BIS(2-CHLOROETHOXY)METHANE	1900	U	
BIS(2-CHLOROETHYL)ETHER	1900	U	
BIS(2-ETHYLHEXYL)PHTHALATE	1900	U	
BUTYL BENZYL PHTHALATE	1900	U	
CAPROLACTAM	1900	U	
CARBAZOLE	1900	U	
CHRYSENE	1900	U	
DIBENZO(A,H)ANTHRACENE	1900	UJ	N
DIBENZOFURAN	1900	U	
DIETHYL PHTHALATE	1900	U	
DIMETHYL PHTHALATE	1900	U	
DI-N-BUTYL PHTHALATE	1900	U	
DI-N-OCTYL PHTHALATE	1900	UJ	N
FLUORANTHENE	1900	U	
FLUORENE	1900	U	
HEXACHLOROBENZENE	1900	U	
HEXACHLOROBUTADIENE	1900	U	
HEXACHLOROCYCLOPENTADIENE	1900	U	
HEXACHLOROETHANE	1900	U	
INDENO(1,2,3-CD)PYRENE	1900	UJ	N
ISOPHORONE	1900	U	
NAPHTHALENE	1900	U	
NITROBENZENE	1900	U	
N-NITROSO-DI-N-PROPYLAMINE	1900	U	

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	1900	U	
PENTACHLOROPHENOL	4800	U	
PHENANTHRENE	1900	U	
PHENOL	1900	U	
PYRENE	1900	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	420	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	420	U	
2,4,5-TRICHLOROPHENOL	1100	U	
2,4,6-TRICHLOROPHENOL	420	U	
2,4-DICHLOROPHENOL	420	U	
2,4-DIMETHYLPHENOL	420	U	
2,4-DINITROPHENOL	1100	U	
2,4-DINITROTOLUENE	420	U	
2,6-DINITROTOLUENE	420	U	
2-CHLORONAPHTHALENE	420	U	
2-CHLOROPHENOL	420	U	
2-METHYLNAPHTHALENE	420	U	
2-METHYLPHENOL	420	U	
2-NITROANILINE	1100	U	
2-NITROPHENOL	420	U	
3,3'-DICHLOROBENZIDINE	420	U	
3-NITROANILINE	1100	U	
4,6-DINITRO-2-METHYLPHENOL	1100	U	
4-BROMOPHENYL PHENYL ETHER	420	U	
4-CHLORO-3-METHYLPHENOL	420	U	
4-CHLOROANILINE	420	UJ	C
4-CHLOROPHENYL PHENYL ETHER	420	U	
4-METHYLPHENOL	420	U	
4-NITROANILINE	1100	U	
4-NITROPHENOL	1100	U	
ACENAPHTHENE	420	U	
ACENAPHTHYLENE	420	U	
ACETOPHENONE	420	U	
ANTHRACENE	420	U	
ATRAZINE	420	U	

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	57	J	P
BENZO(A)ANTHRACENE	420	U	
BENZO(A)PYRENE	420	U	
BENZO(B)FLUORANTHENE	420	U	
BENZO(G,H,I)PERYLENE	420	U	
BENZO(K)FLUORANTHENE	420	U	
BIS(2-CHLOROETHOXY)METHANE	420	U	
BIS(2-CHLOROETHYL)ETHER	420	U	
BIS(2-ETHYLHEXYL)PHTHALATE	420	U	
BUTYL BENZYL PHTHALATE	420	U	
CAPROLACTAM	420	U	
CARBAZOLE	420	U	
CHRYSENE	420	U	
DIBENZO(A,H)ANTHRACENE	420	U	
DIBENZOFURAN	420	U	
DIETHYL PHTHALATE	420	U	
DIMETHYL PHTHALATE	420	U	
DI-N-BUTYL PHTHALATE	420	U	
DI-N-OCTYL PHTHALATE	420	U	
FLUORANTHENE	420	U	
FLUORENE	420	U	
HEXACHLOROBENZENE	420	U	
HEXACHLOROBUTADIENE	420	U	
HEXACHLOROCYCLOPENTADIENE	420	U	
HEXACHLOROETHANE	420	U	
INDENO(1,2,3-CD)PYRENE	420	U	
ISOPHORONE	420	U	
NAPHTHALENE	420	U	
NITROBENZENE	420	U	
N-NITROSO-DI-N-PROPYLAMINE	420	U	

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09A
qc_type	NM
units	UG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	420	U	
PENTACHLOROPHENOL	1100	U	
PHENANTHRENE	420	U	
PHENOL	420	U	
PYRENE	420	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11A
qc_type	NM
units	UG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	430	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	430	U	
2,4,5-TRICHLOROPHENOL	1100	U	
2,4,6-TRICHLOROPHENOL	430	U	
2,4-DICHLOROPHENOL	430	U	
2,4-DIMETHYLPHENOL	430	U	
2,4-DINITROPHENOL	1100	U	
2,4-DINITROTOLUENE	430	U	
2,6-DINITROTOLUENE	430	U	
2-CHLORONAPHTHALENE	430	U	
2-CHLOROPHENOL	430	U	
2-METHYLNAPHTHALENE	430	U	
2-METHYLPHENOL	430	U	
2-NITROANILINE	1100	U	
2-NITROPHENOL	430	U	
3,3'-DICHLOROBENZIDINE	430	U	
3-NITROANILINE	1100	U	
4,6-DINITRO-2-METHYLPHENOL	1100	U	
4-BROMOPHENYL PHENYL ETHER	430	U	
4-CHLORO-3-METHYLPHENOL	430	U	
4-CHLOROANILINE	430	U	
4-CHLOROPHENYL PHENYL ETHER	430	U	
4-METHYLPHENOL	430	U	
4-NITROANILINE	1100	U	
4-NITROPHENOL	1100	U	
ACENAPHTHENE	430	U	
ACENAPHTHYLENE	430	U	
ACETOPHENONE	430	U	
ANTHRACENE	430	U	
ATRAZINE	430	U	

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11A
qc_type	NM
units	UG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	430	U	
BENZO(A)ANTHRACENE	190	J	P
BENZO(A)PYRENE	200	J	P
BENZO(B)FLUORANTHENE	300	J	P
BENZO(G,H,I)PERYLENE	93	J	P
BENZO(K)FLUORANTHENE	150	J	P
BIS(2-CHLOROETHOXY)METHANE	430	U	
BIS(2-CHLOROETHYL)ETHER	430	U	
BIS(2-ETHYLHEXYL)PHTHALATE	430	U	
BUTYL BENZYL PHTHALATE	430	U	
CAPROLACTAM	430	U	
CARBAZOLE	430	U	
CHRYSENE	220	J	P
DIBENZO(A,H)ANTHRACENE	430	U	
DIBENZOFURAN	430	U	
DIETHYL PHTHALATE	430	U	
DIMETHYL PHTHALATE	430	U	
DI-N-BUTYL PHTHALATE	430	U	
DI-N-OCTYL PHTHALATE	430	U	
FLUORANTHENE	280	J	P
FLUORENE	430	U	
HEXACHLOROBENZENE	430	U	
HEXACHLOROBUTADIENE	430	U	
HEXACHLOROCYCLOPENTADIENE	430	U	
HEXACHLOROETHANE	430	U	
INDENO(1,2,3-CD)PYRENE	81	J	P
ISOPHORONE	430	U	
NAPHTHALENE	430	U	
NITROBENZENE	430	U	
N-NITROSO-DI-N-PROPYLAMINE	430	U	

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11A
qc_type	NM
units	UG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	430	U	
PENTACHLOROPHENOL	1100	U	
PHENANTHRENE	77	J	P
PHENOL	430	U	
PYRENE	280	J	P

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	370	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	370	U	
2,4,5-TRICHLOROPHENOL	920	U	
2,4,6-TRICHLOROPHENOL	370	U	
2,4-DICHLOROPHENOL	370	U	
2,4-DIMETHYLPHENOL	370	U	
2,4-DINITROPHENOL	920	U	
2,4-DINITROTOLUENE	370	U	
2,6-DINITROTOLUENE	370	U	
2-CHLORONAPHTHALENE	370	U	
2-CHLOROPHENOL	370	U	
2-METHYLNAPHTHALENE	370	U	
2-METHYLPHENOL	370	U	
2-NITROANILINE	920	U	
2-NITROPHENOL	370	U	
3,3'-DICHLOROBENZIDINE	370	U	
3-NITROANILINE	920	U	
4,6-DINITRO-2-METHYLPHENOL	920	U	
4-BROMOPHENYL PHENYL ETHER	370	U	
4-CHLORO-3-METHYLPHENOL	370	U	
4-CHLOROANILINE	370	U	
4-CHLOROPHENYL PHENYL ETHER	370	U	
4-METHYLPHENOL	370	U	
4-NITROANILINE	920	U	
4-NITROPHENOL	920	U	
ACENAPHTHENE	370	U	
ACENAPHTHYLENE	370	U	
ACETOPHENONE	370	U	
ANTHRACENE	370	U	
ATRAZINE	370	U	

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	370	U	
BENZO(A)ANTHRACENE	370	U	
BENZO(A)PYRENE	370	U	
BENZO(B)FLUORANTHENE	370	U	
BENZO(G,H,I)PERYLENE	370	U	
BENZO(K)FLUORANTHENE	370	U	
BIS(2-CHLOROETHOXY)METHANE	370	U	
BIS(2-CHLOROETHYL)ETHER	370	U	
BIS(2-ETHYLHEXYL)PHTHALATE	370	U	
BUTYL BENZYL PHTHALATE	370	U	
CAPROLACTAM	370	U	
CARBAZOLE	370	U	
CHRYSENE	370	U	
DIBENZO(A,H)ANTHRACENE	370	U	
DIBENZOFURAN	370	U	
DIETHYL PHTHALATE	370	U	
DIMETHYL PHTHALATE	370	U	
DI-N-BUTYL PHTHALATE	370	U	
DI-N-OCTYL PHTHALATE	370	U	
FLUORANTHENE	370	U	
FLUORENE	370	U	
HEXACHLOROBENZENE	370	U	
HEXACHLOROBUTADIENE	370	U	
HEXACHLOROCYCLOPENTADIENE	370	U	
HEXACHLOROETHANE	370	U	
INDENO(1,2,3-CD)PYRENE	370	U	
ISOPHORONE	370	U	
NAPHTHALENE	370	U	
NITROBENZENE	370	U	
N-NITROSO-DI-N-PROPYLAMINE	370	U	

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03A
qc_type	NM
units	UG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	370	U	
PENTACHLOROPHENOL	920	U	
PHENANTHRENE	370	U	
PHENOL	370	U	
PYRENE	370	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	390	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	390	U	
2,4,5-TRICHLOROPHENOL	970	U	
2,4,6-TRICHLOROPHENOL	390	U	
2,4-DICHLOROPHENOL	390	U	
2,4-DIMETHYLPHENOL	390	U	
2,4-DINITROPHENOL	970	U	
2,4-DINITROTOLUENE	390	U	
2,6-DINITROTOLUENE	390	U	
2-CHLORONAPHTHALENE	390	U	
2-CHLOROPHENOL	390	U	
2-METHYLNAPHTHALENE	390	U	
2-METHYLPHENOL	390	U	
2-NITROANILINE	970	U	
2-NITROPHENOL	390	U	
3,3'-DICHLOROBENZIDINE	390	U	
3-NITROANILINE	970	U	
4,6-DINITRO-2-METHYLPHENOL	970	U	
4-BROMOPHENYL PHENYL ETHER	390	U	
4-CHLORO-3-METHYLPHENOL	390	U	
4-CHLOROANILINE	390	U	
4-CHLOROPHENYL PHENYL ETHER	390	U	
4-METHYLPHENOL	390	U	
4-NITROANILINE	970	U	
4-NITROPHENOL	970	U	
ACENAPHTHENE	390	U	
ACENAPHTHYLENE	390	U	
ACETOPHENONE	390	U	
ANTHRACENE	390	U	
ATRAZINE	390	U	

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	390	U	
BENZO(A)ANTHRACENE	390	U	
BENZO(A)PYRENE	390	U	
BENZO(B)FLUORANTHENE	390	U	
BENZO(G,H,I)PERYLENE	390	U	
BENZO(K)FLUORANTHENE	390	U	
BIS(2-CHLOROETHOXY)METHANE	390	U	
BIS(2-CHLOROETHYL)ETHER	390	U	
BIS(2-ETHYLHEXYL)PHTHALATE	390	U	
BUTYL BENZYL PHTHALATE	390	U	
CAPROLACTAM	390	U	
CARBAZOLE	390	U	
CHRYSENE	390	U	
DIBENZO(A,H)ANTHRACENE	390	U	
DIBENZOFURAN	390	U	
DIETHYL PHTHALATE	390	U	
DIMETHYL PHTHALATE	390	U	
DI-N-BUTYL PHTHALATE	390	U	
DI-N-OCTYL PHTHALATE	390	U	
FLUORANTHENE	390	U	
FLUORENE	390	U	
HEXACHLOROBENZENE	390	U	
HEXACHLOROBUTADIENE	390	U	
HEXACHLOROCYCLOPENTADIENE	390	U	
HEXACHLOROETHANE	390	U	
INDENO(1,2,3-CD)PYRENE	390	U	
ISOPHORONE	390	U	
NAPHTHALENE	390	U	
NITROBENZENE	390	U	
N-NITROSO-DI-N-PROPYLAMINE	390	U	

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	390	U	
PENTACHLOROPHENOL	970	U	
PHENANTHRENE	390	U	
PHENOL	390	U	
PYRENE	390	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	900	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	900	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	900	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	900	U	
4,6-DINITRO-2-METHYLPHENOL	900	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	900	U	
4-NITROPHENOL	900	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	900	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	350	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	350	U	
2,4,5-TRICHLOROPHENOL	880	U	
2,4,6-TRICHLOROPHENOL	350	U	
2,4-DICHLOROPHENOL	350	U	
2,4-DIMETHYLPHENOL	350	U	
2,4-DINITROPHENOL	880	U	
2,4-DINITROTOLUENE	350	U	
2,6-DINITROTOLUENE	350	U	
2-CHLORONAPHTHALENE	350	U	
2-CHLOROPHENOL	350	U	
2-METHYLNAPHTHALENE	350	U	
2-METHYLPHENOL	350	U	
2-NITROANILINE	880	U	
2-NITROPHENOL	350	U	
3,3'-DICHLOROBENZIDINE	350	U	
3-NITROANILINE	880	U	
4,6-DINITRO-2-METHYLPHENOL	880	U	
4-BROMOPHENYL PHENYL ETHER	350	U	
4-CHLORO-3-METHYLPHENOL	350	U	
4-CHLOROANILINE	350	U	
4-CHLOROPHENYL PHENYL ETHER	350	U	
4-METHYLPHENOL	350	U	
4-NITROANILINE	880	U	
4-NITROPHENOL	880	U	
ACENAPHTHENE	350	U	
ACENAPHTHYLENE	350	U	
ACETOPHENONE	350	U	
ANTHRACENE	350	U	
ATRAZINE	350	U	

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	350	U	
BENZO(A)ANTHRACENE	350	U	
BENZO(A)PYRENE	350	U	
BENZO(B)FLUORANTHENE	350	U	
BENZO(G,H,I)PERYLENE	350	U	
BENZO(K)FLUORANTHENE	350	U	
BIS(2-CHLOROETHOXY)METHANE	350	U	
BIS(2-CHLOROETHYL)ETHER	350	U	
BIS(2-ETHYLHEXYL)PHTHALATE	350	U	
BUTYL BENZYL PHTHALATE	350	U	
CAPROLACTAM	350	U	
CARBAZOLE	350	U	
CHRYSENE	350	U	
DIBENZO(A,H)ANTHRACENE	350	U	
DIBENZOFURAN	350	U	
DIETHYL PHTHALATE	350	U	
DIMETHYL PHTHALATE	350	U	
DI-N-BUTYL PHTHALATE	350	U	
DI-N-OCTYL PHTHALATE	350	U	
FLUORANTHENE	350	U	
FLUORENE	350	U	
HEXACHLOROBENZENE	350	U	
HEXACHLOROBUTADIENE	350	U	
HEXACHLOROCYCLOPENTADIENE	350	U	
HEXACHLOROETHANE	350	U	
INDENO(1,2,3-CD)PYRENE	350	U	
ISOPHORONE	350	U	
NAPHTHALENE	350	U	
NITROBENZENE	350	U	
N-NITROSO-DI-N-PROPYLAMINE	350	U	

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	350	U	
PENTACHLOROPHENOL	880	U	
PHENANTHRENE	350	U	
PHENOL	350	U	
PYRENE	350	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-125-0203	nsample	WOD-SU-125-0203	nsample	WOD-SU-125-0203
samp_date	2/13/2003	samp_date	2/13/2003	samp_date	2/13/2003
lab_id	B0262-12A	lab_id	B0262-12A	lab_id	B0262-12A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	90	Pct_Solids	90	Pct_Solids	90
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	910	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	910	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	910	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	910	U	
4,6-DINITRO-2-METHYLPHENOL	910	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	910	U	
4-NITROPHENOL	910	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	56	J	P
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	39	J	P
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	43	J	P
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	910	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	47	J	P

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	910	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	910	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	910	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	910	U	
4,6-DINITRO-2-METHYLPHENOL	910	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	910	U	
4-NITROPHENOL	910	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	U	
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	360	U	
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	910	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-121
samp_date	2/13/2003
lab_id	B0262-02A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

nsample	WOD-SS-122
samp_date	2/13/2003
lab_id	B0262-04A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07A
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-124	nsample	WOD-SS-125	nsample	WOD-SU-121-1012
samp_date	2/13/2003	samp_date	2/13/2003	samp_date	2/13/2003
lab_id	B0262-09A	lab_id	B0262-11A	lab_id	B0262-03A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	77	Pct_Solids	76	Pct_Solids	89
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	42	U	
AROCLOR-1221	42	U	
AROCLOR-1232	42	U	
AROCLOR-1242	42	U	
AROCLOR-1248	42	U	
AROCLOR-1254	42	U	
AROCLOR-1260	42	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	43	U	
AROCLOR-1221	43	U	
AROCLOR-1232	43	U	
AROCLOR-1242	43	U	
AROCLOR-1248	43	U	
AROCLOR-1254	43	U	
AROCLOR-1260	43	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08A
qc_type	NM
units	UG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10A
qc_type	NM
units	UG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	35	U	
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-125-0203
samp_date	2/13/2003
lab_id	B0262-12A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	37	U	
AROCLOR-1254	37	U	
AROCLOR-1260	37	U	

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06A
qc_type	NM
units	UG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5115

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5115

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5115

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5116

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	9	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5116

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5116

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3983

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	36	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3983

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02C

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3983

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	7	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04C

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4008

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	150	
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	9	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	18	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04C

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4008

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	57	
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04C

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4008

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	35	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4032

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 14 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4032

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 14 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4032

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 14 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4012

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	110	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	3	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4012

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	34	
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4012

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.21	6	J
2.	66-25-1	HEXANAL	8.75	15	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09CRE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4029

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	32	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09CRE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4029

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	4	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-124RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09CRE

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4029

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 23 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4014

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 24 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	130	
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	14	
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4014

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 24 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	37	
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11C

Sample wt/vol: 5.9 (g/mL) G Lab File ID: V5E4014

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 24 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.22	7	J
2.	66-25-1	HEXANAL	8.76	31	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3984

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 11 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	9	JB
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3984

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 11 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3984

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 11 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E4009

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	19	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E4009

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05B

Sample wt/vol: 4.7 (g/mL) G Lab File ID: V5E4009

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3982

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	11	BJ
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	7	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	3	BJ
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3982

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08B

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E3982

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 8 Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.98	7	NJB
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4013

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	27	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4013

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	5	J
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10B

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4013

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10BRE

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E4030

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	11	J
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10BRE

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E4030

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	12	U
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1240203RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10BRE

Sample wt/vol: 4.5 (g/mL) G Lab File ID: V5E4030

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 6 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4055

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 10 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	3	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4055

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 10 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	1	J
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	1	J
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	1	J
95-63-6	1,2,4-Trimethylbenzene	1	J
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12B

Sample wt/vol: 5.4 (g/mL) G Lab File ID: V5E4055

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 10 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	14	NJ
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4027

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 9 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4027

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 9 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06B

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4027

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 9 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2298

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2298

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2298

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2469

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)Ether	370	U
95-57-8	2-Chlorophenol	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitroso-di-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
120-83-2	2,4-Dichlorophenol	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-Methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	370	U
208-96-8	Acenaphthylene	370	U
606-20-2	2,6-Dinitrotoluene	370	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2469

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl-phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	370	U
101-55-3	4-Bromophenyl-phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	370	U
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butylphthalate	370	U
206-44-0	Fluoranthene	370	U
129-00-0	Pyrene	370	U
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	370	U
218-01-9	Chrysene	370	U
117-81-7	bis(2-Ethylhexyl)phthalate	370	U
117-84-0	Di-n-octylphthalate	370	U
205-99-2	Benzo(b)fluoranthene	370	U
207-08-9	Benzo(k)fluoranthene	370	U
50-32-8	Benzo(a)pyrene	370	U
193-39-5	Indeno(1,2,3-cd)pyrene	370	U
53-70-3	Dibenzo(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	370	U
92-52-4	1,1'-Biphenyl	370	U
98-86-2	Acetophenone	370	U
1912-24-9	Atrazine	370	U
100-52-7	Benzaldehyde	370	U
105-60-2	Caprolactum	370	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2469

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 11 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.49	300	J
2.		UNKNOWN	12.53	650	J
3.	57-10-3	HEXADECANOIC ACID	17.52	420	NJ
4.	57-11-4	OCTADECANOIC ACID	19.12	160	NJ
5.		UNKNOWN	22.43	1000	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2566

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)Ether	390	U
95-57-8	2-Chlorophenol	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitroso-di-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
120-83-2	2,4-Dichlorophenol	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-Methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	970	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	390	U
208-96-8	Acenaphthylene	390	U
606-20-2	2,6-Dinitrotoluene	390	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2566

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl-phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	390	U
101-55-3	4-Bromophenyl-phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	390	U
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butylphthalate	390	U
206-44-0	Fluoranthene	390	U
129-00-0	Pyrene	390	U
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	390	U
218-01-9	Chrysene	390	U
117-81-7	bis(2-Ethylhexyl)phthalate	390	U
117-84-0	Di-n-octylphthalate	390	U
205-99-2	Benzo(b)fluoranthene	390	U
207-08-9	Benzo(k)fluoranthene	390	U
50-32-8	Benzo(a)pyrene	390	U
193-39-5	Indeno(1,2,3-cd)pyrene	390	U
53-70-3	Dibenzo(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	390	U
92-52-4	1,1'-Biphenyl	390	U
98-86-2	Acetophenone	390	U
1912-24-9	Atrazine	390	U
100-52-7	Benzaldehyde	390	U
105-60-2	Caprolactum	390	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1221012

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2566

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	30.79	1600	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2471

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2471

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2471

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2567

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)Ether	350	U
95-57-8	2-Chlorophenol	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitroso-di-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
120-83-2	2,4-Dichlorophenol	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-Methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	880	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	880	U
131-11-3	Dimethylphthalate	350	U
208-96-8	Acenaphthylene	350	U
606-20-2	2,6-Dinitrotoluene	350	U
99-09-2	3-Nitroaniline	880	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	880	U
100-02-7	4-Nitrophenol	880	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2567

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl-phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	880	U
534-52-1	4,6-Dinitro-2-methylphenol	880	U
86-30-6	N-Nitrosodiphenylamine (1)	350	U
101-55-3	4-Bromophenyl-phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	880	U
85-01-8	Phenanthrene	350	U
120-12-7	Anthracene	350	U
86-74-8	Carbazole	350	U
84-74-2	Di-n-butylphthalate	350	U
206-44-0	Fluoranthene	350	U
129-00-0	Pyrene	350	U
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	350	U
218-01-9	Chrysene	350	U
117-81-7	bis(2-Ethylhexyl)phthalate	350	U
117-84-0	Di-n-octylphthalate	350	U
205-99-2	Benzo(b)fluoranthene	350	U
207-08-9	Benzo(k)fluoranthene	350	U
50-32-8	Benzo(a)pyrene	350	U
193-39-5	Indeno(1,2,3-cd)pyrene	350	U
53-70-3	Dibenzo(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	350	U
92-52-4	1,1'-Biphenyl	350	U
98-86-2	Acetophenone	350	U
1912-24-9	Atrazine	350	U
100-52-7	Benzaldehyde	350	U
105-60-2	Caprolactum	350	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SV1240203

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2567

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 6 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ~~27.0~~ SEC 3/20/03

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2453

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2453

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	43	J
129-00-0	Pyrene	47	J
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	39	J
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	56	J
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2453

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	72-55-9	P,P'-DDE	19.46	290	NJ
2.		UNKNOWN	23.37	190	J
3.		UNKNOWN	27.03	310	J
4.		UNKNOWN	27.11	360	J
5.					
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2470

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	910	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	910	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	910	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	910	U
100-02-7	4-Nitrophenol	910	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2470

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	910	U
534-52-1	4,6-Dinitro-2-methylphenol	910	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	910	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2470

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 9 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.01	250	J
2.		UNKNOWN	15.16	150	J
3.		UNKNOWN	19.30	300	J
4.	123-95-5	OCTADECANOIC ACID, BUTYL EST	20.75	280	NJ
5.		UNKNOWN	23.31	200	J
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2577

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	900	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	900	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	900	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	900	U
100-02-7	4-Nitrophenol	900	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2577

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	900	U
534-52-1	4,6-Dinitro-2-methylphenol	900	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	900	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	360	U
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2577

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 8 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 8

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	872-05-9	1-DECENE	12.87	320	NJ
2.		UNKNOWN	21.94	200	J
3.		UNKNOWN	22.03	350	J
4.		UNKNOWN	23.49	970	J
5.		UNKNOWN	25.41	190	J
6.		UNKNOWN	26.47	560	J
7.		UNKNOWN	27.25	150	J
8.		UNKNOWN	30.77	1200	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2579

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	970	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	970	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	970	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	970	U
100-02-7	4-Nitrophenol	970	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2579

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	970	U
534-52-1	4,6-Dinitro-2-methylphenol	970	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	970	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	380	U
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	45	J
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	380	U
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2579

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	23.19	260	J
2.		UNKNOWN	23.85	360	J
3.	1454-85-9	1-HEPTADECANOL	23.90	330	NJ
4.	57-88-5	CHOLESTEROL	25.50	380	NJ
5.		UNKNOWN	26.36	980	J
6.	14021-23-9	D-FRIEDOOLEAN-14-ENE, 3-METH	26.49	890	NJ
7.	83-48-7	STIGMASTEROL	26.60	1100	NJ
8.	83-47-6	.GAMMA.-SITOSTEROL	27.19	1400	NJ
9.		UNKNOWN	27.60	700	J
10.		UNKNOWN	27.73	570	J
11.		UNKNOWN	27.88	670	J
12.		UNKNOWN	28.27	840	J
13.		UNKNOWN	28.41	710	J
14.	1058-61-3	STIGMAST-4-EN-3-ONE	28.63	520	NJ
15.		UNKNOWN	29.17	410	J
16.		UNKNOWN	30.01	260	J
17.		UNKNOWN	30.40	780	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2454

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1900	U
111-44-4	bis(2-Chloroethyl)Ether	1900	U
95-57-8	2-Chlorophenol	1900	U
95-48-7	2-Methylphenol	1900	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1900	U
106-44-5	4-Methylphenol	1900	U
621-64-7	N-Nitroso-di-n-propylamine	1900	U
67-72-1	Hexachloroethane	1900	U
98-95-3	Nitrobenzene	1900	U
78-59-1	Isophorone	1900	U
88-75-5	2-Nitrophenol	1900	U
105-67-9	2,4-Dimethylphenol	1900	U
120-83-2	2,4-Dichlorophenol	1900	U
91-20-3	Naphthalene	1900	U
106-47-8	4-Chloroaniline	1900	U
111-91-1	bis(2-Chloroethoxy)methane	1900	U
87-68-3	Hexachlorobutadiene	1900	U
59-50-7	4-Chloro-3-Methylphenol	1900	U
91-57-6	2-Methylnaphthalene	1900	U
77-47-4	Hexachlorocyclopentadiene	1900	U
88-06-2	2,4,6-Trichlorophenol	1900	U
95-95-4	2,4,5-Trichlorophenol	4800	U
91-58-7	2-Chloronaphthalene	1900	U
88-74-4	2-Nitroaniline	4800	U
131-11-3	Dimethylphthalate	1900	U
208-96-8	Acenaphthylene	1900	U
606-20-2	2,6-Dinitrotoluene	1900	U
99-09-2	3-Nitroaniline	4800	U
83-32-9	Acenaphthene	1900	U
51-28-5	2,4-Dinitrophenol	4800	U
100-02-7	4-Nitrophenol	4800	U
132-64-9	Dibenzofuran	1900	U
121-14-2	2,4-Dinitrotoluene	1900	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2454

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1900	U
7005-72-3	4-Chlorophenyl-phenylether	1900	U
86-73-7	Fluorene	1900	U
100-01-6	4-Nitroaniline	4800	U
534-52-1	4,6-Dinitro-2-methylphenol	4800	U
86-30-6	N-Nitrosodiphenylamine (1)	1900	U
101-55-3	4-Bromophenyl-phenylether	1900	U
118-74-1	Hexachlorobenzene	1900	U
87-86-5	Pentachlorophenol	4800	U
85-01-8	Phenanthrene	1900	U
120-12-7	Anthracene	1900	U
86-74-8	Carbazole	1900	U
84-74-2	Di-n-butylphthalate	1900	U
206-44-0	Fluoranthene	1900	U
129-00-0	Pyrene	1900	U
85-68-7	Butylbenzylphthalate	1900	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)anthracene	1900	U
218-01-9	Chrysene	1900	U
117-81-7	bis(2-Ethylhexyl)phthalate	1900	U
117-84-0	Di-n-octylphthalate	1900	U
205-99-2	Benzo(b)fluoranthene	1900	U
207-08-9	Benzo(k)fluoranthene	1900	U
50-32-8	Benzo(a)pyrene	550	J
193-39-5	Indeno(1,2,3-cd)pyrene	1900	U
53-70-3	Dibenzo(a,h)anthracene	1900	U
191-24-2	Benzo(g,h,i)perylene	1900	U
92-52-4	1,1'-Biphenyl	1900	U
98-86-2	Acetophenone	1900	U
1912-24-9	Atrazine	1900	U
100-52-7	Benzaldehyde	1900	U
105-60-2	Caprolactum	1900	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2454

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2578

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
120-83-2	2,4-Dichlorophenol	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2578

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U
92-52-4	1,1'-Biphenyl	420	U
98-86-2	Acetophenone	420	U
1912-24-9	Atrazine	420	U
100-52-7	Benzaldehyde	57	J
105-60-2	Caprolactum	420	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2578

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 23 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	6971-40-0	17-PENTATRIACONTENE	21.38	180	NJ
2.	6971-40-0	17-PENTATRIACONTENE	22.69	310	NJ
3.		UNKNOWN	23.18	260	J
4.		UNKNOWN	23.50	330	J
5.	6624-79-9	1-DOTRIACONTANOL	23.90	600	NJ
6.	2765-11-9	PENTADECANAL-	24.71	290	NJ
7.	74685-30-6	5-EICOSENE, (E)-	25.17	500	NJ
8.		UNKNOWN	25.38	370	J
9.		UNKNOWN	25.50	380	J
10.	4651-51-8	ERGOST-5-EN-3-OL, (3.BETA.)-	26.37	420	NJ
11.	83-48-7	STIGMASTEROL	26.60	750	NJ
12.	646-31-1	TETRACOSANE	26.71	1400	NJ
13.	83-47-6	.GAMMA.-SITOSTEROL	27.19	2800	NJ
14.		UNKNOWN	27.72	440	J
15.	1058-61-3	STIGMAST-4-EN-3-ONE	28.63	620	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2452

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 24 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
120-83-2	2,4-Dichlorophenol	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2452

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 24 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	77	J
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	280	J
129-00-0	Pyrene	280	J
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	190	J
218-01-9	Chrysene	220	J
117-81-7	bis(2-Ethylhexyl)phthalate	430	U
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	300	J
207-08-9	Benzo(k)fluoranthene	150	J
50-32-8	Benzo(a)pyrene	200	J
193-39-5	Indeno(1,2,3-cd)pyrene	81	J
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	93	J
92-52-4	1,1'-Biphenyl	430	U
98-86-2	Acetophenone	430	U
1912-24-9	Atrazine	430	U
100-52-7	Benzaldehyde	430	U
105-60-2	Caprolactum	430	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2452

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 24 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.37	220	NJ
2.	192-97-2	BENZO[E]PYRENE	24.16	190	NJ
3.		UNKNOWN	26.95	180	J
4.		UNKNOWN	27.57	480	J
5.		UNKNOWN	28.77	270	J
6.		UNKNOWN	29.14	180	J
7.		UNKNOWN	29.79	580	J
8.		UNKNOWN	30.36	1100	J
9.		UNKNOWN	30.61	440	J
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-021303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: B0262-13D

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9449F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1211012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-03A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9590F

% Moisture: 11 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1221012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-05A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9592F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9595F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1240203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-10A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9605F

% Moisture: 6 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	35	U
11104-28-2	Aroclor-1221	35	U
11141-16-5	Aroclor-1232	35	U
53469-21-9	Aroclor-1242	35	U
12672-29-6	Aroclor-1248	35	U
11097-69-1	Aroclor-1254	35	U
11096-82-5	Aroclor-1260	35	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1250203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-12A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9607F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	37	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SVDUP07

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-06A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9593F

% Moisture: 9 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-121

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E1D9589F

% Moisture: 8 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9591F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E1D9594F

% Moisture: 14 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-09A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9604F

% Moisture: 23 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-11A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1D9606F

% Moisture: 24 decanted: (Y/N) N Date Received: 02/14/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	43	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-121 **Collection Date:** 02/13/03 8:40
Lab ID: B0262-02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	4.9		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Project: Wallops Island
Client Sample ID: WOD-SS-122
Collection Date: 02/13/03 9:55
Lab ID: B0262-04

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	5.8		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quanititation limits
- B - Analyte detected in the associated Method Blank
- DF - Dilution Factor
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-123 **Collection Date:** 02/13/03 11:00
Lab ID: B0262-07

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.0		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanitiation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-124 **Collection Date:** 02/13/03 12:40
Lab ID: B0262-09

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.5		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-125 **Collection Date:** 02/13/03 13:10
Lab ID: B0262-11

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.2		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quanititation limits
- B - Analyte detected in the associated Method Blank
- DF - Dilution Factor
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: RB-021303
Lab ID: B0262-13

Project: Wallops Island
Collection Date: 02/13/03 15:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C

SUPPORT DOCUMENTATION

B0262

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS1	0217LCSS	LCS	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
%	LCSW1	0217LCSW	LCS	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
MG/KG	PBS1	0217PBS	M_BLANK	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	PBW1	0217PBW	M_BLANK	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	RB-021303	B0262-13C	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-121	B0262-02A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-122	B0262-04A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-123	B0262-07A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-124	B0262-09A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-125	B0262-11A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-123-1012DUP	B0262-08ADUP	DUPLICATE	B0262	HG	02/14/03	02/17/03	02/18/03	3	1	4
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
%	LCSS	0215LCSS	LCS	B0262	M	/ /	02/15/03	02/18/03	0	3	0
%	LCSW	0215LCSW	LCS	B0262	M	/ /	02/15/03	02/18/03	0	3	0
MG/KG	PBS	0215PBS	M_BLANK	B0262	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	PBW	0215PBW	M_BLANK	B0262	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	RB-021303	B0262-13C	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-121	B0262-02A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	WOD-SS-122	B0262-04A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-123	B0262-07A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-124	B0262-09A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-125	B0262-11A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-123-1012DUP	B0262-08ADUP	DUPLICATE	B0262	M	02/14/03	02/15/03	02/18/03	1	3	4
UG/L	WOD-SV-123-1012L	B0262-08AL	NORMAL	B0262	M	02/14/03	02/18/03	02/18/03	4	0	4
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
%	RB-021303	B0262-13D	NORMAL	B0262	OS	02/13/03	02/18/03	03/13/03	5	23	28
%	SBLK2S	MB-5821	M_BLANK	B0262	OS	/ /	02/27/03	03/14/03	0	15	0
%	SBLK2SLCS	LCS-5821	LCS	B0262	OS	/ /	02/27/03	03/14/03	0	15	0
UG/L	SBLK3P	MB-5678	M_BLANK	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCS	LCS-5678	LCS	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCSD	LCSD-5678	LCSD	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	WOD-SS-121	B0262-02A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-122	B0262-04A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-123	B0262-07A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SS-124	B0262-09A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-125	B0262-11A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	OS	02/13/03	02/27/03	03/11/03	14	12	26
%	WOD-SV-123-1012MSD	B0262-08AMSD	MSD	B0262	OS	02/13/03	02/27/03	03/11/03	14	12	26
%	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	RB-021303	B0262-13A	NORMAL	B0262	OV	02/13/03	02/24/03	02/24/03	11	0	11
UG/L	TB-021302	B0262-01A	NORMAL	B0262	OV	02/13/03	02/24/03	02/24/03	11	0	11
%	VBLK5A	V5B0221A	M_BLANK	B0262	OV	/ /	02/21/03	02/21/03	0	0	0
%	VBLK5ALCS	V5L0221A	LCS	B0262	OV	/ /	02/21/03	02/21/03	0	0	0
%	VBLK5B	V5B0223A	M_BLANK	B0262	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK5BLCS	V5L0223A	LCS	B0262	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0262	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0262	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5Z	V5B0219A	M_BLANK	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCS	V5L0219A	LCS	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCSD	V5L0219B	LCSD	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
UG/L	VBLK6K	V6B0224A	M_BLANK	B0262	OV	/ /	02/24/03	02/24/03	0	0	0
%	VBLK6KLCS	V6L0224A	LCS	B0262	OV	/ /	02/24/03	02/24/03	0	0	0
%	WOD-SS-121	B0262-02C	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SS-122	B0262-04C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SS-123	B0262-07B	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SS-124	B0262-09C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SS-124RE	B0262-09CRE	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SS-125	B0262-11C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-121-1012	B0262-03B	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-122-1012	B0262-05B	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-123-1012	B0262-08B	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-123-1012MS	B0262-08BMS	MS	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-123-1012MSD	B0262-08BMSD	MSD	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-124-0203	B0262-10B	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-124-0203RE	B0262-10BRE	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SV-125-0203	B0262-12B	NORMAL	B0262	OV	02/13/03	02/23/03	02/23/03	10	0	10
%	WOD-SV-DUP07	B0262-06B	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	BBLK1F	MB-5820	M_BLANK	B0262	PCB	/ /	02/27/03	03/03/03	0	4	0
%	BBLK1FLCS	LCS-5820	LCS	B0262	PCB	/ /	02/27/03	03/03/03	0	4	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	RB-021303	B0262-13D	NORMAL	B0262	PCB	02/13/03	02/18/03	02/23/03	5	5	10
%	WOD-SS-121	B0262-02A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-122	B0262-04A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-123	B0262-07A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-124	B0262-09A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SS-125	B0262-11A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	PCB	02/14/03	02/27/03	03/03/03	13	4	17
%	WOD-SV-123-1012MSD	B0262-08AMSD	MSD	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
S.U.	WOD-SS-121	B0262-02A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-122	B0262-04A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
S.U.	WOD-SS-123	B0262-07A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-124	B0262-09A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-125	B0262-11A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
%	LCS-6168	LCS-6168	LCS	B0262	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0262	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021303	B0262-13B	NORMAL	B0262	TOC	02/13/03	02/28/03	02/28/03	15	0	15

FIELD DUPLICATE PRECISION

ANALYTE	WOD-SU-122-1012	WOD-SU-DUP07	RPD	DIFFERENCE
Methylene chloride	6	2	100.00	4

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0262

Mitkem Project ID: B0262

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and eleven soil samples that were collected on February 13, 2003, and received at Mitkem on February 14, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples WOD-SS-124, SV1240203, SV1231012MS and SV1231012MSD. Matrix interference on surrogate confirmed with re-analysis of samples WOD-SS-124 and SV1240203 with similar findings.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of stryene.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of phenol-d5 and 2-fluorophenol in method blank, SBLK2S, and lab control sample S2SLCS.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of phenol, N-nitroso-di-n-propylamine and isophorone in S2SLCS and high recovery of 4-nitroaniline in S3PLCSD. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: due to sample matrix, sample WOD-SS-123 had a final volume of 5mL rather than the normal 1mL final volume. This is equivalent to 5x dilution. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1231013. Replicate RPDs were within the QC limits with the exception of manganese. Manganese is flagged with an "*" on Form 1's.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #:
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

	SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40ml VOA Vial HCl; TAL VOC; 8 oz Amber Glass Widemouth Soil/Sediment Sample; TAL VOC; 40z Amber Glass Widemouth; TAL SVOC PCB; 40z Amber Glass Widemouth; TAL Metals pH; 40z Amber Glass Widemouth; TAL %Moisture; 8oz Amber Glass Widemouth; Grain Size; 40z Amber Glass Widemouth; TAL Metals %Moisture	COMMENTS
	TB-021302	2/13/03 0710		X	X			01	2	2	Trip Blank
	WOD-SS-121	2/13/03 0840		X		X		02	7	3 1 1 1 1	
	WOD-SU-121-1012	2/13/03 0940		X		X		03	5	3 1 1	
X	WOD-SS-122	2/13/03 0955		X		X		04	7	3 1 1 1 1	
	WOD-SU-122-1012	2/13/03 1040		X		X		05	5	3 1 1	
	WOD-SU-Dup 07	2/13/03 1055		X		X		06	5	3 1 1	
X	WOD-SS-123	2/13/03 1100		X		X		07	7	3 1 1 1 1	
	WOD-SU-123-1012	2/13/03 1140		X		X		08	15	9 3 3	DO MS/MSD
X	WOD-SS-124	2/13/03 1640		X		X		09	7	3 1 1 1 1	
	WOD-SU-124-0203	2/13/03 1300		X		X		10	5	3 1 1	
X	WOD-SS-125	2/13/03 1310		X		X		11	7	3 1 1 1 1	
	WOD-SU-125-0203	2/13/03 1335	* COMP 2/14/03	X		X		12	5	3 1 1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
0015		2/13/03 1700		2/14/03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Blank water was provided by the Lab. Samples shipped via Federal Express Airbill No 8286 8470 8054

COOLER TEMP: 6°

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #:
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	LTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl	Tcl VOC 1 liter Amber Glass	Tcl SVOC 1 liter Amber Glass	Tcl PCB 40 ml VOA Vial HCl	TAL 500 ml Poly HNO3	COMMENTS
RB-021303	2/13/02/1530		X	X			B	9	2	2	2	2	1	Rinsate Blank
	/													
	/													
	/													
	/													
	/													
	/													
	/													
	/													
	/													
	/													
	/													

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
0016	Charles Meyer	2/13/03/1700	Letha Reed	2-14-03/0900	Blank water was provided by the lab	2°
		/		/	Samples were shipped via Federal Express Airbill NO 8286 8470 8054	
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

ALKANE NARRATIVE REPORT
Report date : 03/20/2003
SDG: B0262

Client Sample ID: WOD-SS-125 Lab Sample ID: B0262-11A File ID: S2D2452

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	24.04	500	J
Straight-chained Alkane	25.32	910	J
Branched Alkane	27.04	310	J

Client Sample ID: SV1250203 Lab Sample ID: B0262-12A File ID: S2D2453

Compound	RT	Est. Conc.	Q
Branched Alkane	24.04	190	J
Straight-chained Alkane	25.33	400	J

Client Sample ID: SV1221012 Lab Sample ID: B0262-05A File ID: S2D2566

Compound	RT	Est. Conc.	Q
Cyclic Alkane	15.03	170	J

Client Sample ID: SV1240203 Lab Sample ID: B0262-10A File ID: S2D2567

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	25.07	290	J

Client Sample ID: WOD-SS-121 Lab Sample ID: B0262-02A File ID: S2D2577

Compound	RT	Est. Conc.	Q
Cyclic Alkane	15.03	540	J

Client Sample ID: WOD-SS-124 Lab Sample ID: B0262-09A File ID: S2D2578

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.86	1700	J
Straight-chained Alkane	24.42	440	J
Straight-chained Alkane	25.08	3800	J
Straight-chained Alkane	25.82	580	J

Client Sample ID: WOD-SS-122 Lab Sample ID: B0262-04A File ID: S2D2579

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	22.66	260	J
Branched Alkane	25.08	630	J

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0262

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0262-01A	TB-021302	
B0262-02A	WOD-SS-121	
B0262-02B	WOD-SS-121	
B0262-02C	WOD-SS-121	
B0262-03A	SV1211012	WOD-SV-121-1012
B0262-03B	SV1211012	WOD-SV-121-1012
B0262-04A	WOD-SS-122	
B0262-04B	WOD-SS-122	
B0262-04C	WOD-SS-122	
B0262-05A	SV1221012	WOD-SV-122-1012
B0262-05B	SV1221012	WOD-SV-122-1012
B0262-06A	SVDUP07	WOD-SV-DUP07
B0262-06B	SVDUP07	WOD-SV-DUP07
B0262-07A	WOD-SS-123	
B0262-07B	WOD-SS-123	
B0262-07C	WOD-SS-123	
B0262-08A	SV1231012	WOD-SV-123-1012
B0262-08B	SV1231012	WOD-SV-123-1012
B0262-09A	WOD-SS-124	
B0262-09B	WOD-SS-124	
B0262-09C	WOD-SS-124	
B0262-10A	SV1240203	WOD-SV-124-0203
B0262-10B	SV1240203	WOD-SV-124-0203
B0262-11A	WOD-SS-125	
B0262-11B	WOD-SS-125	
B0262-11C	WOD-SS-125	
B0262-12A	SV1250203	WOD-SV-125-0203
B0262-12B	SV1250203	WOD-SV-125-0203
B0262-13A	RB-021303	
B0262-13B	RB-021303	
B0262-13C	RB-021303	
B0262-13D	RB-021303	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5Y	97	100	100	91	0
02	V5YLCS	96	103	101	101	0
03	SV1231012MS	114	132*	99	108	1
04	SV1231012MSD	110	128*	100	107	1
05	SV1231012	109	126	100	102	0
06	WOD-SS-121	104	117	105	92	0
07	SV1211012	103	117	101	96	0
08	VBLK5Z	96	101	101	92	0
09	V5ZLCS	99	104	103	100	0
10	V5ZLCSD	97	100	101	98	0
11	WOD-SS-122	111	124	117	87	0
12	SV1221012	108	121	106	98	0
13	WOD-SS-124	117	138*	113	85	1
14	SV1240203	118	145*	107	97	1
15	WOD-SS-125	106	116	112	79	0
16	VBLK5A	95	101	100	92	0
17	V5ALCS	96	101	99	96	0
18	SVDUP07	104	117	102	100	0
19	WOD-SS-124RE	112	132*	112	83	1
20	SV1240203RE	109	127*	102	98	1
21	WOD-SS-123	105	123	112	79	0
22	VBLK5B	96	100	103	88	0
23	V5BLCS	97	100	102	99	0
24	SV1250203	106	119	106	87	0
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	62	0.0	61	98	58-131
Chloromethane	62	0.0	69	111	63-120
Vinyl Chloride	62	0.0	71	114	61-134
Bromomethane	62	0.0	70	113	10-215
Chloroethane	62	0.0	74	119	55-146
Trichlorofluoromethane	62	0.0	70	113	63-126
1,1-Dichloroethene	62	0.0	70	113	67-127
Acetone	62	11	92	131	0-154
Carbon Disulfide	62	0.0	71	114	63-126
Methylene Chloride	62	7	75	110	62-128
trans-1,2-Dichloroethen	62	0.0	68	110	76-120
Methyl tert-butyl ether	62	0.0	90	145*	52-130
1,1-Dichloroethane	62	0.0	70	113	74-118
2-Butanone	62	0.0	110	177*	24-154
cis-1,2-Dichloroethene	62	0.0	71	114	83-115
Chloroform	62	0.0	70	113	77-120
1,1,1-Trichloroethane	62	0.0	66	106	72-126
Carbon Tetrachloride	62	0.0	67	108	69-135
1,2-Dichloroethane	62	0.0	81	131*	65-126
Benzene	62	0.0	70	113	78-121
Trichloroethene	62	0.0	66	106	75-125
1,2-Dichloropropane	62	0.0	75	121*	78-117
Bromodichloromethane	62	0.0	74	119*	75-118
cis-1,3-Dichloropropene	62	0.0	72	116	78-120
4-Methyl-2-pentanone	62	0.0	120	194*	45-141
Toluene	62	0.0	69	111	80-126
trans-1,3-Dichloroprope	62	0.0	76	122	73-123
1,1,2-Trichloroethane	62	0.0	84	135*	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	62	0.0	59	95	65-134
2-Hexanone	62	3	120	189*	37-136
Dibromochloromethane	62	0.0	78	126*	76-115
1,2-Dibromoethane	62	0.0	85	137*	72-117
Chlorobenzene	62	0.0	66	106	78-117
Ethylbenzene	62	0.0	65	105	79-129
Xylene (Total)	180	0.0	200	111	83-125
Styrene	62	0.0	58	94	83-122
Bromoform	62	0.0	87	140*	67-126
Isopropylbenzene	62	0.0	64	103	80-135
1,1,2,2-Tetrachloroetha	62	0.0	96	155*	70-117
1,3,5-Trimethylbenzene	62	0.0	64	103	72-133
1,2,4-Trimethylbenzene	62	0.0	66	106	73-126
1,3-Dichlorobenzene	62	0.0	66	106	75-115
1,4-Dichlorobenzene	62	0.0	67	108	72-110
1,2-Dichlorobenzene	62	0.0	72	116*	78-113
1,2-Dibromo-3-chloropro	62	0.0	120	194*	52-128
1,2,4-Trichlorobenzene	62	0.0	71	114	49-126
1,1,2-Trichlo-1,2,2-tri	62	0.0	68	110	70-130
Methyl Acetate	62	0.0	50	81	70-130
Cyclohexane	62	0.0	69	111	70-130
Methylcyclohexane	62	0.0	67	108	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	57	48	84	15	40	58-131
Chloromethane	57	55	96	14	40	63-120
Vinyl Chloride	57	57	100	13	40	61-134
Bromomethane	57	58	102	10	40	10-215
Chloroethane	57	60	105	12	40	55-146
Trichlorofluoromethane	57	57	100	12	40	63-126
1,1-Dichloroethene	57	57	100	12	40	67-127
Acetone	57	72	107	20	40	0-154
Carbon Disulfide	57	60	105	8	40	63-126
Methylene Chloride	57	58	89	21	40	62-128
trans-1,2-Dichloroethen	57	56	98	12	40	76-120
Methyl tert-butyl ether	57	72	126	14	40	52-130
1,1-Dichloroethane	57	57	100	12	40	74-118
2-Butanone	57	85	149	17	40	14-154
cis-1,2-Dichloroethene	57	59	104	9	40	83-115
Chloroform	57	58	102	10	40	77-120
1,1,1-Trichloroethane	57	53	93	13	40	72-126
Carbon Tetrachloride	57	56	98	10	40	69-135
1,2-Dichloroethane	57	66	116	12	40	65-126
Benzene	57	57	100	12	40	78-121
Trichloroethene	57	55	96	10	40	75-125
1,2-Dichloropropane	57	61	107	12	40	78-117
Bromodichloromethane	57	61	107	11	40	75-118
cis-1,3-Dichloropropene	57	59	104	11	40	78-120
4-Methyl-2-pentanone	57	93	163*	17	40	45-141
Toluene	57	57	100	10	40	80-126
trans-1,3-Dichloroprope	57	62	109	11	40	73-123
1,1,2-Trichloroethane	57	67	118	13	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	57	50	88	8	40	65-134
2-Hexanone	57	99	168*	12	40	37-136
Dibromochloromethane	57	66	116*	8	40	76-115
1,2-Dibromoethane	57	70	123*	11	40	72-117
Chlorobenzene	57	57	100	6	40	78-117
Ethylbenzene	57	56	98	7	40	79-129
Xylene (Total)	170	170	100	10	40	83-125
Styrene	57	35	61*	42*	40	83-122
Bromoform	57	70	123	13	40	67-126
Isopropylbenzene	57	54	95	8	40	80-135
1,1,2,2-Tetrachloroetha	57	74	130*	18	40	70-117
1,3,5-Trimethylbenzene	57	54	95	8	40	72-133
1,2,4-Trimethylbenzene	57	53	93	13	40	73-126
1,3-Dichlorobenzene	57	56	98	8	40	75-115
1,4-Dichlorobenzene	57	56	98	10	40	72-110
1,2-Dichlorobenzene	57	59	104	11	40	78-113
1,2-Dibromo-3-chloropro	57	83	146*	28	40	52-128
1,2,4-Trichlorobenzene	57	56	98	15	40	49-126
1,1,2-Trichlo-1,2,2-tri	57	57	100	10	40	70-130
Methyl Acetate	57	37	65*	22	40	70-130
Cyclohexane	57	56	98	12	40	70-130
Methylcyclohexane	57	55	96	12	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 50 outside limits
Spike Recovery: 22 out of 100 outside limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V6KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		61	122	48-135
Chloromethane	50		58	116	60-118
Vinyl Chloride	50		56	112	65-113
Bromomethane	50		55	110	73-122
Chloroethane	50		57	114	72-118
Trichlorofluoromethane	50		54	108	68-129
1,1-Dichloroethene	50		53	106	67-121
Acetone	50		45	90	38-161
Carbon Disulfide	50		56	112	53-137
Methylene Chloride	50		52	104	59-132
trans-1,2-Dichloroethen	50		53	106	71-124
Methyl tert-butyl ether	50		47	94	75-123
1,1-Dichloroethane	50		55	110	83-116
2-Butanone	50		48	96	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		55	110	89-118
1,1,1-Trichloroethane	50		57	114	81-122
Carbon Tetrachloride	50		54	108	79-125
1,2-Dichloroethane	50		56	112	83-123
Benzene	50		56	112	81-120
Trichloroethene	50		52	104	77-121
1,2-Dichloropropane	50		55	110	81-116
Bromodichloromethane	50		54	108	90-114
cis-1,3-Dichloropropene	50		51	102	78-119
4-Methyl-2-pentanone	50		49	98	57-138
Toluene	50		55	110	81-121
trans-1,3-Dichloroprope	50		52	104	85-118
1,1,2-Trichloroethane	50		54	108	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V6KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		52	104	73-121
2-Hexanone	50		46	92	53-145
Dibromochloromethane	50		52	104	80-124
1,2-Dibromoethane	50		50	100	80-124
Chlorobenzene	50		52	104	82-118
Ethylbenzene	50		52	104	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		54	108	77-128
Bromoform	50		50	100	77-130
Isopropylbenzene	50		54	108	58-148
1,1,2,2-Tetrachloroetha	50		51	102	76-125
1,3,5-Trimethylbenzene	50		52	104	76-116
1,2,4-Trimethylbenzene	50		53	106	77-117
1,3-Dichlorobenzene	50		51	102	80-116
1,4-Dichlorobenzene	50		51	102	80-114
1,2-Dichlorobenzene	50		52	104	81-116
1,2-Dibromo-3-chloropro	50		42	84	71-126
1,2,4-Trichlorobenzene	50		44	88	67-114
1,1,2-Trichlo-1,2,2-tri	50		58	116	70-130
Methyl Acetate	50		49	98	70-130
Cyclohexane	50		56	112	70-130
Methylcyclohexane	50		54	108	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		44	88	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		46	92	67-127
Acetone	50		41	82	0-154
Carbon Disulfide	50		48	96	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		49	98	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		49	98	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		43	86	72-126
Carbon Tetrachloride	50		45	90	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		47	94	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		46	92	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5YLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		52	104	37-136
Dibromochloromethane	50		49	98	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		49	98	67-126
Isopropylbenzene	50		47	94	80-135
1,1,2,2-Tetrachloroetha	50		49	98	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		49	98	52-128
1,2,4-Trichlorobenzene	50		49	98	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		50	100	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		48	96	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	58-131
Chloromethane	50		43	86	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		44	88	67-127
Acetone	50		43	86	0-154
Carbon Disulfide	50		48	96	63-126
Methylene Chloride	50		45	90	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		52	104	52-130
1,1-Dichloroethane	50		46	92	74-118
2-Butanone	50		53	106	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		46	92	77-120
1,1,1-Trichloroethane	50		45	90	72-126
Carbon Tetrachloride	50		46	92	69-135
1,2-Dichloroethane	50		46	92	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		47	94	78-117
Bromodichloromethane	50		47	94	75-118
cis-1,3-Dichloropropene	50		47	94	78-120
4-Methyl-2-pentanone	50		54	108	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		47	94	73-123
1,1,2-Trichloroethane	50		46	92	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		56	112	37-136
Dibromochloromethane	50		48	96	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		48	96	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		49	98	83-122
Bromoform	50		50	100	67-126
Isopropylbenzene	50		47	94	80-135
1,1,2,2-Tetrachloroetha	50		50	100	70-117
1,3,5-Trimethylbenzene	50		47	94	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		49	98	78-113
1,2-Dibromo-3-chloropro	50		51	102	52-128
1,2,4-Trichlorobenzene	50		48	96	49-126
1,1,2-Trichlo-1,2,2-tri	50		49	98	70-130
Methyl Acetate	50		55	110	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		50	100	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ZLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	41	82	2	40	58-131
Chloromethane	50	43	86	0	40	63-120
Vinyl Chloride	50	46	92	0	40	61-134
Bromomethane	50	47	94	2	40	10-215
Chloroethane	50	47	94	0	40	55-146
Trichlorofluoromethane	50	48	96	0	40	63-126
1,1-Dichloroethene	50	45	90	2	40	67-127
Acetone	50	40	80	7	40	0-154
Carbon Disulfide	50	47	94	2	40	63-126
Methylene Chloride	50	46	92	2	40	62-128
trans-1,2-Dichloroethen	50	46	92	0	40	76-120
Methyl tert-butyl ether	50	50	100	4	40	52-130
1,1-Dichloroethane	50	45	90	2	40	74-118
2-Butanone	50	49	98	8	40	14-154
cis-1,2-Dichloroethene	50	46	92	0	40	83-115
Chloroform	50	45	90	2	40	77-120
1,1,1-Trichloroethane	50	45	90	0	40	72-126
Carbon Tetrachloride	50	46	92	0	40	69-135
1,2-Dichloroethane	50	45	90	2	40	65-126
Benzene	50	47	94	2	40	78-121
Trichloroethene	50	47	94	2	40	75-125
1,2-Dichloropropane	50	46	92	2	40	78-117
Bromodichloromethane	50	46	92	2	40	75-118
cis-1,3-Dichloropropene	50	46	92	2	40	78-120
4-Methyl-2-pentanone	50	50	100	8	40	45-141
Toluene	50	46	92	0	40	80-126
trans-1,3-Dichloroprope	50	45	90	4	40	73-123
1,1,2-Trichloroethane	50	44	88	4	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ZLCS Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	46	92	0	40	65-134
2-Hexanone	50	55	110	2	40	37-136
Dibromochloromethane	50	47	94	2	40	76-115
1,2-Dibromoethane	50	48	96	2	40	72-117
Chlorobenzene	50	47	94	2	40	78-117
Ethylbenzene	50	48	96	0	40	79-129
Xylene (Total)	150	140	93	0	40	83-125
Styrene	50	47	94	4	40	83-122
Bromoform	50	48	96	4	40	67-126
Isopropylbenzene	50	47	94	0	40	80-135
1,1,2,2-Tetrachloroetha	50	48	96	4	40	70-117
1,3,5-Trimethylbenzene	50	48	96	2	40	72-133
1,2,4-Trimethylbenzene	50	48	96	2	40	73-126
1,3-Dichlorobenzene	50	49	98	2	40	75-115
1,4-Dichlorobenzene	50	48	96	2	40	72-110
1,2-Dichlorobenzene	50	49	98	0	40	78-113
1,2-Dibromo-3-chloropro	50	50	100	2	40	52-128
1,2,4-Trichlorobenzene	50	48	96	0	40	49-126
1,1,2-Trichlo-1,2,2-tri	50	47	94	4	40	70-130
Methyl Acetate	50	51	102	8	40	70-130
Cyclohexane	50	47	94	2	40	70-130
Methylcyclohexane	50	50	100	0	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ALCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		39	78	58-131
Chloromethane	50		42	84	63-120
Vinyl Chloride	50		45	90	61-134
Bromomethane	50		45	90	10-215
Chloroethane	50		46	92	55-146
Trichlorofluoromethane	50		46	92	63-126
1,1-Dichloroethene	50		44	88	67-127
Acetone	50		42	84	0-154
Carbon Disulfide	50		46	92	63-126
Methylene Chloride	50		46	92	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		51	102	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		51	102	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		44	88	72-126
Carbon Tetrachloride	50		46	92	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		46	92	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		46	92	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		50	100	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		44	88	73-123
1,1,2-Trichloroethane	50		45	90	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5ALCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		52	104	37-136
Dibromochloromethane	50		47	94	76-115
1,2-Dibromoethane	50		48	96	72-117
Chlorobenzene	50		46	92	78-117
Ethylbenzene	50		46	92	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		47	94	67-126
Isopropylbenzene	50		46	92	80-135
1,1,2,2-Tetrachloroetha	50		49	98	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		48	96	75-115
1,4-Dichlorobenzene	50		47	94	72-110
1,2-Dichlorobenzene	50		48	96	78-113
1,2-Dibromo-3-chloropro	50		47	94	52-128
1,2,4-Trichlorobenzene	50		44	88	49-126
1,1,2-Trichlo-1,2,2-tri	50		47	94	70-130
Methyl Acetate	50		52	104	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		49	98	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5BLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		57	114	58-131
Chloromethane	50		44	88	63-120
Vinyl Chloride	50		46	92	61-134
Bromomethane	50		46	92	10-215
Chloroethane	50		51	102	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		45	90	67-127
Acetone	50		49	98	0-154
Carbon Disulfide	50		49	98	63-126
Methylene Chloride	50		48	96	62-128
trans-1,2-Dichloroethen	50		46	92	76-120
Methyl tert-butyl ether	50		51	102	52-130
1,1-Dichloroethane	50		45	90	74-118
2-Butanone	50		54	108	14-154
cis-1,2-Dichloroethene	50		46	92	83-115
Chloroform	50		45	90	77-120
1,1,1-Trichloroethane	50		44	88	72-126
Carbon Tetrachloride	50		45	90	69-135
1,2-Dichloroethane	50		45	90	65-126
Benzene	50		45	90	78-121
Trichloroethene	50		46	92	75-125
1,2-Dichloropropane	50		47	94	78-117
Bromodichloromethane	50		46	92	75-118
cis-1,3-Dichloropropene	50		46	92	78-120
4-Methyl-2-pentanone	50		52	104	45-141
Toluene	50		46	92	80-126
trans-1,3-Dichloroprope	50		46	92	73-123
1,1,2-Trichloroethane	50		45	90	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: V5BLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		46	92	65-134
2-Hexanone	50		54	108	37-136
Dibromochloromethane	50		48	96	76-115
1,2-Dibromoethane	50		49	98	72-117
Chlorobenzene	50		46	92	78-117
Ethylbenzene	50		46	92	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		48	96	67-126
Isopropylbenzene	50		46	92	80-135
1,1,2,2-Tetrachloroetha	50		51	102	70-117
1,3,5-Trimethylbenzene	50		47	94	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		47	94	75-115
1,4-Dichlorobenzene	50		46	92	72-110
1,2-Dichlorobenzene	50		48	96	78-113
1,2-Dibromo-3-chloropro	50		51	102	52-128
1,2,4-Trichlorobenzene	50		42	84	49-126
1,1,2-Trichlo-1,2,2-tri	50		50	100	70-130
Methyl Acetate	50		57	114	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		49	98	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V6C5020 BFB Injection Date: 02/20/03

Instrument ID: V6 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	6.8 (6.9)1
176	95.0 - 101.0% of mass 174	97.3 (99.7)1
177	5.0 - 9.0% of mass 176	7.6 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506H	V6S0220A	V6C5021	02/20/03	0952
02	VSTD0056H	V6S0220B	V6C5022	02/20/03	1042
03	VSTD2006H	V6S0220D	V6C5024	02/20/03	1141
04	VSTD1006H	V6S0220E	V6C5025	02/20/03	1212
05	VSTD0206H	V6S0220F	V6C5026	02/20/03	1242
06					
07					
08					
09					
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11					
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20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.954	1.080	1.091	1.074	1.061	1.052	5.3
Bromoform	*	0.213	0.231	0.257	0.231	0.229	0.232	6.8*
Isopropylbenzene		1.532	1.587	1.452	1.479	1.396	1.489	4.9
1,1,2,2-Tetrachloroethane	*	0.549	0.600	0.643	0.553	0.542	0.577	7.5*
1,3,5-Trimethylbenzene		2.373	2.532	2.271	2.375	2.311	2.372	4.2
1,2,4-Trimethylbenzene		2.470	2.594	2.412	2.400	2.316	2.438	4.2
1,3-Dichlorobenzene		1.469	1.567	1.477	1.493	1.482	1.498	2.7
1,4-Dichlorobenzene		1.583	1.616	1.529	1.504	1.461	1.539	4.0
1,2-Dichlorobenzene		1.360	1.468	1.427	1.398	1.381	1.407	3.0
1,2-Dibromo-3-chloropropane		0.106	0.096	0.116	0.092	0.088	0.100	11.1
1,2,4-Trichlorobenzene		0.957	0.967	0.925	0.901	0.912	0.932	3.1
1,1,2-Trichlo-1,2,2-trifluor		0.467	0.504	0.378	0.451	0.423	0.445	10.6
Methyl Acetate		0.194	0.197	0.202	0.167	0.155	0.183	11.3
Cyclohexane		0.415	0.407	0.362	0.411	0.402	0.399	5.4
Methylcyclohexane		0.448	0.458	0.424	0.468	0.465	0.453	3.9
Dibromofluoromethane		0.204	0.266	0.277	0.271	0.262	0.256	11.6
1,2-Dichloroethane-d4		0.047	0.060	0.065	0.058	0.057	0.057	11.1
Toluene-d8		0.916	1.191	1.162	1.179	1.055	1.101	10.6
Bromofluorobenzene		0.345	0.421	0.444	0.432	0.413	0.411	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V6C5110A BFB Injection Date: 02/24/03

Instrument ID: V6 BFB Injection Time: 1035

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.4
75	30.0 - 60.0% of mass 95	57.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	5.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.9
175	5.0 - 9.0% of mass 174	7.2 (7.3)1
176	95.0 - 101.0% of mass 174	98.6 (100.7)1
177	5.0 - 9.0% of mass 176	7.3 (7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506K	V6S0224A	V6C5111	02/24/03	1122
02	VBLK6K	V6B0224A	V6C5112	02/24/03	1155
03	V6KLCS	V6L0224A	V6C5113	02/24/03	1230
04	TB021303	B0262-01A	V6C5115	02/24/03	1346
05	RB021303	B0262-13A	V6C5116	02/24/03	1415
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V6 Calibration Date: 02/24/03 Time: 1122

Lab File ID: V6C5111 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.215	0.245	0.01	14.0	20.0	
Chloromethane	0.393	0.420	0.1	6.9	20.0	
Vinyl Chloride	0.432	0.445	0.01	3.0	20.0	
Bromomethane	0.380	0.433	0.01	13.9	20.0	
Chloroethane	0.295	0.329	0.01	11.5	20.0	
Trichlorofluoromethane	0.658	0.652	0.01	0.9	20.0	
1,1-Dichloroethene	0.440	0.435	0.01	1.1	20.0	
Acetone	0.099	0.075	0.01	24.2	20.0	<-
Carbon Disulfide	0.762	0.825	0.01	8.3	20.0	
Methylene Chloride	0.276	0.278	0.01	0.7	20.0	
trans-1,2-Dichloroethene	0.279	0.290	0.01	3.9	20.0	
Methyl tert-butyl ether	0.755	0.633	0.01	16.2	20.0	
1,1-Dichloroethane	0.456	0.481	0.1	5.5	20.0	
2-Butanone	0.088	0.068	0.01	22.7	20.0	<-
cis-1,2-Dichloroethene	0.289	0.297	0.01	2.8	20.0	
Chloroform	0.489	0.522	0.01	6.7	20.0	
1,1,1-Trichloroethane	0.387	0.433	0.01	11.9	20.0	
Carbon Tetrachloride	0.401	0.430	0.01	7.2	20.0	
1,2-Dichloroethane	0.376	0.384	0.01	2.1	20.0	
Benzene	1.025	1.122	0.01	9.5	20.0	
Trichloroethene	0.296	0.308	0.01	4.0	20.0	
1,2-Dichloropropane	0.257	0.274	0.01	6.6	20.0	
Bromodichloromethane	0.371	0.392	0.01	5.7	20.0	
cis-1,3-Dichloropropene	0.423	0.426	0.01	0.7	20.0	
4-Methyl-2-pentanone	0.167	0.133	0.01	20.4	20.0	<-
Toluene	1.113	1.221	0.01	9.7	20.0	
trans-1,3-Dichloropropene	0.382	0.368	0.01	3.7	20.0	
1,1,2-Trichloroethane	0.215	0.206	0.01	4.2	20.0	
Tetrachloroethene	0.317	0.321	0.01	1.3	20.0	
2-Hexanone	0.136	0.104	0.01	23.5	20.0	<-
Dibromochloromethane	0.355	0.338	0.01	4.8	20.0	
1,2-Dibromoethane	0.282	0.251	0.01	11.0	20.0	
Chlorobenzene	0.979	1.014	0.3	3.6	20.0	
Ethylbenzene	0.509	0.533	0.01	4.7	20.0	
m,p-Xylene	0.638	0.691	0.01	8.3	20.0	
o-Xylene	0.640	0.673	0.01	5.2	20.0	
Xylene (Total)	0.639	0.685	0.01	7.2	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V6 Calibration Date: 02/24/03 Time: 1122

Lab File ID: V6C5111 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.052	1.156	0.01	9.9	20.0	
Bromoform	0.232	0.205	0.1	11.6	20.0	
Isopropylbenzene	1.489	1.631	0.01	9.5	20.0	
1,1,2,2-Tetrachloroethane	0.577	0.500	0.3	13.3	20.0	
1,3,5-Trimethylbenzene	2.372	2.527	0.01	6.5	20.0	
1,2,4-Trimethylbenzene	2.438	2.608	0.01	7.0	20.0	
1,3-Dichlorobenzene	1.498	1.551	0.01	3.5	20.0	
1,4-Dichlorobenzene	1.539	1.596	0.01	3.7	20.0	
1,2-Dichlorobenzene	1.407	1.436	0.01	2.1	20.0	
1,2-Dibromo-3-chloropropane	0.100	0.072	0.01	28.0	20.0	<-
1,2,4-Trichlorobenzene	0.932	0.817	0.01	12.3	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.445	0.474	0.01	6.5	20.0	
Methyl Acetate	0.183	0.148	0.01	19.1	20.0	
Cyclohexane	0.399	0.435	0.01	9.0	20.0	
Methylcyclohexane	0.453	0.477	0.01	5.3	20.0	
Dibromofluoromethane	0.256	0.267	0.01	4.3	20.0	
1,2-Dichloroethane-d4	0.057	0.056	0.01	1.8	20.0	
Toluene-d8	1.101	1.198	0.01	8.8	20.0	
Bromofluorobenzene	0.411	0.422	0.01	2.7	20.0	

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID (Standard): V5E3992 Date Analyzed: 02/19/03

Instrument ID: V5 Time Analyzed: 1637

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	888715	6.25	665021	9.47	339123	12.22
	UPPER LIMIT	1777430	6.75	1330042	9.97	678246	12.72
	LOWER LIMIT	444358	5.75	332511	8.97	169562	11.72
	EPA SAMPLE NO.						
01	VBLK5Z	895897	6.25	680818	9.47	296689	12.22
02	V5ZLCS	824972	6.25	623776	9.47	321059	12.22
03	V5ZLCSD	839863	6.25	635094	9.47	321703	12.21
04	WOD-SS-122	728359	6.25	471039	9.47	134196*	12.22
05	SV1221012	565695	6.25	426610	9.47	168798*	12.22
06	WOD-SS-124	343637*	6.25	234600*	9.47	69805*	12.22
07	SV1240203	675980	6.26	512962	9.48	190378	12.21
08	WOD-SS-125	600324	6.26	396752	9.48	105054*	12.21
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IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID (Standard): V5E4022 Date Analyzed: 02/21/03

Instrument ID: V5 Time Analyzed: 1151

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	911388	6.25	685065	9.47	336893	12.22
	UPPER LIMIT	1822776	6.75	1370130	9.97	673786	12.72
	LOWER LIMIT	455694	5.75	342533	8.97	168447	11.72
	EPA SAMPLE NO.						
01	VBLK5A	967172	6.25	725353	9.47	308853	12.22
02	V5ALCS	961812	6.25	726897	9.47	360910	12.22
03	SVDUP07	819786	6.25	639452	9.47	290404	12.22
04	WOD-SS-124RE	742529	6.25	520488	9.47	152225*	12.22
05	SVI240203RE	735962	6.25	578428	9.48	239619	12.22
06	WOD-SS-123	697778	6.25	450161	9.48	123899*	12.22
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IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID (Standard): V5E4051 Date Analyzed: 02/23/03

Instrument ID: V5 Time Analyzed: 1132

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	897861	6.25	710539	9.47	349171	12.21
	UPPER LIMIT	1795722	6.75	1421078	9.97	698342	12.71
	LOWER LIMIT	448931	5.75	355270	8.97	174586	11.71
	EPA SAMPLE NO.						
01	VBLK5B	1041191	6.25	761180	9.47	285784	12.21
02	V5BLCS	900150	6.25	681956	9.48	334366	12.21
03	SV1250203	884845	6.26	636478	9.48	218349	12.21
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IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	2	J
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5Y

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0217A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3963

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	7	NJ
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5Z

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0219A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E3993

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/19/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	10	NJ
2.					
3.					
4.					
5.					
6.					
7.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0221A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4024

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0221A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4024

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0221A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4024

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0223A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4053

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0223A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4053

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK5B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: V5B0223A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4053

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: V6B0224A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5112

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: V6B0224A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5112

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK6K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: V6B0224A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5112

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V5E3960 BFB Injection Date: 02/17/03

Instrument ID: V5 BFB Injection Time: 1055

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.7
75	30.0 - 60.0% of mass 95	46.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.5 (6.9)1
176	95.0 - 101.0% of mass 174	76.5 (95.2)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505Y	V5S0217A	V5E3962	02/17/03	1144
02	VBLK5Y	V5B0217A	V5E3963	02/17/03	1214
03	V5YLCS	V5L0217A	V5E3964	02/17/03	1244
04	SV1231012MS	B0262-08BMS	V5E3980	02/17/03	2035
05	SV1231012MSD	B0262-08BMSD	V5E3981	02/17/03	2104
06	SV1231012	B0262-08B	V5E3982	02/17/03	2134
07	WOD-SS-121	B0262-02C	V5E3983	02/17/03	2202
08	SV1211012	B0262-03B	V5E3984	02/17/03	2232
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22					

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.223	0.01	19.5	20.0
Chloromethane	0.449	0.392	0.1	12.7	20.0
Vinyl Chloride	0.410	0.376	0.01	8.3	20.0
Bromomethane	0.235	0.215	0.01	8.5	20.0
Chloroethane	0.206	0.202	0.01	1.9	20.0
Trichlorofluoromethane	0.337	0.332	0.01	1.5	20.0
1,1-Dichloroethene	0.288	0.243	0.01	15.6	20.0
Acetone	0.119	0.106	0.01	10.9	20.0
Carbon Disulfide	0.803	0.770	0.01	4.1	20.0
Methylene Chloride	0.384	0.313	0.01	18.5	20.0
trans-1,2-Dichloroethene	0.299	0.258	0.01	13.7	20.0
Methyl tert-butyl ether	0.846	0.856	0.01	1.2	20.0
1,1-Dichloroethane	0.591	0.500	0.1	15.4	20.0
2-Butanone	0.172	0.174	0.01	1.2	20.0
cis-1,2-Dichloroethene	0.316	0.275	0.01	13.0	20.0
Chloroform	0.521	0.440	0.01	15.5	20.0
1,1,1-Trichloroethane	0.352	0.291	0.01	17.3	20.0
Carbon Tetrachloride	0.338	0.280	0.01	17.2	20.0
1,2-Dichloroethane	0.389	0.333	0.01	14.4	20.0
Benzene	1.241	1.060	0.01	14.6	20.0
Trichloroethene	0.319	0.273	0.01	14.4	20.0
1,2-Dichloropropane	0.336	0.293	0.01	12.8	20.0
Bromodichloromethane	0.391	0.339	0.01	13.3	20.0
cis-1,3-Dichloropropene	0.519	0.461	0.01	11.2	20.0
4-Methyl-2-pentanone	0.335	0.351	0.01	4.8	20.0
Toluene	1.206	1.034	0.01	14.3	20.0
trans-1,3-Dichloropropene	0.466	0.408	0.01	12.4	20.0
1,1,2-Trichloroethane	0.261	0.227	0.01	13.0	20.0
Tetrachloroethene	0.322	0.276	0.01	14.3	20.0
2-Hexanone	0.297	0.340	0.01	14.5	20.0
Dibromochloromethane	0.408	0.382	0.01	6.4	20.0
1,2-Dibromoethane	0.371	0.342	0.01	7.8	20.0
Chlorobenzene	1.071	0.964	0.3	10.0	20.0
Ethylbenzene	0.530	0.475	0.01	10.4	20.0
m,p-Xylene	0.655	0.592	0.01	9.6	20.0
o-Xylene	0.647	0.578	0.01	10.7	20.0
Xylene (Total)	0.652	0.587	0.01	10.0	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/17/03 Time: 1144

Lab File ID: V5E3962 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	0.987	0.01	10.3	20.0
Bromoform	0.280	0.264	0.1	5.7	20.0
Isopropylbenzene	1.622	1.423	0.01	12.3	20.0
1,1,2,2-Tetrachloroethane	1.053	0.941	0.3	10.6	20.0
1,3,5-Trimethylbenzene	2.819	2.381	0.01	15.5	20.0
1,2,4-Trimethylbenzene	2.863	2.448	0.01	14.5	20.0
1,3-Dichlorobenzene	1.661	1.445	0.01	13.0	20.0
1,4-Dichlorobenzene	1.683	1.450	0.01	13.8	20.0
1,2-Dichlorobenzene	1.574	1.364	0.01	13.3	20.0
1,2-Dibromo-3-chloropropane	0.158	0.136	0.01	13.9	20.0
1,2,4-Trichlorobenzene	0.869	0.728	0.01	16.2	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.232	0.01	4.1	20.0
Methyl Acetate	0.307	0.318	0.01	3.6	20.0
Cyclohexane	0.496	0.458	0.01	7.7	20.0
Methylcyclohexane	0.488	0.480	0.01	1.6	20.0
Dibromofluoromethane	0.290	0.283	0.01	2.4	20.0
1,2-Dichloroethane-d4	0.058	0.060	0.01	3.4	20.0
Toluene-d8	1.188	1.192	0.01	0.3	20.0
Bromofluorobenzene	0.490	0.491	0.01	0.2	20.0

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V5E3990 BFB Injection Date: 02/19/03

Instrument ID: V5 BFB Injection Time: 1537

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.0
75	30.0 - 60.0% of mass 95	45.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.8
175	5.0 - 9.0% of mass 174	5.5 (6.8)1
176	95.0 - 101.0% of mass 174	78.9 (97.6)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505Z	V5S0219A	V5E3992	02/19/03	1637
02	VBLK5Z	V5B0219A	V5E3993	02/19/03	1707
03	V5ZLCS	V5L0219A	V5E3994	02/19/03	1736
04	V5ZLCSD	V5L0219B	V5E3995	02/19/03	1805
05	WOD-SS-122	B0262-04C	V5E4008	02/20/03	0025
06	SV1221012	B0262-05B	V5E4009	02/20/03	0054
07	WOD-SS-124	B0262-09C	V5E4012	02/20/03	0221
08	SV1240203	B0262-10B	V5E4013	02/20/03	0250
09	WOD-SS-125	B0262-11C	V5E4014	02/20/03	0320
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/19/03 Time: 1637

Lab File ID: V5E3992 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.277	0.219	0.01	20.9	20.0	<-
Chloromethane	0.449	0.369	0.1	17.8	20.0	
Vinyl Chloride	0.410	0.363	0.01	11.5	20.0	
Bromomethane	0.235	0.209	0.01	11.1	20.0	
Chloroethane	0.206	0.187	0.01	9.2	20.0	
Trichlorofluoromethane	0.337	0.313	0.01	7.1	20.0	
1,1-Dichloroethene	0.288	0.254	0.01	11.8	20.0	
Acetone	0.119	0.098	0.01	17.6	20.0	
Carbon Disulfide	0.803	0.746	0.01	7.1	20.0	
Methylene Chloride	0.384	0.364	0.01	5.2	20.0	
trans-1,2-Dichloroethene	0.299	0.270	0.01	9.7	20.0	
Methyl tert-butyl ether	0.846	0.827	0.01	2.2	20.0	
1,1-Dichloroethane	0.591	0.526	0.1	11.0	20.0	
2-Butanone	0.172	0.178	0.01	3.5	20.0	
cis-1,2-Dichloroethene	0.316	0.288	0.01	8.9	20.0	
Chloroform	0.521	0.467	0.01	10.4	20.0	
1,1,1-Trichloroethane	0.352	0.311	0.01	11.6	20.0	
Carbon Tetrachloride	0.338	0.303	0.01	10.4	20.0	
1,2-Dichloroethane	0.389	0.346	0.01	11.0	20.0	
Benzene	1.241	1.116	0.01	10.1	20.0	
Trichloroethene	0.319	0.288	0.01	9.7	20.0	
1,2-Dichloropropane	0.336	0.301	0.01	10.4	20.0	
Bromodichloromethane	0.391	0.350	0.01	10.5	20.0	
cis-1,3-Dichloropropene	0.519	0.474	0.01	8.7	20.0	
4-Methyl-2-pentanone	0.335	0.343	0.01	2.4	20.0	
Toluene	1.206	1.100	0.01	8.8	20.0	
trans-1,3-Dichloropropene	0.466	0.420	0.01	9.9	20.0	
1,1,2-Trichloroethane	0.261	0.230	0.01	11.9	20.0	
Tetrachloroethene	0.322	0.298	0.01	7.4	20.0	
2-Hexanone	0.297	0.337	0.01	13.5	20.0	
Dibromochloromethane	0.408	0.386	0.01	5.4	20.0	
1,2-Dibromoethane	0.371	0.352	0.01	5.1	20.0	
Chlorobenzene	1.071	1.013	0.3	5.4	20.0	
Ethylbenzene	0.530	0.504	0.01	4.9	20.0	
m,p-Xylene	0.655	0.628	0.01	4.1	20.0	
o-Xylene	0.647	0.603	0.01	6.8	20.0	
Xylene (Total)	0.652	0.620	0.01	4.9	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/19/03 Time: 1637

Lab File ID: V5E3992 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.037	0.01	5.7	20.0
Bromoform	0.280	0.268	0.1	4.3	20.0
Isopropylbenzene	1.622	1.521	0.01	6.2	20.0
1,1,2,2-Tetrachloroethane	1.053	1.019	0.3	3.2	20.0
1,3,5-Trimethylbenzene	2.819	2.666	0.01	5.4	20.0
1,2,4-Trimethylbenzene	2.863	2.707	0.01	5.4	20.0
1,3-Dichlorobenzene	1.661	1.584	0.01	4.6	20.0
1,4-Dichlorobenzene	1.683	1.584	0.01	5.9	20.0
1,2-Dichlorobenzene	1.574	1.489	0.01	5.4	20.0
1,2-Dibromo-3-chloropropane	0.158	0.151	0.01	4.4	20.0
1,2,4-Trichlorobenzene	0.869	0.810	0.01	6.8	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.219	0.01	9.5	20.0
Methyl Acetate	0.307	0.305	0.01	0.6	20.0
Cyclohexane	0.496	0.458	0.01	7.7	20.0
Methylcyclohexane	0.488	0.467	0.01	4.3	20.0
Dibromofluoromethane	0.290	0.274	0.01	5.5	20.0
1,2-Dichloroethane-d4	0.058	0.058	0.01	0.0	20.0
Toluene-d8	1.188	1.192	0.01	0.3	20.0
Bromofluorobenzene	0.490	0.474	0.01	3.3	20.0

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V5E4020 BFB Injection Date: 02/21/03

Instrument ID: V5 BFB Injection Time: 1101

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.9
75	30.0 - 60.0% of mass 95	46.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	84.6
175	5.0 - 9.0% of mass 174	6.2 (7.3)1
176	95.0 - 101.0% of mass 174	82.4 (97.4)1
177	5.0 - 9.0% of mass 176	5.4 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505A	V5S0221A	V5E4022	02/21/03	1151
02	VBLK5A	V5B0221A	V5E4024	02/21/03	1303
03	V5ALCS	V5L0221A	V5E4025	02/21/03	1336
04	SVDUP07	B0262-06B	V5E4027	02/21/03	1435
05	WOD-SS-124RE	B0262-09CRE	V5E4029	02/21/03	1533
06	SV1240203RE	B0262-10BRE	V5E4030	02/21/03	1602
07	WOD-SS-123	B0262-07B	V5E4032	02/21/03	1700
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/21/03 Time: 1151

Lab File ID: V5E4022 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.277	0.232	0.01	16.2	20.0
Chloromethane	0.449	0.401	0.1	10.7	20.0
Vinyl Chloride	0.410	0.401	0.01	2.2	20.0
Bromomethane	0.235	0.223	0.01	5.1	20.0
Chloroethane	0.206	0.215	0.01	4.4	20.0
Trichlorofluoromethane	0.337	0.352	0.01	4.4	20.0
1,1-Dichloroethene	0.288	0.269	0.01	6.6	20.0
Acetone	0.119	0.103	0.01	13.4	20.0
Carbon Disulfide	0.803	0.848	0.01	5.6	20.0
Methylene Chloride	0.384	0.332	0.01	13.5	20.0
trans-1,2-Dichloroethene	0.299	0.283	0.01	5.4	20.0
Methyl tert-butyl ether	0.846	0.880	0.01	4.0	20.0
1,1-Dichloroethane	0.591	0.535	0.1	9.5	20.0
2-Butanone	0.172	0.182	0.01	5.8	20.0
cis-1,2-Dichloroethene	0.316	0.296	0.01	6.3	20.0
Chloroform	0.521	0.481	0.01	7.7	20.0
1,1,1-Trichloroethane	0.352	0.322	0.01	8.5	20.0
Carbon Tetrachloride	0.338	0.317	0.01	6.2	20.0
1,2-Dichloroethane	0.389	0.354	0.01	9.0	20.0
Benzene	1.241	1.153	0.01	7.1	20.0
Trichloroethene	0.319	0.300	0.01	6.0	20.0
1,2-Dichloropropane	0.336	0.311	0.01	7.4	20.0
Bromodichloromethane	0.391	0.360	0.01	7.9	20.0
cis-1,3-Dichloropropene	0.519	0.486	0.01	6.4	20.0
4-Methyl-2-pentanone	0.335	0.344	0.01	2.7	20.0
Toluene	1.206	1.142	0.01	5.3	20.0
trans-1,3-Dichloropropene	0.466	0.426	0.01	8.6	20.0
1,1,2-Trichloroethane	0.261	0.239	0.01	8.4	20.0
Tetrachloroethene	0.322	0.298	0.01	7.4	20.0
2-Hexanone	0.297	0.333	0.01	12.1	20.0
Dibromochloromethane	0.408	0.399	0.01	2.2	20.0
1,2-Dibromoethane	0.371	0.362	0.01	2.4	20.0
Chlorobenzene	1.071	1.030	0.3	3.8	20.0
Ethylbenzene	0.530	0.505	0.01	4.7	20.0
m,p-Xylene	0.655	0.634	0.01	3.2	20.0
o-Xylene	0.647	0.624	0.01	3.6	20.0
Xylene (Total)	0.652	0.630	0.01	3.4	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/21/03 Time: 1151

Lab File ID: V5E4022 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.059	0.01	3.7	20.0
Bromoform	0.280	0.272	0.1	2.8	20.0
Isopropylbenzene	1.622	1.549	0.01	4.5	20.0
1,1,2,2-Tetrachloroethane	1.053	1.060	0.3	0.7	20.0
1,3,5-Trimethylbenzene	2.819	2.780	0.01	1.4	20.0
1,2,4-Trimethylbenzene	2.863	2.771	0.01	3.2	20.0
1,3-Dichlorobenzene	1.661	1.651	0.01	0.6	20.0
1,4-Dichlorobenzene	1.683	1.614	0.01	4.1	20.0
1,2-Dichlorobenzene	1.574	1.550	0.01	1.5	20.0
1,2-Dibromo-3-chloropropane	0.158	0.153	0.01	3.2	20.0
1,2,4-Trichlorobenzene	0.869	0.799	0.01	8.0	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.254	0.01	5.0	20.0
Methyl Acetate	0.307	0.332	0.01	8.1	20.0
Cyclohexane	0.496	0.505	0.01	1.8	20.0
Methylcyclohexane	0.488	0.506	0.01	3.7	20.0
Dibromofluoromethane	0.290	0.283	0.01	2.4	20.0
1,2-Dichloroethane-d4	0.058	0.058	0.01	0.0	20.0
Toluene-d8	1.188	1.201	0.01	1.1	20.0
Bromofluorobenzene	0.490	0.480	0.01	2.0	20.0

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V5E4050 BFB Injection Date: 02/23/03

Instrument ID: V5 BFB Injection Time: 1115

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.6
75	30.0 - 60.0% of mass 95	47.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	79.9
175	5.0 - 9.0% of mass 174	5.7 (7.2)1
176	95.0 - 101.0% of mass 174	77.3 (96.7)1
177	5.0 - 9.0% of mass 176	5.1 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505B	V5S0223A	V5E4051	02/23/03	1132
02	VBLK5B	V5B0223A	V5E4053	02/23/03	1243
03	V5BLCS	V5L0223A	V5E4054	02/23/03	1312
04	SV1250203	B0262-12B	V5E4055	02/23/03	1341
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/23/03 Time: 1132

Lab File ID: V5E4051 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.277	0.210	0.01	24.2	20.0	<-
Chloromethane	0.449	0.408	0.1	9.1	20.0	
Vinyl Chloride	0.410	0.346	0.01	15.6	20.0	
Bromomethane	0.235	0.198	0.01	15.7	20.0	
Chloroethane	0.206	0.226	0.01	9.7	20.0	
Trichlorofluoromethane	0.337	0.364	0.01	8.0	20.0	
1,1-Dichloroethene	0.288	0.261	0.01	9.4	20.0	
Acetone	0.119	0.157	0.01	31.9	20.0	<-
Carbon Disulfide	0.803	0.884	0.01	10.1	20.0	
Methylene Chloride	0.384	0.378	0.01	1.6	20.0	
trans-1,2-Dichloroethene	0.299	0.280	0.01	6.4	20.0	
Methyl tert-butyl ether	0.846	0.866	0.01	2.4	20.0	
1,1-Dichloroethane	0.591	0.550	0.1	6.9	20.0	
2-Butanone	0.172	0.183	0.01	6.4	20.0	
cis-1,2-Dichloroethene	0.316	0.302	0.01	4.4	20.0	
Chloroform	0.521	0.489	0.01	6.1	20.0	
1,1,1-Trichloroethane	0.352	0.317	0.01	9.9	20.0	
Carbon Tetrachloride	0.338	0.293	0.01	13.3	20.0	
1,2-Dichloroethane	0.389	0.376	0.01	3.3	20.0	
Benzene	1.241	1.162	0.01	6.4	20.0	
Trichloroethene	0.319	0.294	0.01	7.8	20.0	
1,2-Dichloropropane	0.336	0.325	0.01	3.3	20.0	
Bromodichloromethane	0.391	0.376	0.01	3.8	20.0	
cis-1,3-Dichloropropene	0.519	0.505	0.01	2.7	20.0	
4-Methyl-2-pentanone	0.335	0.341	0.01	1.8	20.0	
Toluene	1.206	1.137	0.01	5.7	20.0	
trans-1,3-Dichloropropene	0.466	0.448	0.01	3.9	20.0	
1,1,2-Trichloroethane	0.261	0.246	0.01	5.7	20.0	
Tetrachloroethene	0.322	0.278	0.01	13.7	20.0	
2-Hexanone	0.297	0.304	0.01	2.4	20.0	
Dibromochloromethane	0.408	0.389	0.01	4.6	20.0	
1,2-Dibromoethane	0.371	0.358	0.01	3.5	20.0	
Chlorobenzene	1.071	0.990	0.3	7.6	20.0	
Ethylbenzene	0.530	0.489	0.01	7.7	20.0	
m,p-Xylene	0.655	0.611	0.01	6.7	20.0	
o-Xylene	0.647	0.608	0.01	6.0	20.0	
Xylene (Total)	0.652	0.610	0.01	6.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date: 02/23/03 Time: 1132

Lab File ID: V5E4051 Init. Calib. Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.100	1.040	0.01	5.4	20.0
Bromoform	0.280	0.266	0.1	5.0	20.0
Isopropylbenzene	1.622	1.485	0.01	8.4	20.0
1,1,2,2-Tetrachloroethane	1.053	1.034	0.3	1.8	20.0
1,3,5-Trimethylbenzene	2.819	2.780	0.01	1.4	20.0
1,2,4-Trimethylbenzene	2.863	2.835	0.01	1.0	20.0
1,3-Dichlorobenzene	1.661	1.583	0.01	4.7	20.0
1,4-Dichlorobenzene	1.683	1.570	0.01	6.7	20.0
1,2-Dichlorobenzene	1.574	1.501	0.01	4.6	20.0
1,2-Dibromo-3-chloropropane	0.158	0.148	0.01	6.3	20.0
1,2,4-Trichlorobenzene	0.869	0.740	0.01	14.8	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.242	0.246	0.01	1.6	20.0
Methyl Acetate	0.307	0.330	0.01	7.5	20.0
Cyclohexane	0.496	0.506	0.01	2.0	20.0
Methylcyclohexane	0.488	0.480	0.01	1.6	20.0
Dibromofluoromethane	0.290	0.293	0.01	1.0	20.0
1,2-Dichloroethane-d4	0.058	0.061	0.01	5.2	20.0
Toluene-d8	1.188	1.158	0.01	2.5	20.0
Bromofluorobenzene	0.490	0.480	0.01	2.0	20.0

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: V5E3670 BFB Injection Date: 02/07/03

Instrument ID: V5 BFB Injection Time: 0942

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.6
75	30.0 - 60.0% of mass 95	48.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	81.7
175	5.0 - 9.0% of mass 174	5.9 (7.3)1
176	95.0 - 101.0% of mass 174	79.6 (97.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505K	V5S0207A	V5E3671	02/07/03	1037
02	VSTD2005K	V5S0207C	V5E3673	02/07/03	1147
03	VSTD1005K	V5S0207D	V5E3674	02/07/03	1216
04	VSTD0055K	V5S0207B	V5E3677	02/07/03	1434
05	VSTD0205K	V5S0207E	V5E3678	02/07/03	1509
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.275	0.287	0.289	0.277	0.259	0.277	4.3
Chloromethane	*	0.450	0.448	0.482	0.411	0.452	0.449	5.7*
Vinyl Chloride		0.391	0.415	0.428	0.409	0.406	0.410	3.3
Bromomethane		0.289	0.250	0.236	0.221	0.181	0.235	16.8
Chloroethane		0.208	0.219	0.224	0.205	0.175	0.206	9.1
Trichlorofluoromethane		0.284	0.343	0.354	0.368	0.337	0.337	9.4
1,1-Dichloroethene		0.275	0.293	0.288	0.296	0.290	0.288	2.9
Acetone		0.154	0.123	0.135	0.099	0.084	0.119	23.6
Carbon Disulfide		0.794	0.819	0.844	0.819	0.737	0.803	5.1
Methylene Chloride		0.370	0.416	0.394	0.376	0.364	0.384	5.5
trans-1,2-Dichloroethene		0.282	0.304	0.298	0.309	0.303	0.299	3.5
Methyl tert-butyl ether		0.790	0.850	0.843	0.931	0.816	0.846	6.3
1,1-Dichloroethane	*	0.559	0.590	0.590	0.608	0.607	0.591	3.3*
2-Butanone		0.153	0.183	0.191	0.178	0.155	0.172	9.9
cis-1,2-Dichloroethene		0.299	0.317	0.312	0.328	0.322	0.316	3.5
Chloroform		0.494	0.507	0.521	0.547	0.535	0.521	4.1
1,1,1-Trichloroethane		0.340	0.368	0.346	0.357	0.351	0.352	3.0
Carbon Tetrachloride		0.301	0.344	0.336	0.355	0.354	0.338	6.6
1,2-Dichloroethane		0.340	0.386	0.412	0.408	0.397	0.389	7.5
Benzene		1.203	1.223	1.222	1.294	1.262	1.241	3.0
Trichloroethene		0.298	0.319	0.311	0.336	0.330	0.319	4.7
1,2-Dichloropropane		0.313	0.333	0.347	0.351	0.337	0.336	4.4
Bromodichloromethane		0.338	0.372	0.418	0.417	0.412	0.391	9.1
cis-1,3-Dichloropropene		0.438	0.494	0.556	0.558	0.548	0.519	10.0
4-Methyl-2-pentanone		0.282	0.353	0.344	0.383	0.315	0.335	11.4
Toluene		1.139	1.195	1.208	1.254	1.236	1.206	3.7
trans-1,3-Dichloropropene		0.389	0.436	0.521	0.494	0.489	0.466	11.3
1,1,2-Trichloroethane		0.233	0.247	0.298	0.267	0.259	0.261	9.3
Tetrachloroethene		0.322	0.337	0.323	0.297	0.333	0.322	4.8
2-Hexanone		0.258	0.317	0.288	0.331	0.289	0.297	9.6
Dibromochloromethane		0.348	0.396	0.468	0.386	0.440	0.408	11.6
1,2-Dibromoethane		0.334	0.373	0.414	0.343	0.391	0.371	8.9
Chlorobenzene	*	1.048	1.072	1.176	0.957	1.104	1.071	7.5*
Ethylbenzene		0.509	0.533	0.565	0.490	0.551	0.530	5.7
m,p-Xylene		0.631	0.654	0.716	0.606	0.669	0.655	6.4
o-Xylene		0.595	0.646	0.718	0.603	0.671	0.647	7.8
Xylene (Total)		0.619	0.651	0.717	0.605	0.670	0.652	6.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.963	1.072	1.273	1.048	1.143	1.100	10.6
Bromoform	*	0.220	0.260	0.346	0.270	0.305	0.280	17.0*
Isopropylbenzene		1.491	1.591	1.801	1.522	1.707	1.622	8.0
1,1,2,2-Tetrachloroethane	*	1.001	1.076	1.337	0.835	1.016	1.053	17.3*
1,3,5-Trimethylbenzene		2.785	2.848	3.316	2.309	2.835	2.819	12.7
1,2,4-Trimethylbenzene		2.811	2.821	3.415	2.382	2.886	2.863	12.9
1,3-Dichlorobenzene		1.608	1.645	1.960	1.396	1.698	1.661	12.2
1,4-Dichlorobenzene		1.661	1.657	1.973	1.416	1.706	1.683	11.8
1,2-Dichlorobenzene		1.524	1.538	1.919	1.322	1.569	1.574	13.7
1,2-Dibromo-3-chloropropane		0.117	0.155	0.210	0.136	0.170	0.158	22.3
1,2,4-Trichlorobenzene		0.667	0.779	1.062	0.823	1.013	0.869	19.0
1,1,2-Trichlo-1,2,2-trifluor		0.211	0.283	0.249	0.251	0.216	0.242	12.1
Methyl Acetate		0.286	0.327	0.327	0.320	0.275	0.307	7.9
Cyclohexane		0.486	0.515	0.507	0.510	0.462	0.496	4.4
Methylcyclohexane		0.462	0.508	0.489	0.521	0.462	0.488	5.5
Dibromofluoromethane		0.278	0.289	0.273	0.313	0.298	0.290	5.4
1,2-Dichloroethane-d4		0.048	0.061	0.057	0.065	0.061	0.058	10.7
Toluene-d8		1.208	1.229	1.117	1.133	1.253	1.188	5.0
Bromofluorobenzene		0.479	0.503	0.465	0.481	0.523	0.490	4.7

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT		JOB NUMBER	
NASA WALLOPS ISLAND			
SUBJECT			
VOA			
BASED ON		DRAWING NUMBER	
8260B			
BY	CHECKED BY	APPROVED BY	DATE
LWS			

WOD-55-122

Acetone = 150 ug/kg

$$\frac{189335 \times 250\ mg}{728359 \times 4.2g \times 0.119\ mL \times 0.85\ \%_{soil}} = 153\ mg/kg$$

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-04C

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4008

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: not dec. 15 Date Analyzed: 02/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	150	
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	9	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	18	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: V5 Calibration Date(s): 02/07/03 02/07/03

Heated Purge: (Y/N) Y Calibration Time(s): 1037 1509

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E3676 RRF20 =V5E3678
RRF50 =V5E3671 RRF100=V5E3674 RRF200=V5E3673

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.275	0.287	0.289	0.277	0.259	0.277	4.3
Chloromethane	*	0.450	0.448	0.482	0.411	0.452	0.449	5.7*
Vinyl Chloride		0.391	0.415	0.428	0.409	0.406	0.410	3.3
Bromomethane		0.289	0.250	0.236	0.221	0.181	0.235	16.8
Chloroethane		0.208	0.219	0.224	0.205	0.175	0.206	9.1
Trichlorofluoromethane		0.284	0.343	0.354	0.368	0.337	0.337	9.4
1,1-Dichloroethene		0.275	0.293	0.288	0.296	0.290	0.288	2.9
Acetone		0.154	0.123	0.135	0.099	0.084	0.119	23.6
Carbon Disulfide		0.794	0.819	0.844	0.819	0.737	0.803	5.1
Methylene Chloride		0.370	0.416	0.394	0.376	0.364	0.384	5.5
trans-1,2-Dichloroethene		0.282	0.304	0.298	0.309	0.303	0.299	3.5
Methyl tert-butyl ether		0.790	0.850	0.843	0.931	0.816	0.846	6.3
1,1-Dichloroethane	*	0.559	0.590	0.590	0.608	0.607	0.591	3.3*
2-Butanone		0.153	0.183	0.191	0.178	0.155	0.172	9.9
cis-1,2-Dichloroethene		0.299	0.317	0.312	0.328	0.322	0.316	3.5
Chloroform		0.494	0.507	0.521	0.547	0.535	0.521	4.1
1,1,1-Trichloroethane		0.340	0.368	0.346	0.357	0.351	0.352	3.0
Carbon Tetrachloride		0.301	0.344	0.336	0.355	0.354	0.338	6.6
1,2-Dichloroethane		0.340	0.386	0.412	0.408	0.397	0.389	7.5
Benzene		1.203	1.223	1.222	1.294	1.262	1.241	3.0
Trichloroethene		0.298	0.319	0.311	0.336	0.330	0.319	4.7
1,2-Dichloropropane		0.313	0.333	0.347	0.351	0.337	0.336	4.4
Bromodichloromethane		0.338	0.372	0.418	0.417	0.412	0.391	9.1
cis-1,3-Dichloropropene		0.438	0.494	0.556	0.558	0.548	0.519	10.0
4-Methyl-2-pentanone		0.282	0.353	0.344	0.383	0.315	0.335	11.4
Toluene		1.139	1.195	1.208	1.254	1.236	1.206	3.7
trans-1,3-Dichloropropene		0.389	0.436	0.521	0.494	0.489	0.466	11.3
1,1,2-Trichloroethane		0.233	0.247	0.298	0.267	0.259	0.261	9.3
Tetrachloroethene		0.322	0.337	0.323	0.297	0.333	0.322	4.8
2-Hexanone		0.258	0.317	0.288	0.331	0.289	0.297	9.6
Dibromochloromethane		0.348	0.396	0.468	0.386	0.440	0.408	11.6
1,2-Dibromoethane		0.334	0.373	0.414	0.343	0.391	0.371	8.9
Chlorobenzene	*	1.048	1.072	1.176	0.957	1.104	1.071	7.5*
Ethylbenzene		0.509	0.533	0.565	0.490	0.551	0.530	5.7
m,p-Xylene		0.631	0.654	0.716	0.606	0.669	0.655	6.4
o-Xylene		0.595	0.646	0.718	0.603	0.671	0.647	7.8
Xylene (Total)		0.619	0.651	0.717	0.605	0.670	0.652	6.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030219.B\V5E4008.D
Report Date: 10-Mar-2003 12:47

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030219.B\V5E4008.D
Lab Smp Id: B0262-04C Client Smp ID: WOD-SS-122
Inj Date : 20-FEB-2003 00:25
Operator : AN Inst ID: v5.i
Smp Info : TETRA,B0262-04C,WOD-SS-122,V5B0219A,,B0262
Misc Info : 14-FEB-03,,,,,,,4.2,,15
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030219.B\v58260H.m
Meth Date : 10-Mar-2003 12:42 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	4.200	Weight of sample (g)
M	15.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
9	Acetone	43	3.403	3.404	(0.544)	189335	109.070	150
112	Methyl Acetate	43	3.748	3.739	(0.600)	182245	40.7330	57
14	Methylene Chloride	84	3.856	3.847	(0.617)	35321	6.31179	9(a)
22	2-Butanone	43	5.117	5.108	(0.819)	32176	12.8298	18
$ 30	Dibromofluoromethane	113	5.580	5.571	(0.893)	235533	55.6924	78
$ 35	1,2-Dichloroethane-d4	102	5.914	5.905	(0.946)	52964	62.1301	87
* 38	Fluorobenzene	96	6.249	6.250	(1.000)	728359	50.0000	
$ 47	Toluene-d8	98	7.884	7.885	(0.833)	655425	58.5564	82
* 57	Chlorobenzene-d5	117	9.470	9.471	(1.000)	471039	50.0000	
$ 68	Bromofluorobenzene	95	10.829	10.830	(1.144)	201726	43.6823	61
* 81	1,4-Dichlorobenzene-d4	152	12.218	12.219	(1.000)	134196	50.0000	

3/10/03

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	WOD-SS-125	70	69	79	77	77	94	78	63	0
02	SV1250203	56	60	75	60	62	81	63	53	0
03	WOD-SS-123	65	65	81	66	69	101	68	66	0
04	SV1211012	61	68	75	66	66	85	67	59	0
05	SVDUP07	51	57	59	56	56	64	59	52	0
06	SV1231012	62	66	71	67	67	79	70	61	0
07	SV1231012MS	63	65	73	69	67	79	67	60	0
08	SV1231012MSD	63	63	69	68	68	73	69	61	0
09	SBLK2S	91	95	98	101*	96*	88	96	89	2
10	SV1221012	65	68	71	74	71	65	72	66	0
11	SV1240203	62	64	66	70	66	67	68	60	0
12	S2SLCS	90	90	96	101*	98*	96	96	87	2
13	WOD-SS-121	71	75	78	78	78	82	78	69	0
14	WOD-SS-124	64	66	73	75	72	78	73	65	0
15	WOD-SS-122	67	72	79	75	74	83	74	67	0
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND		RRF160					$\overline{RRF}$	% RSD
Phenol	*	1.390					1.399	3.2*
bis(2-Chloroethyl)Ether	*	1.100					1.112	4.4*
2-Chlorophenol	*	1.371					1.295	3.5*
2-Methylphenol	*	1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane)	*	1.235					1.228	8.5*
4-Methylphenol	*	1.129					1.108	1.6*
N-Nitroso-di-n-propylamine	*	0.729					0.820	7.3*
Hexachloroethane	*	0.627					0.609	2.4*
Nitrobenzene	*	0.406					0.416	4.6*
Isophorone	*	0.535					0.541	2.3*
2-Nitrophenol	*	0.219					0.207	5.1*
2,4-Dimethylphenol	*	0.383					0.349	7.8*
2,4-Dichlorophenol	*	0.356					0.321	8.1*
Naphthalene	*	1.196					1.127	4.2*
4-Chloroaniline	*	0.251					0.255	31.9*
bis(2-Chloroethoxy)methane	*	0.403					0.396	2.1*
Hexachlorobutadiene	*	0.220					0.214	4.2*
4-Chloro-3-Methylphenol	*	0.348					0.331	4.0*
2-Methylnaphthalene	*	1.032					0.959	7.5*
Hexachlorocyclopentadiene	*	0.369					0.323	10.7*
2,4,6-Trichlorophenol	*	0.424					0.387	7.2*
2,4,5-Trichlorophenol	*	0.457					0.412	7.4*
2-Chloronaphthalene	*	1.346					1.224	7.1*
2-Nitroaniline	*	0.518					0.527	2.8*
Dimethylphthalate	*	1.415					1.385	1.7*
Acenaphthylene	*	1.879					1.819	2.1*
2,6-Dinitrotoluene	*	0.318					0.308	2.6*
3-Nitroaniline	*	0.274					0.181	52.2*
Acenaphthene	*	1.311					1.218	5.3*
2,4-Dinitrophenol	*	0.201					0.167	17.9*
4-Nitrophenol	*	0.265					0.267	6.2*
Dibenzofuran	*	2.250					2.192	5.6*
2,4-Dinitrotoluene	*	0.456					0.427	7.5*
Diethylphthalate	*	1.413					1.367	3.2*
4-Chlorophenyl-phenylether	*	0.600					0.656	7.8*
Fluorene	*	1.325					1.349	7.0*
4-Nitroaniline	*	0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177					0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407					0.394	20.1*
4-Bromophenyl-phenylether	* 0.262					0.243	5.7*
Hexachlorobenzene	* 0.255					0.236	5.7*
Pentachlorophenol	* 0.166					0.143	15.2*
Phenanthrene	* 1.296					1.190	7.1*
Anthracene	* 1.261					1.166	6.3*
Carbazole	* 0.612					0.572	31.8*
Di-n-butylphthalate	* 1.451					1.374	4.8*
Fluoranthene	* 1.230					1.143	7.2*
Pyrene	* 1.223					1.206	1.6*
Butylbenzylphthalate	* 0.629					0.613	2.3*
3,3'-Dichlorobenzidine	0.136					0.147	12.9
Benzo(a)anthracene	* 1.092					1.086	1.1*
Chrysene	* 0.963					1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824					0.878	6.6*
Di-n-octylphthalate	* 2.687					2.408	13.8*
Benzo(b)fluoranthene	* 1.959					1.686	12.1*
Benzo(k)fluoranthene	* 1.683					1.669	6.2*
Benzo(a)pyrene	* 1.582					1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678					1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479					1.323	8.0*
Benzo(g,h,i)perylene	* 1.338					1.245	6.0*
1,1'-Biphenyl	* 1.686					1.644	3.2*
Acetophenone	* 1.856					1.809	2.4*
Atrazine	* 0.173					0.178	9.6*
Benzaldehyde	* 0.213					0.477	40.0*
Caprolactum	* 0.097					0.099	1.1*
Nitrobenzene-d5	0.436					0.440	2.2*
2-Fluorobiphenyl	* 1.695					1.579	4.7*
Terphenyl-d14	* 0.882					0.901	1.7*
Phenol-d5	* 1.296					1.322	4.2*
2-Fluorophenol	* 1.164					1.122	3.9*
2,4,6-Tribromophenol	* 0.128					0.116	8.5*
2-Chlorophenol-d4	* 1.326					1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981					0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S3C2289 DFTPP Injection Date: 03/13/03

Instrument ID: S3 DFTPP Injection Time: 0915

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.5
68	Less than 2.0% of mass 69	1.0 (2.0)1
69	Mass 69 relative abundance	49.0
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	24.0
365	Greater than 1.0% of mass 198	3.94
441	Present, but less than mass 443	10.7
442	40.0 - 99.9% of mass 198	71.5
443	17.0 - 23.0% of mass 442	13.9 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503M	SS0313A	S3C2290	03/13/03	0935
02	SBLK3P	MB-5678	S3C2293	03/13/03	1201
03	S3PLCS	LCS-5678	S3C2294	03/13/03	1244
04	S3PLCSD	LCSD-5678	S3C2295	03/13/03	1325
05	RB-021303	B0262-13D	S3C2298	03/13/03	1532
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.420	0.050	1.5	20.0
bis(2-Chloroethyl)Ether	1.112	1.150	0.050	3.4	100
2-Chlorophenol	1.295	1.284	0.050	-0.8	100
2-Methylphenol	1.130	1.082	0.050	-4.2	100
2,2'-oxybis(1-Chloropropane)	1.228	1.273	0.050	3.7	100
4-Methylphenol	1.108	1.107	0.050	-0.1	100
N-Nitroso-di-n-propylamine	0.820	0.850	0.050	3.6	100
Hexachloroethane	0.609	0.615	0.050	1.0	100
Nitrobenzene	0.416	0.419	0.050	0.7	100
Isophorone	0.541	0.531	0.050	-1.8	100
2-Nitrophenol	0.207	0.200	0.050	-3.4	20.0
2,4-Dimethylphenol	0.349	0.282	0.050	-19.2	100
2,4-Dichlorophenol	0.321	0.295	0.050	-8.1	20.0
Naphthalene	1.127	1.086	0.050	-3.6	100
4-Chloroaniline	0.255	0.148	0.050	-42.0	100
bis(2-Chloroethoxy)methane	0.396	0.394	0.050	-0.5	100
Hexachlorobutadiene	0.214	0.202	0.050	-5.6	20.0
4-Chloro-3-Methylphenol	0.331	0.318	0.050	-3.9	20.0
2-Methylnaphthalene	0.959	0.903	0.050	-5.8	100
Hexachlorocyclopentadiene	0.323	0.281	0.050	-13.0	100
2,4,6-Trichlorophenol	0.387	0.373	0.050	-3.6	100
2,4,5-Trichlorophenol	0.412	0.381	0.050	-7.5	100
2-Chloronaphthalene	1.224	1.157	0.050	-5.5	100
2-Nitroaniline	0.527	0.532	0.050	0.9	100
Dimethylphthalate	1.385	1.353	0.050	-2.3	100
Acenaphthylene	1.819	1.763	0.050	-3.1	100
2,6-Dinitrotoluene	0.308	0.302	0.050	-1.9	100
3-Nitroaniline	0.181	0.166	0.050	-8.3	100
Acenaphthene	1.218	1.148	0.050	-5.7	20.0
2,4-Dinitrophenol	0.167	0.147	0.050	-12.0	100
4-Nitrophenol	0.267	0.275	0.050	3.0	100
Dibenzofuran	2.192	2.152	0.050	-1.8	100
2,4-Dinitrotoluene	0.427	0.417	0.050	-2.3	100
Diethylphthalate	1.367	1.345	0.050	-1.6	100
4-Chlorophenyl-phenylether	0.656	0.677	0.050	3.2	100
Fluorene	1.349	1.357	0.050	0.6	100
4-Nitroaniline	0.150	0.169	0.050	12.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.148	0.050	-6.9	100
N-Nitrosodiphenylamine(1)	0.394	0.342	0.050	-13.2	20.0
4-Bromophenyl-phenylether	0.243	0.225	0.050	-7.4	100
Hexachlorobenzene	0.236	0.219	0.050	-7.2	100
Pentachlorophenol	0.143	0.129	0.050	-9.8	20.0
Phenanthrene	1.190	1.129	0.050	-5.1	100
Anthracene	1.166	1.071	0.050	-8.1	100
Carbazole	0.572	0.384	0.050	-32.9	100
Di-n-butylphthalate	1.374	1.362	0.050	-0.9	100
Fluoranthene	1.143	1.109	0.050	-3.0	20.0
Pyrene	1.206	1.173	0.050	-2.7	100
Butylbenzylphthalate	0.613	0.604	0.050	-1.5	100
3,3'-Dichlorobenzidine	0.147	0.144	0.050	-2.0	100
Benzo(a)anthracene	1.086	1.064	0.050	-2.0	100
Chrysene	1.034	1.075	0.050	4.0	100
bis(2-Ethylhexyl)phthalate	0.878	0.937	0.050	6.7	100
Di-n-octylphthalate	2.408	2.301	0.050	-4.4	20.0
Benzo(b)fluoranthene	1.686	1.592	0.050	-5.6	100
Benzo(k)fluoranthene	1.669	1.622	0.050	-2.8	100
Benzo(a)pyrene	1.448	1.341	0.050	-7.4	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.512	0.050	-1.6	100
Dibenzo(a,h)anthracene	1.323	1.285	0.050	-2.9	100
Benzo(g,h,i)perylene	1.245	1.239	0.050	-0.5	100
1,1'-Biphenyl	1.644	1.564	0.050	-4.9	100
Acetophenone	1.809	1.818	0.050	0.5	100
Atrazine	0.178	0.129	0.050	-27.5	100
Benzaldehyde	0.477	0.660	0.050	38.4	100
Caprolactum	0.099	0.096	0.050	-3.0	100
Nitrobenzene-d5	0.440	0.447	0.050	1.6	100
2-Fluorobiphenyl	1.579	1.490	0.050	-5.6	100
Terphenyl-d14	0.901	0.874	0.050	-3.0	100
Phenol-d5	1.322	1.346	0.050	1.8	100
2-Fluorophenol	1.122	1.129	0.050	0.6	100
2,4,6-Tribromophenol	0.116	0.105	0.050	-9.5	100
2-Chlorophenol-d4	1.291	1.294	0.050	0.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S3 Calibration Date: 03/13/03 Time: 0935

Lab File ID: S3C2290 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.886	0.050	-4.1	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2432 DFTPP Injection Date: 03/09/03

Instrument ID: S2 DFTPP Injection Time: 1954

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.6
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	42.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	3.18
441	Present, but less than mass 443	6.0
442	40.0 - 99.9% of mass 198	51.4
443	17.0 - 23.0% of mass 442	10.0 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502D	SS0309B	S2D2433	03/09/03	2012
02	SSTD1602D	SS0309C	S2D2434	03/09/03	2052
03	SSTD0102D	SS0309D	S2D2435	03/09/03	2132
04	SSTD1202D	SS0309E	S2D2436	03/09/03	2212
05	SSTD0802D	SS0309F	S2D2437	03/09/03	2252
06	SSTD0202D	SS0309G	S2D2438	03/09/03	2331
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.318					1.251	4.8*
bis(2-Chloroethyl)Ether	* 1.073					0.960	8.1*
2-Chlorophenol	* 1.203					1.172	2.8*
2-Methylphenol	* 1.028					0.973	4.3*
2,2'-oxybis(1-Chloropropane)	* 1.271					1.243	1.5*
4-Methylphenol	* 1.094					1.043	4.9*
N-Nitroso-di-n-propylamine	* 0.628					0.727	10.5*
Hexachloroethane	* 0.543					0.549	2.1*
Nitrobenzene	* 0.417					0.398	4.6*
Isophorone	* 0.554					0.542	1.5*
2-Nitrophenol	* 0.237					0.220	5.4*
2,4-Dimethylphenol	* 0.412					0.392	3.9*
2,4-Dichlorophenol	* 0.384					0.347	9.2*
Naphthalene	* 1.250					1.106	9.1*
4-Chloroaniline	* 0.567					0.504	10.6*
bis(2-Chloroethoxy)methane	* 0.388					0.350	7.9*
Hexachlorobutadiene	* 0.273					0.253	5.0*
4-Chloro-3-Methylphenol	* 0.364					0.336	6.1*
2-Methylnaphthalene	* 1.211					1.048	11.8*
Hexachlorocyclopentadiene	* 0.330					0.249	32.2*
2,4,6-Trichlorophenol	* 0.392					0.371	4.0*
2,4,5-Trichlorophenol	* 0.436					0.401	6.0*
2-Chloronaphthalene	* 1.257					1.171	6.0*
2-Nitroaniline	* 0.466					0.472	2.3*
Dimethylphthalate	* 1.512					1.478	2.9*
Acenaphthylene	* 1.907					1.824	2.9*
2,6-Dinitrotoluene	* 0.364					0.344	4.3*
3-Nitroaniline	* 0.391					0.362	5.8*
Acenaphthene	* 1.228					1.159	4.4*
2,4-Dinitrophenol	* 0.194					0.154	26.4*
4-Nitrophenol	* 0.204					0.171	19.0*
Dibenzofuran	* 2.464					2.295	5.8*
2,4-Dinitrotoluene	* 0.460					0.452	3.8*
Diethylphthalate	* 1.508					1.492	2.1*
4-Chlorophenyl-phenylether	* 0.765					0.716	4.8*
Fluorene	* 1.551					1.415	7.2*
4-Nitroaniline	* 0.174					0.233	19.3*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND		RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	*	0.199						0.177	11.4*
N-Nitrosodiphenylamine (1)	*	0.528						0.495	4.3*
4-Bromophenyl-phenylether	*	0.273						0.253	5.7*
Hexachlorobenzene	*	0.310						0.293	3.6*
Pentachlorophenol	*	0.128						0.097	26.1*
Phenanthrene	*	1.303						1.179	7.4*
Anthracene	*	1.269						1.168	6.5*
Carbazole	*	0.746						0.741	8.5*
Di-n-butylphthalate	*	1.495						1.382	5.3*
Fluoranthene	*	1.375						1.244	7.1*
Pyrene	*	1.156						1.127	2.5*
Butylbenzylphthalate	*	0.584						0.563	2.5*
3,3'-Dichlorobenzidine		0.319						0.350	12.3
Benzo(a)anthracene	*	1.155						1.115	3.1*
Chrysene	*	0.983						0.957	1.7*
bis(2-Ethylhexyl)phthalate	*	0.816						0.756	5.6*
Di-n-octylphthalate	*	2.414						2.123	10.4*
Benzo(b)fluoranthene	*	2.163						1.794	12.7*
Benzo(k)fluoranthene	*	1.693						1.601	5.6*
Benzo(a)pyrene	*	1.614						1.495	7.2*
Indeno(1,2,3-cd)pyrene	*	1.873						1.742	7.0*
Dibenzo(a,h)anthracene	*	1.629						1.490	8.3*
Benzo(g,h,i)perylene	*	1.443						1.369	5.7*
1,1'-Biphenyl	*	1.666						1.535	7.0*
Acetophenone	*	1.713						1.677	3.4*
Atrazine	*	0.234						0.235	2.9*
Benzaldehyde	*	0.428						0.565	15.6*
Caprolactum	*	0.082						0.085	8.8*
Nitrobenzene-d5		0.464						0.445	4.2*
2-Fluorobiphenyl	*	1.648						1.539	5.0*
Terphenyl-d14	*	0.927						0.906	2.7*
Phenol-d5	*	1.238						1.198	4.4*
2-Fluorophenol	*	0.958						0.919	5.7*
2,4,6-Tribromophenol	*	0.130						0.123	4.1*
2-Chlorophenol-d4	*	1.259						1.211	3.8*
1,2-Dichlorobenzene-d4	*	0.964						0.927	2.6*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2440 DFTPP Injection Date: 03/10/03

Instrument ID: S2 DFTPP Injection Time: 0044

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	53.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	43.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	26.9
365	Greater than 1.0% of mass 198	3.06
441	Present, but less than mass 443	5.6
442	40.0 - 99.9% of mass 198	48.1
443	17.0 - 23.0% of mass 442	9.4 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502E	SS0310A	S2D2441	03/10/03	0101
02	WOD-SS-125	B0262-11A	S2D2452	03/10/03	0812
03	SV1250203	B0262-12A	S2D2453	03/10/03	0851
04	WOD-SS-123	B0262-07A	S2D2454	03/10/03	0932
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
Phenol	1.251	1.266	0.050	1.2	20.0
bis(2-Chloroethyl)Ether	0.960	0.920	0.050	-4.2	100
2-Chlorophenol	1.172	1.173	0.050	0.1	100
2-Methylphenol	0.973	0.972	0.050	-0.1	100
2,2'-oxybis(1-Chloropropane)	1.243	1.270	0.050	2.2	100
4-Methylphenol	1.043	1.042	0.050	-0.1	100
N-Nitroso-di-n-propylamine	0.727	0.824	0.050	13.3	100
Hexachloroethane	0.549	0.558	0.050	1.6	100
Nitrobenzene	0.398	0.388	0.050	-2.5	100
Isophorone	0.542	0.556	0.050	2.6	100
2-Nitrophenol	0.220	0.220	0.050	0.0	20.0
2,4-Dimethylphenol	0.392	0.382	0.050	-2.6	100
2,4-Dichlorophenol	0.347	0.331	0.050	-4.6	20.0
Naphthalene	1.106	1.051	0.050	-5.0	100
4-Chloroaniline	0.504	0.482	0.050	-4.4	100
bis(2-Chloroethoxy)methane	0.350	0.340	0.050	-2.8	100
Hexachlorobutadiene	0.253	0.240	0.050	-5.1	20.0
4-Chloro-3-Methylphenol	0.336	0.331	0.050	-1.5	20.0
2-Methylnaphthalene	1.048	0.976	0.050	-6.9	100
Hexachlorocyclopentadiene	0.249	0.246	0.050	-1.2	100
2,4,6-Trichlorophenol	0.371	0.373	0.050	0.5	100
2,4,5-Trichlorophenol	0.401	0.405	0.050	1.0	100
2-Chloronaphthalene	1.171	1.163	0.050	-0.7	100
2-Nitroaniline	0.472	0.481	0.050	1.9	100
Dimethylphthalate	1.478	1.503	0.050	1.7	100
Acenaphthylene	1.824	1.811	0.050	-0.7	100
2,6-Dinitrotoluene	0.344	0.354	0.050	2.9	100
3-Nitroaniline	0.362	0.367	0.050	1.4	100
Acenaphthene	1.159	1.156	0.050	-0.2	20.0
2,4-Dinitrophenol	0.154	0.148	0.050	-3.9	100
4-Nitrophenol	0.171	0.169	0.050	-1.2	100
Dibenzofuran	2.295	2.290	0.050	-0.2	100
2,4-Dinitrotoluene	0.452	0.465	0.050	2.9	100
Diethylphthalate	1.492	1.517	0.050	1.7	100
4-Chlorophenyl-phenylether	0.716	0.702	0.050	-2.0	100
Fluorene	1.415	1.400	0.050	-1.1	100
4-Nitroaniline	0.233	0.297	0.050	-27.5	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.177	0.178	0.050	0.6	100
N-Nitrosodiphenylamine(1)	0.495	0.480	0.050	-3.0	20.0
4-Bromophenyl-phenylether	0.253	0.244	0.050	-3.6	100
Hexachlorobenzene	0.293	0.290	0.050	-1.0	100
Pentachlorophenol	0.097	0.089	0.050	-8.2	20.0
Phenanthrene	1.179	1.159	0.050	-1.7	100
Anthracene	1.168	1.133	0.050	-3.0	100
Carbazole	0.741	0.748	0.050	0.9	100
Di-n-butylphthalate	1.382	1.359	0.050	-1.7	100
Fluoranthene	1.244	1.226	0.050	-1.4	20.0
Pyrene	1.127	1.139	0.050	1.1	100
Butylbenzylphthalate	0.563	0.571	0.050	1.4	100
3,3'-Dichlorobenzidine	0.350	0.374	0.050	6.8	100
Benzo(a)anthracene	1.115	1.114	0.050	-0.1	100
Chrysene	0.957	0.966	0.050	0.9	100
bis(2-Ethylhexyl)phthalate	0.756	0.742	0.050	-1.8	100
Di-n-octylphthalate	2.123	2.100	0.050	-1.1	20.0
Benzo(b)fluoranthene	1.794	1.649	0.050	-8.1	100
Benzo(k)fluoranthene	1.601	1.616	0.050	0.9	100
Benzo(a)pyrene	1.495	1.473	0.050	-1.5	20.0
Indeno(1,2,3-cd)pyrene	1.742	1.746	0.050	0.2	100
Dibenzo(a,h)anthracene	1.490	1.467	0.050	-1.5	100
Benzo(g,h,i)perylene	1.369	1.410	0.050	3.0	100
1,1'-Biphenyl	1.535	1.502	0.050	-2.1	100
Acetophenone	1.677	1.728	0.050	3.0	100
Atrazine	0.235	0.240	0.050	2.1	100
Benzaldehyde	0.565	0.765	0.050	35.4	100
Caprolactum	0.085	0.087	0.050	2.4	100
Nitrobenzene-d5	0.445	0.446	0.050	0.2	100
2-Fluorobiphenyl	1.539	1.527	0.050	-0.8	100
Terphenyl-d14	0.906	0.917	0.050	1.2	100
Phenol-d5	1.198	1.215	0.050	1.4	100
2-Fluorophenol	0.919	0.940	0.050	2.3	100
2,4,6-Tribromophenol	0.123	0.121	0.050	-1.6	100
2-Chlorophenol-d4	1.211	1.213	0.050	0.2	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 0101

Lab File ID: S2D2441 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.927	0.933	0.050	0.6	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2458 DFTPP Injection Date: 03/10/03

Instrument ID: S2 DFTPP Injection Time: 1447

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	49.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.0
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	42.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.4
275	10.0 - 30.0% of mass 198	29.2
365	Greater than 1.0% of mass 198	3.32
441	Present, but less than mass 443	3.9
442	40.0 - 99.9% of mass 198	61.2
443	17.0 - 23.0% of mass 442	11.5 (18.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502F	SS0310B	S2D2459	03/10/03	1525
02	SV1211012	B0262-03A	S2D2469	03/10/03	2209
03	SVDUP07	B0262-06A	S2D2470	03/10/03	2248
04	SV1231012	B0262-08A	S2D2471	03/10/03	2327
05	SV1231012MS	B0262-08AMS	S2D2472	03/11/03	0006
06	SV1231012MSD	B0262-08AMSD	S2D2473	03/11/03	0045
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 1525

Lab File ID: S2D2459 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.251	1.480	0.050	18.3	20.0
bis(2-Chloroethyl)Ether	0.960	0.956	0.050	-0.4	100
2-Chlorophenol	1.172	1.234	0.050	5.3	100
2-Methylphenol	0.973	1.000	0.050	2.8	100
2,2'-oxybis(1-Chloropropane)	1.243	1.282	0.050	3.1	100
4-Methylphenol	1.043	1.052	0.050	0.9	100
N-Nitroso-di-n-propylamine	0.727	0.710	0.050	-2.3	100
Hexachloroethane	0.549	0.564	0.050	2.7	100
Nitrobenzene	0.398	0.418	0.050	5.0	100
Isophorone	0.542	0.671	0.050	23.8	100
2-Nitrophenol	0.220	0.240	0.050	9.1	20.0
2,4-Dimethylphenol	0.392	0.396	0.050	1.0	100
2,4-Dichlorophenol	0.347	0.370	0.050	6.6	20.0
Naphthalene	1.106	1.064	0.050	-3.8	100
4-Chloroaniline	0.504	0.374	0.050	25.8	100
bis(2-Chloroethoxy)methane	0.350	0.368	0.050	5.1	100
Hexachlorobutadiene	0.253	0.265	0.050	4.7	20.0
4-Chloro-3-Methylphenol	0.336	0.378	0.050	12.5	20.0
2-Methylnaphthalene	1.048	0.800	0.050	-23.7	100
Hexachlorocyclopentadiene	0.249	0.202	0.050	-18.9	100
2,4,6-Trichlorophenol	0.371	0.422	0.050	13.7	100
2,4,5-Trichlorophenol	0.401	0.457	0.050	14.0	100
2-Chloronaphthalene	1.171	1.173	0.050	0.2	100
2-Nitroaniline	0.472	0.401	0.050	-15.0	100
Dimethylphthalate	1.478	1.579	0.050	6.8	100
Acenaphthylene	1.824	1.864	0.050	2.2	100
2,6-Dinitrotoluene	0.344	0.378	0.050	9.9	100
3-Nitroaniline	0.362	0.313	0.050	-13.5	100
Acenaphthene	1.159	1.195	0.050	3.1	20.0
2,4-Dinitrophenol	0.154	0.154	0.050	0.0	100
4-Nitrophenol	0.171	0.212	0.050	24.0	100
Dibenzofuran	2.295	1.842	0.050	-19.7	100
2,4-Dinitrotoluene	0.452	0.504	0.050	11.5	100
Diethylphthalate	1.492	1.637	0.050	9.7	100
4-Chlorophenyl-phenylether	0.716	0.763	0.050	6.6	100
Fluorene	1.415	1.468	0.050	3.7	100
4-Nitroaniline	0.233	0.288	0.050	23.6	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 1525

Lab File ID: S2D2459 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.177	0.167	0.050	-5.6	100
N-Nitrosodiphenylamine(1)	0.495	0.552	0.050	11.5	20.0
4-Bromophenyl-phenylether	0.253	0.275	0.050	8.7	100
Hexachlorobenzene	0.293	0.308	0.050	5.1	100
Pentachlorophenol	0.097	0.109	0.050	12.4	20.0
Phenanthrene	1.179	1.143	0.050	-3.0	100
Anthracene	1.168	1.158	0.050	-0.8	100
Carbazole	0.741	0.785	0.050	5.9	100
Di-n-butylphthalate	1.382	1.464	0.050	5.9	100
Fluoranthene	1.244	1.308	0.050	5.1	20.0
Pyrene	1.127	1.151	0.050	2.1	100
Butylbenzylphthalate	0.563	0.561	0.050	-0.4	100
3,3'-Dichlorobenzidine	0.350	0.403	0.050	15.1	100
Benzo(a)anthracene	1.115	0.976	0.050	-12.5	100
Chrysene	0.957	0.976	0.050	2.0	100
bis(2-Ethylhexyl)phthalate	0.756	0.736	0.050	-2.6	100
Di-n-octylphthalate	2.123	2.042	0.050	-3.8	20.0
Benzo(b)fluoranthene	1.794	1.668	0.050	-7.0	100
Benzo(k)fluoranthene	1.601	1.535	0.050	-4.1	100
Benzo(a)pyrene	1.495	1.470	0.050	-1.7	20.0
Indeno(1,2,3-cd)pyrene	1.742	1.861	0.050	6.8	100
Dibenzo(a,h)anthracene	1.490	1.551	0.050	4.1	100
Benzo(g,h,i)perylene	1.369	1.465	0.050	7.0	100
1,1'-Biphenyl	1.535	1.480	0.050	-3.6	100
Acetophenone	1.677	1.761	0.050	5.0	100
Atrazine	0.235	0.239	0.050	1.7	100
Benzaldehyde	0.565	0.856	0.050	51.5	100
Caprolactum	0.085	0.100	0.050	17.6	100
Nitrobenzene-d5	0.445	0.449	0.050	0.9	100
2-Fluorobiphenyl	1.539	1.505	0.050	-2.2	100
Terphenyl-d14	0.906	0.886	0.050	-2.2	100
Phenol-d5	1.198	1.212	0.050	1.2	100
2-Fluorophenol	0.919	0.921	0.050	0.2	100
2,4,6-Tribromophenol	0.123	0.138	0.050	12.2	100
2-Chlorophenol-d4	1.211	1.232	0.050	1.7	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/10/03 Time: 1525

Lab File ID: S2D2459 Init. Calib. Date(s): 03/09/03 03/09/03

Init. Calib. Times: 2012 2331

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.927	0.942	0.050	1.6	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2555 DFTPP Injection Date: 03/13/03

Instrument ID: S2 DFTPP Injection Time: 1621

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	54.3
70	Less than 2.0% of mass 69	0.1 (0.2)1
127	40.0 - 60.0% of mass 198	43.1
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.3
365	Greater than 1.0% of mass 198	2.87
441	Present, but less than mass 443	7.4
442	40.0 - 99.9% of mass 198	53.6
443	17.0 - 23.0% of mass 442	10.6 (19.8)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502M	SS0313B	S2D2556	03/13/03	2138
02	SSTD1602M	SS0313C	S2D2557	03/13/03	2218
03	SSTD0102M	SS0313D	S2D2558	03/13/03	2258
04	SSTD1202M	SS0313E	S2D2559	03/13/03	2338
05	SSTD0202M	SS0313F	S2D2560	03/14/03	0018
06	SSTD0802M	SS0313G	S2D2561	03/14/03	0057
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 1644 0057

LAB FILE ID: RRF160=S2D2557

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 0.959					1.511	21.7*
bis(2-Chloroethyl)Ether	* 1.230					1.361	9.7*
2-Chlorophenol	* 1.227					1.329	7.7*
2-Methylphenol	* 1.060					1.161	8.7*
2,2'-oxybis(1-Chloropropane)	* 1.825					2.140	12.9*
4-Methylphenol	* 1.004					1.157	12.0*
N-Nitroso-di-n-propylamine	* 0.680					0.833	15.7*
Hexachloroethane	* 0.520					0.572	8.6*
Nitrobenzene	* 0.405					0.423	5.4*
Isophorone	* 0.620					0.650	5.5*
2-Nitrophenol	* 0.218					0.222	2.7*
2,4-Dimethylphenol	* 0.294					0.297	9.4*
2,4-Dichlorophenol	* 0.282					0.289	3.3*
Naphthalene	* 0.992					1.057	7.8*
4-Chloroaniline	* 0.168					0.302	62.7*
bis(2-Chloroethoxy)methane	* 0.438					0.462	6.2*
Hexachlorobutadiene	* 0.153					0.159	5.9*
4-Chloro-3-Methylphenol	* 0.308					0.316	3.7*
2-Methylnaphthalene	* 0.770					0.842	9.3*
Hexachlorocyclopentadiene	* 0.264					0.211	20.9*
2,4,6-Trichlorophenol	* 0.359					0.356	2.5*
2,4,5-Trichlorophenol	* 0.403					0.397	2.4*
2-Chloronaphthalene	* 1.069					1.138	5.8*
2-Nitroaniline	* 0.587					0.599	2.6*
Dimethylphthalate	* 1.398					1.421	2.8*
Acenaphthylene	* 1.814					1.923	5.2*
2,6-Dinitrotoluene	* 0.353					0.350	1.2*
3-Nitroaniline	* 0.515					0.523	3.5*
Acenaphthene	* 1.112					1.163	4.1*
2,4-Dinitrophenol	* 0.163					0.124	37.0*
4-Nitrophenol	* 0.124					0.113	10.6*
Dibenzofuran	* 1.898					2.039	7.0*
2,4-Dinitrotoluene	* 0.464					0.456	4.2*
Diethylphthalate	* 1.380					1.436	4.1*
4-Chlorophenyl-phenylether	* 0.572					0.601	5.4*
Fluorene	* 1.223					1.270	5.1*
4-Nitroaniline	* 0.496					0.515	5.0*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 1644 0057

LAB FILE ID: RRF160=S2D2557

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.174					0.155	13.9*
N-Nitrosodiphenylamine (1)	* 0.317					0.384	24.2*
4-Bromophenyl-phenylether	* 0.218					0.222	4.3*
Hexachlorobenzene	* 0.244					0.252	5.5*
Pentachlorophenol	* 0.107					0.089	25.0*
Phenanthrene	* 1.007					1.067	7.5*
Anthracene	* 1.006					1.059	11.1*
Carbazole	* 0.869					0.941	13.6*
Di-n-butylphthalate	* 1.460					1.559	8.3*
Fluoranthene	* 1.125					1.165	7.9*
Pyrene	* 1.084					1.152	7.5*
Butylbenzylphthalate	* 0.674					0.694	4.7*
3,3'-Dichlorobenzidine	0.364					0.415	13.8
Benzo(a)anthracene	* 1.024					1.056	5.8*
Chrysene	* 0.950					0.996	7.7*
bis(2-Ethylhexyl)phthalate	* 0.928					0.983	6.7*
Di-n-octylphthalate	* 2.184					2.401	6.3*
Benzo(b)fluoranthene	* 1.570					1.541	2.8*
Benzo(k)fluoranthene	* 1.337					1.473	10.2*
Benzo(a)pyrene	* 1.248					1.302	6.1*
Indeno(1,2,3-cd)pyrene	* 1.540					1.524	2.2*
Dibenzo(a,h)anthracene	* 1.262					1.257	1.7*
Benzo(g,h,i)perylene	* 1.285					1.274	2.4*
1,1'-Biphenyl	* 1.350					1.455	8.0*
Acetophenone	* 1.526					1.698	9.5*
Atrazine	* 0.078					0.142	40.2*
Benzaldehyde	* 0.668					0.855	19.7*
Caprolactum	* 0.098					0.113	17.8*
Nitrobenzene-d5	0.432					0.447	4.2*
2-Fluorobiphenyl	* 1.288					1.354	4.9*
Terphenyl-d14	* 0.804					0.838	7.1*
Phenol-d5	* 1.315					1.551	10.6*
2-Fluorophenol	* 1.235					1.277	4.7*
2,4,6-Tribromophenol	* 0.122					0.118	2.4*
2-Chlorophenol-d4	* 1.244					1.338	7.4*
1,2-Dichlorobenzene-d4	* 0.795					0.872	8.8*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2563 DFTPP Injection Date: 03/14/03

Instrument ID: S2 DFTPP Injection Time: 0211

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.0
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	66.8
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	50.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	20.7
365	Greater than 1.0% of mass 198	2.41
441	Present, but less than mass 443	10.2
442	40.0 - 99.9% of mass 198	60.2
443	17.0 - 23.0% of mass 442	11.4 (19.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502N	SS0314A	S2D2564	03/14/03	0228
02	SBLK2S	MB-5821	S2D2565	03/14/03	0307
03	SV1221012	B0262-05A	S2D2566	03/14/03	0347
04	SV1240203	B0262-10A	S2D2567	03/14/03	0426
05	S2SLCS	LCS-5821	S2D2569	03/14/03	0545
06	WOD-SS-121	B0262-02A	S2D2577	03/14/03	1104
07	WOD-SS-124	B0262-09A	S2D2578	03/14/03	1144
08	WOD-SS-122	B0262-04A	S2D2579	03/14/03	1224
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/14/03 Time: 0228

Lab File ID: S2D2564 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 1644 0057

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.511	1.763	0.050	16.7	20.0
bis(2-Chloroethyl)Ether	1.361	1.460	0.050	7.3	100
2-Chlorophenol	1.329	1.401	0.050	5.4	100
2-Methylphenol	1.161	1.216	0.050	4.7	100
2,2'-oxybis(1-Chloropropane)	2.140	2.358	0.050	10.2	100
4-Methylphenol	1.157	1.255	0.050	8.5	100
N-Nitroso-di-n-propylamine	0.833	0.947	0.050	13.7	100
Hexachloroethane	0.572	0.598	0.050	4.5	100
Nitrobenzene	0.423	0.453	0.050	7.1	100
Isophorone	0.650	0.674	0.050	3.7	100
2-Nitrophenol	0.222	0.236	0.050	6.3	20.0
2,4-Dimethylphenol	0.297	0.284	0.050	-4.4	100
2,4-Dichlorophenol	0.289	0.298	0.050	3.1	20.0
Naphthalene	1.057	1.102	0.050	4.2	100
4-Chloroaniline	0.302	0.263	0.050	-12.9	100
bis(2-Chloroethoxy)methane	0.462	0.488	0.050	5.6	100
Hexachlorobutadiene	0.159	0.163	0.050	2.5	20.0
4-Chloro-3-Methylphenol	0.316	0.323	0.050	2.2	20.0
2-Methylnaphthalene	0.842	0.874	0.050	3.8	100
Hexachlorocyclopentadiene	0.211	0.215	0.050	1.9	100
2,4,6-Trichlorophenol	0.356	0.356	0.050	0.0	100
2,4,5-Trichlorophenol	0.397	0.401	0.050	1.0	100
2-Chloronaphthalene	1.138	1.176	0.050	3.3	100
2-Nitroaniline	0.599	0.599	0.050	0.0	100
Dimethylphthalate	1.421	1.424	0.050	0.2	100
Acenaphthylene	1.923	1.968	0.050	2.3	100
2,6-Dinitrotoluene	0.350	0.366	0.050	4.6	100
3-Nitroaniline	0.523	0.550	0.050	5.2	100
Acenaphthene	1.163	1.192	0.050	2.5	20.0
2,4-Dinitrophenol	0.124	0.131	0.050	5.6	100
4-Nitrophenol	0.113	0.116	0.050	2.6	100
Dibenzofuran	2.039	2.082	0.050	2.1	100
2,4-Dinitrotoluene	0.456	0.484	0.050	6.1	100
Diethylphthalate	1.436	1.477	0.050	2.8	100
4-Chlorophenyl-phenylether	0.601	0.613	0.050	2.0	100
Fluorene	1.270	1.294	0.050	1.9	100
4-Nitroaniline	0.515	0.501	0.050	-2.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/14/03 Time: 0228

Lab File ID: S2D2564 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 1644 0057

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.155	0.161	0.050	3.9	100
N-Nitrosodiphenylamine(1)	0.384	0.388	0.050	1.0	20.0
4-Bromophenyl-phenylether	0.222	0.226	0.050	1.8	100
Hexachlorobenzene	0.252	0.248	0.050	-1.6	100
Pentachlorophenol	0.089	0.088	0.050	-1.1	20.0
Phenanthrene	1.067	1.100	0.050	3.1	100
Anthracene	1.059	1.055	0.050	-0.4	100
Carbazole	0.941	0.942	0.050	0.1	100
Di-n-butylphthalate	1.559	1.611	0.050	3.3	100
Fluoranthene	1.165	1.187	0.050	1.9	20.0
Pyrene	1.152	1.186	0.050	3.0	100
Butylbenzylphthalate	0.694	0.724	0.050	4.3	100
3,3'-Dichlorobenzidine	0.415	0.432	0.050	4.1	100
Benzo(a)anthracene	1.056	1.087	0.050	2.9	100
Chrysene	0.996	1.009	0.050	1.3	100
bis(2-Ethylhexyl)phthalate	0.983	1.025	0.050	4.3	100
Di-n-octylphthalate	2.401	2.529	0.050	5.3	20.0
Benzo(b)fluoranthene	1.541	1.525	0.050	-1.0	100
Benzo(k)fluoranthene	1.473	1.598	0.050	8.5	100
Benzo(a)pyrene	1.302	1.331	0.050	2.2	20.0
Indeno(1,2,3-cd)pyrene	1.524	1.562	0.050	2.5	100
Dibenzo(a,h)anthracene	1.257	1.297	0.050	3.2	100
Benzo(g,h,i)perylene	1.274	1.300	0.050	2.0	100
1,1'-Biphenyl	1.455	1.512	0.050	3.9	100
Acetophenone	1.698	1.814	0.050	6.8	100
Atrazine	0.142	0.157	0.050	10.6	100
Benzaldehyde	0.855	1.127	0.050	31.8	100
Caprolactum	0.113	0.132	0.050	16.8	100
Nitrobenzene-d5	0.447	0.468	0.050	4.7	100
2-Fluorobiphenyl	1.354	1.375	0.050	1.6	100
Terphenyl-d14	0.838	0.857	0.050	2.3	100
Phenol-d5	1.551	1.674	0.050	7.9	100
2-Fluorophenol	1.277	1.284	0.050	0.5	100
2,4,6-Tribromophenol	0.118	0.118	0.050	0.0	100
2-Chlorophenol-d4	1.338	1.391	0.050	4.0	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date: 03/14/03 Time: 0228

Lab File ID: S2D2564 Init. Calib. Date(s): 03/13/03 03/14/03

Init. Calib. Times: 1644 0057

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.872	0.918	0.050	5.3	100

All other compounds must meet a minimum RRF of 0.010.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID (Standard): S2D2441 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 0101

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	124632	7.41	414966	9.81	264964	13.30
	UPPER LIMIT	249264	7.91	829932	10.31	529928	13.80
	LOWER LIMIT	62316	6.91	207483	9.31	132482	12.80
	EPA SAMPLE NO.						
01	WOD-SS-125	129957	7.41	424114	9.80	281161	13.30
02	SV1250203	153677	7.41	499205	9.80	323764	13.30
03	WOD-SS-123	152623	7.41	486974	9.80	300804	13.30
04							
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID (Standard): S2D2441 Date Analyzed: 03/10/03

Instrument ID: S2 Time Analyzed: 0101

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	453486	16.30	486063	21.68	308170	24.36
	UPPER LIMIT	906972	16.80	972126	22.18	616340	24.86
	LOWER LIMIT	226743	15.80	243032	21.18	154085	23.86
	EPA SAMPLE NO.						
01	WOD-SS-125	454797	16.30	461291	21.67	233591	24.36
02	SV1250203	528712	16.30	469210	21.67	217633	24.35
03	WOD-SS-123	434664	16.30	381127	21.68	141042*	24.38
04							
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21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: MB-5678

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2293

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: MB-5678

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2293

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLK3P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: MB-5678

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2293

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/18/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: MB-5821

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2565

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: MB-5821

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2565

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U
92-52-4	1,1'-Biphenyl	330	U
98-86-2	Acetophenone	330	U
1912-24-9	Atrazine	330	U
100-52-7	Benzaldehyde	330	U
105-60-2	Caprolactum	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: MB-5821

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2565

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	900	0.0	600	67	45-109
bis(2-Chloroethyl)Ether	900	0.0	490	54	43-104
2-Chlorophenol	900	0.0	580	64	43-107
2-Methylphenol	900	0.0	550	61	45-108
2,2'-oxybis(1-Chloropro	900	0.0	550	61	41-105
4-Methylphenol	900	0.0	520	58	48-109
N-Nitroso-di-n-prop.(1)	900	0.0	580	64	44-111
Hexachloroethane	900	0.0	540	60	40-102
Nitrobenzene	900	0.0	570	63	44-108
Isophorone	900	0.0	730	81	42-113
2-Nitrophenol	900	0.0	550	61	42-111
2,4-Dimethylphenol	900	0.0	480	53	37-107
2,4-Dichlorophenol	900	0.0	570	63	49-110
Naphthalene	900	0.0	520	58	44-112
4-Chloroaniline	900	0.0	370	41	4-102
bis(2-Chloroethoxy)meth	900	0.0	560	62	46-108
Hexachlorobutadiene	900	0.0	560	62	41-108
4-Chloro-3-Methylphenol	900	0.0	640	71	56-117
2-Methylnaphthalene	900	0.0	390	43*	46-110
Hexachlorocyclopentadie	900	0.0	290	32	10-118
2,4,6-Trichlorophenol	900	0.0	610	68	53-115
2,4,5-Trichlorophenol	900	0.0	560	62	59-113
2-Chloronaphthalene	900	0.0	580	64	52-112
2-Nitroaniline	900	0.0	510	57*	63-117
Dimethylphthalate	900	0.0	660	73	62-117
Acenaphthylene	900	0.0	590	66	58-112
2,6-Dinitrotoluene	900	0.0	650	72	60-118
3-Nitroaniline	900	0.0	470	52	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	900	0.0	580	64	53-116
2,4-Dinitrophenol	900	0.0	120	13*	25-136
4-Nitrophenol	900	0.0	580	64	50-129
Dibenzofuran	900	0.0	440	49*	81-112
2,4-Dinitrotoluene	900	0.0	700	78	59-123
Diethylphthalate	900	0.0	680	76	61-120
4-Chlorophenyl-phenylet	900	0.0	640	71	59-116
Fluorene	900	0.0	590	66	63-115
4-Nitroaniline	900	0.0	770	86	35-124
4,6-Dinitro-2-methylphe	900	0.0	440	49	33-130
N-Nitrosodiphenylamine	900	0.0	690	77	50-150
4-Bromophenyl-phenyleth	900	0.0	580	64*	86-110
Hexachlorobenzene	900	0.0	590	66*	67-112
Pentachlorophenol	900	0.0	300	33	19-130
Phenanthrene	900	0.0	570	63*	70-115
Anthracene	900	0.0	580	64	63-117
Carbazole	900	0.0	770	86	62-122
Di-n-butylphthalate	900	0.0	640	71	70-120
Fluoranthene	900	0.0	620	69	64-121
Pyrene	900	0.0	630	70	66-120
Butylbenzylphthalate	900	0.0	650	72	63-123
3,3'-Dichlorobenzidine	900	0.0	530	59	8-124
Benzo(a)anthracene	900	0.0	610	68	50-129
Chrysene	900	0.0	610	68	41-150
bis(2-Ethylhexyl)phthal	900	0.0	610	68	64-115
Di-n-octylphthalate	900	0.0	540	60*	89-137
Benzo(b)fluoranthene	900	0.0	550	61	61-129
Benzo(k)fluoranthene	900	0.0	600	67	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	900	0.0	550	61*	66-119
Indeno(1,2,3-cd)pyrene	900	0.0	590	66	56-128
Dibenzo(a,h)anthracene	900	0.0	570	63	58-128
Benzo(g,h,i)perylene	900	0.0	590	66	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	900	610	68	1	40	45-109
bis(2-Chloroethyl)Ether	900	490	54	0	40	43-104
2-Chlorophenol	900	580	64	0	40	43-107
2-Methylphenol	900	560	62	2	40	45-108
2,2'-oxybis(1-Chloropro	900	560	62	2	40	41-105
4-Methylphenol	900	540	60	3	40	48-109
N-Nitroso-di-n-prop.(1)	900	580	64	0	40	44-111
Hexachloroethane	900	560	62	3	40	40-102
Nitrobenzene	900	560	62	2	40	44-108
Isophorone	900	730	81	0	40	42-113
2-Nitrophenol	900	550	61	0	40	42-111
2,4-Dimethylphenol	900	480	53	0	40	37-107
2,4-Dichlorophenol	900	530	59	6	40	49-110
Naphthalene	900	520	58	0	40	44-112
4-Chloroaniline	900	330	37	10	40	4-102
bis(2-Chloroethoxy)meth	900	560	62	0	40	46-108
Hexachlorobutadiene	900	580	64	3	40	41-108
4-Chloro-3-Methylphenol	900	620	69	3	40	56-117
2-Methylnaphthalene	900	410	46	7	40	46-110
Hexachlorocyclopentadie	900	310	34	6	40	10-118
2,4,6-Trichlorophenol	900	580	64	6	40	53-115
2,4,5-Trichlorophenol	900	530	59	5	40	59-113
2-Chloronaphthalene	900	580	64	0	40	52-112
2-Nitroaniline	900	470	52*	9	40	63-117
Dimethylphthalate	900	620	69	6	40	62-117
Acenaphthylene	900	580	64	3	40	58-112
2,6-Dinitrotoluene	900	650	72	0	40	60-118
3-Nitroaniline	900	440	49	6	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	900	560	62	3	40	53-116
2,4-Dinitrophenol	900	130	14*	7	40	15-136
4-Nitrophenol	900	640	71	10	40	50-129
Dibenzofuran	900	440	49*	0	40	61-112
2,4-Dinitrotoluene	900	650	72	8	40	59-123
Diethylphthalate	900	640	71	7	40	61-120
4-Chlorophenyl-phenylet	900	600	67	6	40	59-116
Fluorene	900	580	64	3	40	63-115
4-Nitroaniline	900	760	84	2	40	35-124
4,6-Dinitro-2-methylphe	900	380	42	15	40	33-130
N-Nitrosodiphenylamine	900	660	73	5	40	50-150
4-Bromophenyl-phenyleth	900	560	62*	3	40	66-110
Hexachlorobenzene	900	580	64*	3	40	67-112
Pentachlorophenol	900	260	29	13	40	19-130
Phenanthrene	900	550	61*	3	40	70-115
Anthracene	900	530	59*	8	40	63-117
Carbazole	900	750	83	4	40	62-122
Di-n-butylphthalate	900	600	67*	6	40	70-120
Fluoranthene	900	580	64	8	40	64-121
Pyrene	900	600	67	4	40	66-120
Butylbenzylphthalate	900	610	68	6	40	63-123
3,3'-Dichlorobenzidine	900	510	57	3	40	8-124
Benzo(a)anthracene	900	580	64	6	40	50-129
Chrysene	900	600	67	1	40	41-150
bis(2-Ethylhexyl)phthal	900	570	63*	8	40	64-115
Di-n-octylphthalate	900	510	57*	5	40	69-137
Benzo(b)fluoranthene	900	510	57*	7	40	61-129
Benzo(k)fluoranthene	900	560	62	8	40	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - EPA Sample No.: SV1231012 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzo(a)pyrene	900	520	58*	5	40	66-119
Indeno(1,2,3-cd)pyrene	900	550	61	8	40	56-128
Dibenzo(a,h)anthracene	900	530	59	6	40	58-128
Benzo(g,h,i)perylene	900	550	61	8	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 60 outside limits
Spike Recovery: 21 out of 120 outside limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S2SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		980	118*	45-109
bis(2-Chloroethyl)Ether	830		810	98	43-104
2-Chlorophenol	830		830	100	43-107
2-Methylphenol	830		830	100	45-108
2,2'-oxybis(1-Chloropro	830		870	105	41-105
4-Methylphenol	830		880	106	48-109
N-Nitroso-di-n-prop.(1)	830		930	112*	44-111
Hexachloroethane	830		770	93	40-102
Nitrobenzene	830		810	98	44-108
Isophorone	830		1000	120*	42-113
2-Nitrophenol	830		780	94	42-111
2,4-Dimethylphenol	830		480	58	37-107
2,4-Dichlorophenol	830		780	94	49-110
Naphthalene	830		810	98	44-112
4-Chloroaniline	830		700	84	4-102
bis(2-Chloroethoxy)meth	830		860	104	46-108
Hexachlorobutadiene	830		770	93	41-108
4-Chloro-3-Methylphenol	830		830	100	56-117
2-Methylnaphthalene	830		650	78	46-110
Hexachlorocyclopentadie	830		360	43	10-118
2,4,6-Trichlorophenol	830		780	94	53-115
2,4,5-Trichlorophenol	830		750	90	59-113
2-Chloronaphthalene	830		850	102	52-112
2-Nitroaniline	830		650	78	63-117
Dimethylphthalate	830		810	98	62-117
Acenaphthylene	830		780	94	58-112
2,6-Dinitrotoluene	830		850	102	60-118
3-Nitroaniline	830		480	58	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S2SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		820	99	53-116
2,4-Dinitrophenol	830		400	48	15-136
4-Nitrophenol	830		740	89	50-129
Dibenzofuran	830		650	78	61-112
2,4-Dinitrotoluene	830		840	101	59-123
Diethylphthalate	830		860	104	61-120
4-Chlorophenyl-phenylet	830		830	100	59-116
Fluorene	830		820	99	63-115
4-Nitroaniline	830		600	72	35-124
4,6-Dinitro-2-methylphe	830		560	67	33-130
N-Nitrosodiphenylamine	830		1200	144	50-150
4-Bromophenyl-phenyleth	830		840	101	66-110
Hexachlorobenzene	830		800	96	67-112
Pentachlorophenol	830		530	64	19-130
Phenanthrene	830		850	102	70-115
Anthracene	830		870	105	63-117
Carbazole	830		940	113	62-122
Di-n-butylphthalate	830		880	106	70-120
Fluoranthene	830		850	102	64-121
Pyrene	830		890	107	66-120
Butylbenzylphthalate	830		890	107	63-123
3,3'-Dichlorobenzidine	830		530	64	8-124
Benzo(a)anthracene	830		880	106	50-129
Chrysene	830		880	106	41-150
bis(2-Ethylhexyl)phthal	830		890	107	64-115
Di-n-octylphthalate	830		860	104	69-137
Benzo(b)fluoranthene	830		820	99	61-129
Benzo(k)fluoranthene	830		900	108	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S2SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	830		840	101	66-119
Indeno(1,2,3-cd)pyrene	830		810	98	56-128
Dibenzo(a,h)anthracene	830		820	99	58-128
Benzo(g,h,i)perylene	830		800	96	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 60 outside limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	50		20	40	0-127
bis(2-Chloroethyl)Ether	50		42	84	46-109
2-Chlorophenol	50		40	80	22-117
2-Methylphenol	50		34	68	40-104
2,2'-oxybis(1-Chloropro	50		42	84	10-134
4-Methylphenol	50		35	70	35-106
N-Nitroso-di-n-prop.(1)	50		48	96	44-122
Hexachloroethane	50		40	80	24-104
Nitrobenzene	50		44	88	47-112
Isophorone	50		59	118	48-118
2-Nitrophenol	50		42	84	29-122
2,4-Dimethylphenol	50		18	36	14-109
2,4-Dichlorophenol	50		40	80	31-122
Naphthalene	50		40	80	38-117
4-Chloroaniline	50		19	38	0-152
bis(2-Chloroethoxy)meth	50		46	92	49-112
Hexachlorobutadiene	50		38	76	28-109
4-Chloro-3-Methylphenol	50		45	90	48-117
2-Methylnaphthalene	50		31	62	43-113
Hexachlorocyclopentadie	50		42	84	34-103
2,4,6-Trichlorophenol	50		45	90	34-127
2,4,5-Trichlorophenol	50		44	88	32-131
2-Chloronaphthalene	50		44	88	47-116
2-Nitroaniline	50		38	76	51-120
Dimethylphthalate	50		48	96	53-124
Acenaphthylene	50		47	94	50-119
2,6-Dinitrotoluene	50		49	98	52-122
3-Nitroaniline	50		53	106	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	50		46	92	50-121
2,4-Dinitrophenol	50		43	86	0-144
4-Nitrophenol	50		23	46	0-160
Dibenzofuran	50		35	70	51-122
2,4-Dinitrotoluene	50		48	96	52-126
Diethylphthalate	50		51	102	53-126
4-Chlorophenyl-phenylet	50		52	104	50-124
Fluorene	50		48	96	52-125
4-Nitroaniline	50		57	114	47-117
4,6-Dinitro-2-methylphe	50		45	90	3-151
N-Nitrosodiphenylamine	50		73	146	50-150
4-Bromophenyl-phenyleth	50		48	96	51-124
Hexachlorobenzene	50		47	94	52-124
Pentachlorophenol	50		44	88	5-125
Phenanthrene	50		48	96	52-128
Anthracene	50		48	96	52-127
Di-n-butylphthalate	50		52	104	56-132
Fluoranthene	50		49	98	53-130
Pyrene	50		50	100	53-131
Butylbenzylphthalate	50		52	104	54-128
3,3'-Dichlorobenzidine	50		46	92	41-117
Benzo(a)anthracene	50		50	100	56-124
Chrysene	50		53	106	53-123
bis(2-Ethylhexyl)phthal	50		54	108	56-127
Di-n-octylphthalate	50		45	90	59-138
Benzo(b)fluoranthene	50		48	96	58-126
Benzo(k)fluoranthene	50		49	98	60-124
Benzo(a)pyrene	50		48	96	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	50		49	98	23-152
Dibenzo(a,h)anthracene	50		49	98	60-122
Benzo(g,h,i)perylene	50		48	96	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	50	20	40	0	40	0-127
bis(2-Chloroethyl)Ether	50	42	84	0	40	46-109
2-Chlorophenol	50	40	80	0	40	22-117
2-Methylphenol	50	34	68	0	40	40-104
2,2'-oxybis(1-Chloropro	50	42	84	0	40	10-134
4-Methylphenol	50	35	70	0	40	35-106
N-Nitroso-di-n-prop.(1)	50	48	96	0	40	44-122
Hexachloroethane	50	38	76	5	40	24-104
Nitrobenzene	50	43	86	2	40	47-112
Isophorone	50	59	118	0	40	48-118
2-Nitrophenol	50	42	84	0	40	29-122
2,4-Dimethylphenol	50	19	38	5	40	14-109
2,4-Dichlorophenol	50	40	80	0	40	31-122
Naphthalene	50	39	78	2	40	38-117
4-Chloroaniline	50	18	36	5	40	0-152
bis(2-Chloroethoxy)meth	50	46	92	0	40	49-112
Hexachlorobutadiene	50	37	74	3	40	28-109
4-Chloro-3-Methylphenol	50	46	92	2	40	48-117
2-Methylnaphthalene	50	31	62	0	40	43-113
Hexachlorocyclopentadie	50	41	82	2	40	34-103
2,4,6-Trichlorophenol	50	45	90	0	40	34-127
2,4,5-Trichlorophenol	50	43	86	2	40	32-131
2-Chloronaphthalene	50	44	88	0	40	47-116
2-Nitroaniline	50	38	76	0	40	51-120
Dimethylphthalate	50	49	98	2	40	53-124
Acenaphthylene	50	46	92	2	40	50-119
2,6-Dinitrotoluene	50	51	102	4	40	52-122
3-Nitroaniline	50	57	114	7	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	50	46	92	0	40	50-121
2,4-Dinitrophenol	50	45	90	4	40	0-144
4-Nitrophenol	50	23	46	0	40	0-160
Dibenzofuran	50	35	70	0	40	51-122
2,4-Dinitrotoluene	50	49	98	2	40	52-126
Diethylphthalate	50	52	104	2	40	53-126
4-Chlorophenyl-phenylet	50	52	104	0	40	50-124
Fluorene	50	49	98	2	40	52-125
4-Nitroaniline	50	59	118*	3	40	47-117
4,6-Dinitro-2-methylphe	50	47	94	4	40	3-151
N-Nitrosodiphenylamine	50	71	142	3	40	50-150
4-Bromophenyl-phenyleth	50	48	96	0	40	51-124
Hexachlorobenzene	50	48	96	2	40	52-124
Pentachlorophenol	50	45	90	2	40	5-125
Phenanthrene	50	48	96	0	40	52-128
Anthracene	50	49	98	2	40	52-127
Di-n-butylphthalate	50	53	106	2	40	56-132
Fluoranthene	50	49	98	0	40	53-130
Pyrene	50	52	104	4	40	53-131
Butylbenzylphthalate	50	53	106	2	40	54-128
3,3'-Dichlorobenzidine	50	51	102	10	40	41-117
Benzo(a)anthracene	50	52	104	4	40	56-124
Chrysene	50	54	108	2	40	53-123
bis(2-Ethylhexyl)phthal	50	56	112	4	40	56-127
Di-n-octylphthalate	50	47	94	4	40	59-138
Benzo(b)fluoranthene	50	49	98	2	40	58-126
Benzo(k)fluoranthene	50	51	102	4	40	60-124
Benzo(a)pyrene	50	49	98	2	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix Spike - Sample No.: S3PLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	50	48	96	2	40	23-152
Dibenzo(a,h)anthracene	50	48	96	2	40	60-122
Benzo(g,h,i)perylene	50	47	94	2	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 59 outside limits
Spike Recovery: 1 out of 118 outside limits

COMMENTS: _____

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab File ID: S2D2565 Lab Sample ID: MB-5821

Instrument ID: S2 Date Extracted: 02/27/03

Matrix: (soil/water) SOIL Date Analyzed: 03/14/03

Level: (low/med) LOW Time Analyzed: 0307

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	WOD-SS-125	B0262-11A	S2D2452	03/10/03
02	SV1250203	B0262-12A	S2D2453	03/10/03
03	WOD-SS-123	B0262-07A	S2D2454	03/10/03
04	SV1211012	B0262-03A	S2D2469	03/10/03
05	SVDUP07	B0262-06A	S2D2470	03/10/03
06	SV1231012	B0262-08A	S2D2471	03/10/03
07	SV1231012MS	B0262-08AMS	S2D2472	03/11/03
08	SV1231012MSD	B0262-08AMSD	S2D2473	03/11/03
09	SV1221012	B0262-05A	S2D2566	03/14/03
10	SV1240203	B0262-10A	S2D2567	03/14/03
11	S2SLCS	LCS-5821	S2D2569	03/14/03
12	WOD-SS-121	B0262-02A	S2D2577	03/14/03
13	WOD-SS-124	B0262-09A	S2D2578	03/14/03
14	WOD-SS-122	B0262-04A	S2D2579	03/14/03
15				
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28				
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30				

COMMENTS:

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT		JOB NUMBER	
NASA WALLOPS ISLAND			
SUBJECT			
8270			
BASED ON		DRAWING NUMBER	
BY	CHECKED BY	APPROVED BY	DATE
LWS			

WOD-55-123

Benzo(a)pyrene = 550 ug/kg

$$\frac{14.919 \times 40 ng \times 5{,}000 ml}{141042 \times 1.495 sf \times 30.1 g \times 0.86\ \%\text{solid}} = 546 ug/kg$$

Data File: S2D2454.D
Report Date: 20-Mar-2003 10:40

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
82 Benzo(a)pyrene	252	24.183	24.271	(0.992)	14919	2.82950	550(a)
* 83 Perylene-d12	264	24.378	24.357	(1.000)	141042	40.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

JC
3-20-03

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: B0262-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2454

Level: (low/med) LOW Date Received: 02/14/03

% Moisture: 14 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1900	U
7005-72-3	4-Chlorophenyl-phenylether	1900	U
86-73-7	Fluorene	1900	U
100-01-6	4-Nitroaniline	4800	U
534-52-1	4,6-Dinitro-2-methylphenol	4800	U
86-30-6	N-Nitrosodiphenylamine (1)	1900	U
101-55-3	4-Bromophenyl-phenylether	1900	U
118-74-1	Hexachlorobenzene	1900	U
87-86-5	Pentachlorophenol	4800	U
85-01-8	Phenanthrene	1900	U
120-12-7	Anthracene	1900	U
86-74-8	Carbazole	1900	U
84-74-2	Di-n-butylphthalate	1900	U
206-44-0	Fluoranthene	1900	U
129-00-0	Pyrene	1900	U
85-68-7	Butylbenzylphthalate	1900	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)anthracene	1900	U
218-01-9	Chrysene	1900	U
117-81-7	bis(2-Ethylhexyl)phthalate	1900	U
117-84-0	Di-n-octylphthalate	1900	U
205-99-2	Benzo(b)fluoranthene	1900	U
207-08-9	Benzo(k)fluoranthene	1900	U
50-32-8	Benzo(a)pyrene	550	J
193-39-5	Indeno(1,2,3-cd)pyrene	1900	U
53-70-3	Dibenzo(a,h)anthracene	1900	U
191-24-2	Benzo(g,h,i)perylene	1900	U
92-52-4	1,1'-Biphenyl	1900	U
98-86-2	Acetophenone	1900	U
1912-24-9	Atrazine	1900	U
100-52-7	Benzaldehyde	1900	U
105-60-2	Caprolactum	1900	U

(1) - Cannot be separated from Diphenylamine

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: S2 Calibration Date(s): 03/09/03 03/09/03

Calibration Time(s): 2012 2331

LAB FILE ID: RRF160=S2D2434

COMPOUND	RRF160					$\overline{RRF}$	%RSD
4,6-Dinitro-2-methylphenol	* 0.199					0.177	11.4*
N-Nitrosodiphenylamine (1)	* 0.528					0.495	4.3*
4-Bromophenyl-phenylether	* 0.273					0.253	5.7*
Hexachlorobenzene	* 0.310					0.293	3.6*
Pentachlorophenol	* 0.128					0.097	26.1*
Phenanthrene	* 1.303					1.179	7.4*
Anthracene	* 1.269					1.168	6.5*
Carbazole	* 0.746					0.741	8.5*
Di-n-butylphthalate	* 1.495					1.382	5.3*
Fluoranthene	* 1.375					1.244	7.1*
Pyrene	* 1.156					1.127	2.5*
Butylbenzylphthalate	* 0.584					0.563	2.5*
3,3'-Dichlorobenzidine	0.319					0.350	12.3
Benzo(a)anthracene	* 1.155					1.115	3.1*
Chrysene	* 0.983					0.957	1.7*
bis(2-Ethylhexyl)phthalate	* 0.816					0.756	5.6*
Di-n-octylphthalate	* 2.414					2.123	10.4*
Benzo(b)fluoranthene	* 2.163					1.794	12.7*
Benzo(k)fluoranthene	* 1.693					1.601	5.6*
Benzo(a)pyrene	* 1.614					1.495	7.2*
Indeno(1,2,3-cd)pyrene	* 1.873					1.742	7.0*
Dibenzo(a,h)anthracene	* 1.629					1.490	8.3*
Benzo(g,h,i)perylene	* 1.443					1.369	5.7*
1,1'-Biphenyl	* 1.666					1.535	7.0*
Acetophenone	* 1.713					1.677	3.4*
Atrazine	* 0.234					0.235	2.9*
Benzaldehyde	* 0.428					0.565	15.6*
Caprolactum	* 0.082					0.085	8.8*
Nitrobenzene-d5	0.464					0.445	4.2*
2-Fluorobiphenyl	* 1.648					1.539	5.0*
Terphenyl-d14	* 0.927					0.906	2.7*
Phenol-d5	* 1.238					1.198	4.4*
2-Fluorophenol	* 0.958					0.919	5.7*
2,4,6-Tribromophenol	* 0.130					0.123	4.1*
2-Chlorophenol-d4	* 1.259					1.211	3.8*
1,2-Dichlorobenzene-d4	* 0.964					0.927	2.6*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1F

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) SOIL Lab Sample ID: MB-5820

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9587F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 4
PCB METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

BBLK1L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Lab Sample ID: MB-5680 Lab File ID: E1D9441F

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) Y Date Extracted: 02/18/03

Date Analyzed (1): 02/23/03 Date Analyzed (2): 02/23/03

Time Analyzed (1): 0352 Time Analyzed (2): 0352

Instrument ID (1): E1 Instrument ID (2): E1

GC Column (1): RTXCLPPEST 2 ID: 0.53(mm) GC Column (2): RTXCLPPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	B1LLCS	LCS-5680	02/23/03	02/23/03
02	B1LLCSD	LCSD-5680	02/23/03	02/23/03
03	RB-021303	B0262-13D	02/23/03	02/23/03
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
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18				
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21				
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23				
24				
25				
26				

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix: (soil/water) WATER Lab Sample ID: MB-5680

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9441F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/18/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/23/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11582.000	0.01	2.9	15.0
(2)	24115.960	23131.000	0.01	4.1	15.0
(3)	14202.320	13615.000	0.01	4.1	15.0
Aroclor-1260	29455.240	28477.000	0.01	3.3	15.0
(2)	40190.280	43668.000	0.01	8.6	15.0
(3)	23147.960	23315.000	0.01	0.7	15.0
Tetrachloro-m-xylene	503358.00	515350.00	0.01	2.4	15.0
Decachlorobiphenyl	581298.00	566950.00	0.01	2.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 02/23/03 Time: 0242

Lab File ID: E1D9439R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45838.000	0.01	2.4	15.0
(2)	24183.600	23075.000	0.01	4.6	15.0
(3)	20737.640	20030.000	0.01	3.4	15.0
Aroclor-1260	45409.320	45242.000	0.01	0.4	15.0
(2)	46248.440	46834.000	0.01	1.3	15.0
(3)	64584.960	69479.000	0.01	7.6	15.0
Tetrachloro-m-xylene	741526.00	731650.00	0.01	1.3	15.0
Decachlorobiphenyl	711418.00	760550.00	0.01	6.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11618.000	0.01	2.6	15.0
(2)	24115.960	22936.000	0.01	4.9	15.0
(3)	14202.320	13450.000	0.01	5.3	15.0
Aroclor-1260	29455.240	28739.000	0.01	2.4	15.0
(2)	40190.280	43187.000	0.01	7.4	15.0
(3)	23147.960	23193.000	0.01	0.2	15.0
Tetrachloro-m-xylene	503358.00	516500.00	0.01	2.6	15.0
Decachlorobiphenyl	581298.00	564750.00	0.01	2.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 02/23/03 Time: 1131

Lab File ID: E1D9454R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	45717.000	0.01	2.6	15.0
(2)	24183.600	23000.000	0.01	4.9	15.0
(3)	20737.640	20262.000	0.01	2.3	15.0
Aroclor-1260	45409.320	44843.000	0.01	1.2	15.0
(2)	46248.440	46669.000	0.01	0.9	15.0
(3)	64584.960	69305.000	0.01	7.3	15.0
Tetrachloro-m-xylene	741526.00	740050.00	0.01	0.2	15.0
Decachlorobiphenyl	711418.00	766150.00	0.01	7.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/03/03 Time: 1235

Lab File ID: E1D9585F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11003.000	0.01	7.8	15.0
(2)	24115.960	20694.000	0.01	14.2	15.0
(3)	14202.320	12195.000	0.01	14.1	15.0
Aroclor-1260	29455.240	26233.000	0.01	10.9	15.0
(2)	40190.280	40235.000	0.01	0.1	15.0
(3)	23147.960	20910.000	0.01	9.7	15.0
Tetrachloro-m-xylene	503358.00	486950.00	0.01	3.2	15.0
Decachlorobiphenyl	581298.00	524950.00	0.01	9.7	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/03/03 Time: 1235

Lab File ID: E1D9585R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43267.000	0.01	7.9	15.0
(2)	24183.600	21857.000	0.01	9.6	15.0
(3)	20737.640	19308.000	0.01	6.9	15.0
Aroclor-1260	45409.320	43424.000	0.01	4.4	15.0
(2)	46248.440	44290.000	0.01	4.2	15.0
(3)	64584.960	65583.000	0.01	1.5	15.0
Tetrachloro-m-xylene	741526.00	710300.00	0.01	4.2	15.0
Decachlorobiphenyl	711418.00	686700.00	0.01	3.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11134.000	0.01	6.7	15.0
(2)	24115.960	21559.000	0.01	10.6	15.0
(3)	14202.320	12700.000	0.01	10.6	15.0
Aroclor-1260	29455.240	27101.000	0.01	8.0	15.0
(2)	40190.280	41223.000	0.01	2.6	15.0
(3)	23147.960	21874.000	0.01	5.5	15.0
Tetrachloro-m-xylene	503358.00	485050.00	0.01	3.6	15.0
Decachlorobiphenyl	581298.00	532600.00	0.01	8.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43868.000	0.01	6.6	15.0
(2)	24183.600	22133.000	0.01	8.5	15.0
(3)	20737.640	19515.000	0.01	5.9	15.0
Aroclor-1260	45409.320	43643.000	0.01	3.9	15.0
(2)	46248.440	44244.000	0.01	4.3	15.0
(3)	64584.960	66421.000	0.01	2.8	15.0
Tetrachloro-m-xylene	741526.00	715600.00	0.01	3.5	15.0
Decachlorobiphenyl	711418.00	717500.00	0.01	0.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11226.000	0.01	5.9	15.0
(2)	24115.960	22229.000	0.01	7.8	15.0
(3)	14202.320	12983.000	0.01	8.6	15.0
Aroclor-1260	29455.240	27725.000	0.01	5.9	15.0
(2)	40190.280	42546.000	0.01	5.9	15.0
(3)	23147.960	22817.000	0.01	1.4	15.0
Tetrachloro-m-xylene	503358.00	489150.00	0.01	2.8	15.0
Decachlorobiphenyl	581298.00	540150.00	0.01	7.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44591.000	0.01	5.0	15.0
(2)	24183.600	22512.000	0.01	6.9	15.0
(3)	20737.640	19933.000	0.01	3.9	15.0
Aroclor-1260	45409.320	44767.000	0.01	1.4	15.0
(2)	46248.440	46068.000	0.01	0.4	15.0
(3)	64584.960	67661.000	0.01	4.8	15.0
Tetrachloro-m-xylene	741526.00	723800.00	0.01	2.4	15.0
Decachlorobiphenyl	711418.00	721600.00	0.01	1.4	15.0

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660B1	AR1660B1	02/23/03	0242	6.78	22.14
23	BBLK1L	MB-5680	02/23/03	0352	6.78	22.13
24	B1LLCS	LCS-5680	02/23/03	0427	6.78	22.14
25	B1LLCSD	LCSD-5680	02/23/03	0503	6.78	22.13
26	RB-021303	B0262-13D	02/23/03	0835	6.78	22.14
27	AR1660B2	AR1660B2	02/23/03	1131	6.78	22.14
28	AR1660BD	AR1660BD	03/03/03	1235	6.78	22.14
29	BBLK1F	MB-5820	03/03/03	1346	6.78	22.14
30	B1FLCS	LCS-5820	03/03/03	1536	6.80	22.15
31	WOD-SS-121	B0262-02A	03/03/03	1611	6.79	22.14
32	SV1211012	B0262-03A	03/03/03	1646	6.78	22.14

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	WOD-SS-122	B0262-04A	03/03/03	1722	6.78	22.13
02	SV1221012	B0262-05A	03/03/03	1757	6.78	22.14
03	SVDUP07	B0262-06A	03/03/03	1832	6.78	22.13
04	WOD-SS-123	B0262-07A	03/03/03	1907	6.78	22.14
05	SV1231012	B0262-08A	03/03/03	1942	6.78	22.13
06	SV1231012MS	B0262-08AMS	03/03/03	2018	6.78	22.14
07	AR1660BE	AR1660BE	03/03/03	2314	6.78	22.14
08	SV1231012MSD	B0262-08AMSD	03/04/03	0024	6.78	22.14
09	WOD-SS-124	B0262-09A	03/04/03	0059	6.78	22.13
10	SV1240203	B0262-10A	03/04/03	0134	6.78	22.13
11	WOD-SS-125	B0262-11A	03/04/03	0210	6.78	22.13
12	SV1250203	B0262-12A	03/04/03	0245	6.78	22.13
13	AR1660BF	AR1660BF	03/04/03	0837	6.78	22.14
14						
15						
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27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660B1	AR1660B1	02/23/03	0242	8.44	25.35
23	BBLK1L	MB-5680	02/23/03	0352	8.44	25.34
24	B1LLCS	LCS-5680	02/23/03	0427	8.44	25.34
25	B1LLCSD	LCSD-5680	02/23/03	0503	8.45	25.34
26	RB-021303	B0262-13D	02/23/03	0835	8.44	25.34
27	AR1660B2	AR1660B2	02/23/03	1131	8.44	25.34
28	AR1660BD	AR1660BD	03/03/03	1235	8.45	25.35
29	BBLK1F	MB-5820	03/03/03	1346	8.45	25.35
30	B1FLCS	LCS-5820	03/03/03	1536	8.46	25.36
31	WOD-SS-121	B0262-02A	03/03/03	1611	8.45	25.35
32	SV1211012	B0262-03A	03/03/03	1646	8.45	25.35

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	WOD-SS-122	B0262-04A	03/03/03	1722	8.45	25.35
02	SV1221012	B0262-05A	03/03/03	1757	8.45	25.35
03	SVDUP07	B0262-06A	03/03/03	1832	8.45	25.35
04	WOD-SS-123	B0262-07A	03/03/03	1907	8.45	25.35
05	SV1231012	B0262-08A	03/03/03	1942	8.45	25.35
06	SV1231012MS	B0262-08AMS	03/03/03	2018	8.45	25.35
07	AR1660BE	AR1660BE	03/03/03	2314	8.45	25.35
08	SV1231012MSD	B0262-08AMSD	03/04/03	0024	8.45	25.35
09	WOD-SS-124	B0262-09A	03/04/03	0059	8.45	25.35
10	SV1240203	B0262-10A	03/04/03	0134	8.45	25.35
11	WOD-SS-125	B0262-11A	03/04/03	0210	8.45	25.35
12	SV1250203	B0262-12A	03/04/03	0245	8.45	25.35
13	AR1660BF	AR1660BF	03/04/03	0837	8.45	25.35
14						
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32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 22, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0262

SAMPLES: 11/SOIL/

WOD-SS-121	WOD-SS-122	WOD-SS-123
WOD-SS-124	WOD-SS-125	WOD-SU-121-1012
WOD-SU-122-1012	WOD-SU-123-1012	WOD-SU-124-0203
WOD-SU-125-0203	WOD-SU-DUP07	

1/AQUEOUS/

RB-021303

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0262, consists of eleven (11) soil environmental samples and one (1) aqueous rinse blank. One (1) field duplicate pair (WOD-SU-DUP07 / WOD-SU-122-1012) is included in this SDG.

All samples were analyzed for target analyte list (TAL) metals. Samples WOD-SS-121, WOD-SS-122, WOD-SS-123, WOD-SS-124, and WOD-SS-125 were also analyzed for pH and grain size. Sample RB-021303 was also analyzed for total organic carbon (TOC). The samples were collected by Tetra Tech NUS February 13, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Analyses of grain size were subcontracted to RI Analytical Laboratories and submitted with this SDG. Results for grain size were not entered into the database. Analyses of TOC in soil were subcontracted to Severn Trent Laboratories Burlington and will be submitted in a separate SDG. Metals analyses except mercury were conducted using SW846 method 6010B. Soil mercury analyses were conducted using SW846 method 7471A. Aqueous mercury analyses were conducted using SW846 method 7470A. pH analyses were conducted using SW846 method 9045C. Grain size analyses were conducted using method ASTM D422. TOC analyses were conducted using EPA method 415.1.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	19.5 ug/L	4.88 mg/kg
Calcium[(1)]	12.785 mg/kg	63.925 mg/kg
Copper[(1)]	0.273 mg/kg	1.365 mg/kg
Magnesium	26.2 ug/L	6.55 mg/kg
Manganese[(1)]	0.168 mg/kg	0.84 mg/kg
Nickel[(1)]	0.048 mg/kg	0.24 mg/kg
Potassium	320.8 ug/L	80.2 mg/kg
Silver[(1)]	0.276 mg/kg	1.38 mg/kg
Sodium	261.1 ug/L	65.28 mg/kg

[(1)] Maximum concentration present in soil preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for calcium, copper, silver, and sodium were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or they were nondetects. The rinse blank was not qualified for blank contamination and was not used to qualify environmental samples.

- The interfering analyte aluminum was present in samples WOD-SS-121, WOD-SS-122, WOD-SS-123, WOD-SS-125, WOD-SU-121-1012, WOD-SU-125-0203, and WOD-SU-DUP07 at concentrations comparable to the concentrations of aluminum in the interference check sample (ICS) solution. Several analytes, namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for antimony, cadmium, and selenium in the affected samples. The nondetected results reported for antimony, cadmium, and selenium were qualified as biased low (UL).

- The interfering analytes aluminum and iron were present in sample WOD-SU-122-1012 at concentrations comparable to the concentrations of aluminum and iron, respectively, in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for antimony, cadmium, lead, and selenium in the affected sample. The positive result reported for lead was qualified as biased high (K). The nondetected results reported for antimony, cadmium, and selenium were qualified as biased low (UL).

- The interfering analyte iron was present in samples WOD-SS-122, WOD-SS-125 and WOD-SU-125-0203 at concentrations comparable to the concentrations of iron in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead,

manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for antimony, cadmium, and selenium in the affected samples. The nondetected results reported for antimony, cadmium, and selenium were qualified as biased low (UL).

- The interfering analyte iron was present in samples WOD-SS-121 and WOD-SS-123 at concentrations comparable to the concentrations of iron in the ICS solution. Several analytes, namely antimony, arsenic, barium, cadmium, chromium, cobalt, lead, manganese, nickel, potassium, selenium, silver, sodium, thallium, vanadium, and zinc were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for antimony, arsenic, cadmium, and selenium in the affected samples. The positive result reported for arsenic was qualified as biased low (L). The nondetected results reported for antimony, cadmium, and selenium were qualified as biased low (UL).

- The soil matrix spike percent recovery (%R) was below the 75% control limit for antimony. Nondetected results reported for antimony in the soil samples were qualified as biased low (UL).

- Field duplicate imprecision (RPD >50%) was noted for iron and manganese in field duplicate pair WOD-SU-DUP07 / WOD-SU-122-1012. Positive results reported for iron and manganese in the soil samples were qualified as estimated (J).

Notes

The sample IDs with the prefix "WOD-SU" were reported incorrectly by the laboratory as "WOD-SV". The data reviewer amended the database for these samples.

Chromium, magnesium, manganese, nickel, potassium, silver, and sodium were present in the rinse blank.

The laboratory did not report the results for the analytes in the ICSA solution. The data reviewer used the raw data to check the levels of analytes in the solution so interference effects could be determined.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: Several analytes were qualified due to ICS interference. Several analytes were qualified due to matrix spike noncompliance. Several analytes were qualified due to field duplicate imprecision.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
J	-	Positive result is considered estimated as a result of technical noncompliance.
K	-	Positive result is considered biased high as a result of technical noncompliance.
L	-	Positive result is considered biased low as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-121		nsample	WOD-SS-122		nsample	WOD-SS-123	
samp_date	2/13/2003		samp_date	2/13/2003		samp_date	2/13/2003	
lab_id	B0262-02A		lab_id	B0262-04A		lab_id	B0262-07A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	92		Pct_Solids	85		Pct_Solids	86	
DUP_OF:			DUP_OF:			DUP_OF:		
Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code
ALUMINUM	6680			ALUMINUM	6900			ALUMINUM	7420		
ANTIMONY	0.15	UL	DK	ANTIMONY	0.15	UL	DK	ANTIMONY	0.14	UL	DK
ARSENIC	1.9	L	K	ARSENIC	10.7			ARSENIC	3.1	L	K
BARIUM	14.4			BARIUM	24.4			BARIUM	26.6		
BERYLLIUM	0.16			BERYLLIUM	0.27			BERYLLIUM	0.21		
CADMIUM	0.034	UL	K	CADMIUM	0.035	UL	K	CADMIUM	0.033	UL	K
CALCIUM	11.8	U		CALCIUM	73.0			CALCIUM	150		
CHROMIUM	6.0			CHROMIUM	9.6			CHROMIUM	8.5		
COBALT	1.5			COBALT	2.0			COBALT	2.3		
COPPER	2.7			COPPER	4.0			COPPER	3.8		
IRON	5520	J	G	IRON	5480	J	G	IRON	6840	J	G
LEAD	5.6			LEAD	10.7			LEAD	26.9		
MAGNESIUM	330			MAGNESIUM	501			MAGNESIUM	608		
MANGANESE	41.8	J	G	MANGANESE	94.1	J	G	MANGANESE	81.4	J	G
MERCURY	0.018	U		MERCURY	0.12			MERCURY	0.016	U	
NICKEL	3.0			NICKEL	3.6			NICKEL	4.3		
POTASSIUM	200			POTASSIUM	277			POTASSIUM	316		
SELENIUM	0.44	UL	K	SELENIUM	0.46	UL	K	SELENIUM	0.43	UL	K
SILVER	0.46	B	A	SILVER	0.34	B	A	SILVER	0.36	B	A
SODIUM	12.9	B	A	SODIUM	12.0	B	A	SODIUM	14.3	B	A
THALLIUM	0.15	U		THALLIUM	0.15	U		THALLIUM	0.14	U	
VANADIUM	10.1			VANADIUM	11.2			VANADIUM	15.7		
ZINC	8.5			ZINC	13.8			ZINC	17.3		

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09A
qc_type	NM
units	MG/KG
Pct_Solids	77
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5110		
ANTIMONY	0.18	UL	D
ARSENIC	2.8		
BARIUM	23.3		
BERYLLIUM	0.16		
CADMIUM	0.042	U	
CALCIUM	617		
CHROMIUM	6.0		
COBALT	1.8		
COPPER	3.7		
IRON	4610	J	G
LEAD	9.5		
MAGNESIUM	534		
MANGANESE	91.4	J	G
MERCURY	0.038		
NICKEL	3.0		
POTASSIUM	323		
SELENIUM	0.54	U	
SILVER	0.26	B	A
SODIUM	11.4	B	A
THALLIUM	0.18	U	
VANADIUM	9.4		
ZINC	13.5		

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11A
qc_type	NM
units	MG/KG
Pct_Solids	76
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8450		
ANTIMONY	0.16	UL	DK
ARSENIC	7.2		
BARIUM	40.1		
BERYLLIUM	0.29		
CADMIUM	0.038	UL	K
CALCIUM	732		
CHROMIUM	11.4		
COBALT	2.9		
COPPER	7.0		
IRON	7440	J	G
LEAD	25.3		
MAGNESIUM	913		
MANGANESE	161	J	G
MERCURY	0.075		
NICKEL	5.4		
POTASSIUM	634		
SELENIUM	0.49	UL	K
SILVER	0.31	B	A
SODIUM	16.5	B	A
THALLIUM	0.16	U	
VANADIUM	16.3		
ZINC	26.4		

nsample	WOD-SU-121-1012
samp_date	2/13/2003
lab_id	B0262-03A
qc_type	NM
units	MG/KG
Pct_Solids	89
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	6050		
ANTIMONY	0.15	UL	DK
ARSENIC	1.5		
BARIUM	18.5		
BERYLLIUM	0.19		
CADMIUM	0.034	UL	K
CALCIUM	11.8	U	
CHROMIUM	4.5		
COBALT	0.55		
COPPER	1.2	B	A
IRON	2680	J	G
LEAD	1.6		
MAGNESIUM	278		
MANGANESE	21.3	J	G
MERCURY	0.019	U	
NICKEL	1.4		
POTASSIUM	211		
SELENIUM	0.44	UL	K
SILVER	0.26	B	A
SODIUM	14.1	B	A
THALLIUM	0.15	U	
VANADIUM	6.3		
ZINC	3.3		

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-122-1012
samp_date	2/13/2003
lab_id	B0262-05A
qc_type	NM
units	MG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	11400		
ANTIMONY	0.16	UL	DK
ARSENIC	3.2		
BARIUM	46.8		
BERYLLIUM	0.35		
CADMIUM	0.038	UL	K
CALCIUM	26.0	B	A
CHROMIUM	9.8		
COBALT	1.1		
COPPER	2.0		
IRON	5270	J	G
LEAD	2.6	K	K
MAGNESIUM	603		
MANGANESE	85.8	J	G
MERCURY	0.018	U	
NICKEL	2.6		
POTASSIUM	515		
SELENIUM	0.49	UL	K
SILVER	0.33	B	A
SODIUM	17.6	B	A
THALLIUM	0.16	U	
VANADIUM	12.6		
ZINC	5.6		

nsample	WOD-SU-123-1012
samp_date	2/13/2003
lab_id	B0262-08A
qc_type	NM
units	MG/KG
Pct_Solids	92
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	4190		
ANTIMONY	0.14	UL	D
ARSENIC	1.4		
BARIUM	10.9		
BERYLLIUM	0.13		
CADMIUM	0.033	U	
CALCIUM	22.8	B	A
CHROMIUM	3.5		
COBALT	0.38		
COPPER	0.77	B	A
IRON	1680	J	G
LEAD	1.1		
MAGNESIUM	221		
MANGANESE	25.7	J	G
MERCURY	0.018	U	
NICKEL	0.83		
POTASSIUM	167		
SELENIUM	0.42	U	
SILVER	0.16	B	A
SODIUM	7.2	B	A
THALLIUM	0.14	U	
VANADIUM	4.4		
ZINC	2.3		

nsample	WOD-SU-124-0203
samp_date	2/13/2003
lab_id	B0262-10A
qc_type	NM
units	MG/KG
Pct_Solids	94
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	2750		
ANTIMONY	0.14	UL	D
ARSENIC	1.4		
BARIUM	10.8		
BERYLLIUM	0.088		
CADMIUM	0.032	U	
CALCIUM	166		
CHROMIUM	3.1		
COBALT	0.76		
COPPER	1.1	B	A
IRON	2170	J	G
LEAD	2.7		
MAGNESIUM	185		
MANGANESE	23.5	J	G
MERCURY	0.016	U	
NICKEL	1.3		
POTASSIUM	110		
SELENIUM	0.41	U	
SILVER	0.15	B	A
SODIUM	4.0	B	A
THALLIUM	0.14	U	
VANADIUM	4.5		
ZINC	4.6		

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-125-0203
samp_date	2/13/2003
lab_id	B0262-12A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	6570		
ANTIMONY	0.14	UL	DK
ARSENIC	5.0		
BARIUM	113		
BERYLLIUM	0.25		
CADMIUM	0.032	UL	K
CALCIUM	861		
CHROMIUM	8.7		
COBALT	2.2		
COPPER	4.9		
IRON	5700	J	G
LEAD	23.2		
MAGNESIUM	576		
MANGANESE	93.0	J	G
MERCURY	0.028		
NICKEL	4.2		
POTASSIUM	258		
SELENIUM	0.41	UL	K
SILVER	0.26	B	A
SODIUM	14.8	B	A
THALLIUM	0.14	U	
VANADIUM	13.7		
ZINC	22.7		

nsample	WOD-SU-DUP07
samp_date	2/13/2003
lab_id	B0262-06A
qc_type	NM
units	MG/KG
Pct_Solids	91
DUP_OF:	WOD-SU-122-1012

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8280		
ANTIMONY	0.14	UL	DK
ARSENIC	1.6		
BARIUM	30.4		
BERYLLIUM	0.23		
CADMIUM	0.034	UL	K
CALCIUM	27.4	B	A
CHROMIUM	7.9		
COBALT	0.86		
COPPER	1.3	B	A
IRON	3110	J	G
LEAD	2.1		
MAGNESIUM	389		
MANGANESE	47.9	J	G
MERCURY	0.017	U	
NICKEL	1.7		
POTASSIUM	347		
SELENIUM	0.43	UL	K
SILVER	0.18	B	A
SODIUM	12.9	B	A
THALLIUM	0.14	U	
VANADIUM	7.7		
ZINC	3.5		

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-121
samp_date	2/13/2003
lab_id	B0262-02A
qc_type	NM
Pct_Solids	92
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	4.9		

nsample	WOD-SS-122
samp_date	2/13/2003
lab_id	B0262-04A
qc_type	NM
Pct_Solids	85
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	5.8		

nsample	WOD-SS-123
samp_date	2/13/2003
lab_id	B0262-07A
qc_type	NM
Pct_Solids	86
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6		

PROJ_NO: 4740

SDG: B0262 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-124
samp_date	2/13/2003
lab_id	B0262-09A
qc_type	NM
Pct_Solids	77
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.5		

nsample	WOD-SS-125
samp_date	2/13/2003
lab_id	B0262-11A
qc_type	NM
Pct_Solids	76
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.2		

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION:

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13B
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
TOTAL ORGANIC CARBON	MG/L	6	U	

PROJ_NO: 4740

SDG: B0262 MEDIA: WATER DATA FRACTION:

nsample	RB-021303
samp_date	2/13/2003
lab_id	B0262-13C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	4.0	U	
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	240	U	
CHROMIUM	1.6		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	13.1		
MANGANESE	1.4		
MERCURY	0.14	U	
NICKEL	1.1		
POTASSIUM	228		
SELENIUM	9.0	U	
SILVER	3.5		
SODIUM	188		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
WOD-SS-121

Lab Name: MITKEM_CORPORATION_ Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-02A

Level (low/med): MED Date Received: 02/14/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6680			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.9			P
7440-39-3	Barium	14.4			P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	11.8	U		P
7440-47-3	Chromium	6.0			P
7440-48-4	Cobalt	1.5	B		P
7440-50-8	Copper	2.7			P
7439-89-6	Iron	5520			P
7439-92-1	Lead	5.6			P
7439-95-4	Magnesium	330			P
7439-96-5	Manganese	41.8		*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	3.0			P
7440-09-7	Potassium	200			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.46	B		P
7440-23-5	Sodium	12.9	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	10.1			P
7440-66-6	Zinc	8.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-122

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-04A

Level (low/med): MED Date Received: 02/14/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6900			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	10.7			P
7440-39-3	Barium	24.4			P
7440-41-7	Beryllium	0.27			P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	73.0			P
7440-47-3	Chromium	9.6			P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	4.0			P
7439-89-6	Iron	5480			P
7439-92-1	Lead	10.7			P
7439-95-4	Magnesium	501		*	P
7439-96-5	Manganese	94.1			P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	3.6			P
7440-09-7	Potassium	277			P
7782-49-2	Selenium	0.46	U		P
7440-22-4	Silver	0.34	B		P
7440-23-5	Sodium	12.0	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	11.2			P
7440-66-6	Zinc	13.8			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

SW846

FORM I - IN

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-123

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-07A

Level (low/med): MED Date Received: 02/14/03

% Solids: 86.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7420			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	3.1			P
7440-39-3	Barium	26.6			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	150			P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	3.8			P
7439-89-6	Iron	6840			P
7439-92-1	Lead	26.9			P
7439-95-4	Magnesium	608			P
7439-96-5	Manganese	81.4		*	P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	4.3			P
7440-09-7	Potassium	316			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.36	B		P
7440-23-5	Sodium	14.3	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	15.7			P
7440-66-6	Zinc	17.3			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-124

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-09A

Level (low/med): MED Date Received: 02/14/03

% Solids: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5110			P
7440-36-0	Antimony	0.18	U	N	P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	23.3			P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.042	U		P
7440-70-2	Calcium	617			P
7440-47-3	Chromium	6.0			P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	3.7			P
7439-89-6	Iron	4610			P
7439-92-1	Lead	9.5			P
7439-95-4	Magnesium	534			P
7439-96-5	Manganese	91.4		*	P
7439-97-6	Mercury	0.038			CV
7440-02-0	Nickel	3.0			P
7440-09-7	Potassium	323			P
7782-49-2	Selenium	0.54	U		P
7440-22-4	Silver	0.26	B		P
7440-23-5	Sodium	11.4	B		P
7440-28-0	Thallium	0.18	U		P
7440-62-2	Vanadium	9.4			P
7440-66-6	Zinc	13.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-125

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-11A

Level (low/med): MED Date Received: 02/14/03

% Solids: 76.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8450			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	7.2			P
7440-39-3	Barium	40.1			P
7440-41-7	Beryllium	0.29			P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	732			P
7440-47-3	Chromium	11.4			P
7440-48-4	Cobalt	2.9			P
7440-50-8	Copper	7.0		*	P
7439-89-6	Iron	7440		TM 2/28/03	P
7439-92-1	Lead	25.3			P
7439-95-4	Magnesium	913			P
7439-96-5	Manganese	161		*	P
7439-97-6	Mercury	0.075			CV
7440-02-0	Nickel	5.4			P
7440-09-7	Potassium	634			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.31	B		P
7440-23-5	Sodium	16.5	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	16.3			P
7440-66-6	Zinc	26.4			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1211012

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-03A

Level (low/med): MED Date Received: 02/14/03

% Solids: 89.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6050			P
7440-36-0	Antimony	0.15	U	N	P
7440-38-2	Arsenic	1.5			P
7440-39-3	Barium	18.5			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	11.8	U		P
7440-47-3	Chromium	4.5			P
7440-48-4	Cobalt	0.55	B		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	2680			P
7439-92-1	Lead	1.6			P
7439-95-4	Magnesium	278			P
7439-96-5	Manganese	21.3		*	P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	1.4	B		P
7440-09-7	Potassium	211			P
7782-49-2	Selenium	0.44	U		P
7440-22-4	Silver	0.26	B		P
7440-23-5	Sodium	14.1	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	6.3			P
7440-66-6	Zinc	3.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1221012

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-05A

Level (low/med): MED Date Received: 02/14/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11400			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	3.2			P
7440-39-3	Barium	46.8			P
7440-41-7	Beryllium	0.35			P
7440-43-9	Cadmium	0.038	U		P
7440-70-2	Calcium	26.0	B		P
7440-47-3	Chromium	9.8			P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	2.0			P
7439-89-6	Iron	5270			P
7439-92-1	Lead	2.6			P
7439-95-4	Magnesium	603			P
7439-96-5	Manganese	85.8		*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	2.6	B		P
7440-09-7	Potassium	515			P
7782-49-2	Selenium	0.49	U		P
7440-22-4	Silver	0.33	B		P
7440-23-5	Sodium	17.6	B		P
7440-28-0	Thallium	0.16	U		P
7440-62-2	Vanadium	12.6			P
7440-66-6	Zinc	5.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
SV1231012

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-08A

Level (low/med): MED Date Received: 02/14/03

% Solids: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4190			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	10.9			P
7440-41-7	Beryllium	0.13	B		P
7440-43-9	Cadmium	0.033	U		P
7440-70-2	Calcium	22.8	B		P
7440-47-3	Chromium	3.5			P
7440-48-4	Cobalt	0.38	B		P
7440-50-8	Copper	0.77	B	*	P
7439-89-6	Iron	1680			P
7439-92-1	Lead	1.1			P
7439-95-4	Magnesium	221			P
7439-96-5	Manganese	25.7		*	P
7439-97-6	Mercury	0.018	U		CV
7440-02-0	Nickel	0.83	B		P
7440-09-7	Potassium	167			P
7782-49-2	Selenium	0.42	U		P
7440-22-4	Silver	0.16	B		P
7440-23-5	Sodium	7.2	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	4.4			P
7440-66-6	Zinc	2.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1240203

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-10A

Level (low/med): MED Date Received: 02/14/03

% Solids: 94.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2750			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	1.4			P
7440-39-3	Barium	10.8			P
7440-41-7	Beryllium	0.088	B		P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	166			P
7440-47-3	Chromium	3.1			P
7440-48-4	Cobalt	0.76	B		P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	2170			P
7439-92-1	Lead	2.7			P
7439-95-4	Magnesium	185			P
7439-96-5	Manganese	23.5		*	P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	110			P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.15	B		P
7440-23-5	Sodium	4.0	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	4.5			P
7440-66-6	Zinc	4.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1250203

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-12A

Level (low/med): MED Date Received: 02/14/03

% Solids: 90.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6570.			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	113			P
7440-41-7	Beryllium	0.25			P
7440-43-9	Cadmium	0.032	U		P
7440-70-2	Calcium	861			P
7440-47-3	Chromium	8.7			P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	4.9			P
7439-89-6	Iron	5700.			P
7439-92-1	Lead	23.2			P
7439-95-4	Magnesium	576			P
7439-96-5	Manganese	93.0		*	P
7439-97-6	Mercury	0.028	B		CV
7440-02-0	Nickel	4.2			P
7440-09-7	Potassium	258			P
7782-49-2	Selenium	0.41	U		P
7440-22-4	Silver	0.26	B		P
7440-23-5	Sodium	14.8	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	13.7			P
7440-66-6	Zinc	22.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SVDUP07

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Lab Sample ID: B0262-06A

Level (low/med): MED Date Received: 02/14/03

% Solids: 91.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8280			P
7440-36-0	Antimony	0.14	U	N	P
7440-38-2	Arsenic	1.6			P
7440-39-3	Barium	30.4			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.034	U		P
7440-70-2	Calcium	27.4	B		P
7440-47-3	Chromium	7.9			P
7440-48-4	Cobalt	0.86	B		P
7440-50-8	Copper	1.3	B		P
7439-89-6	Iron	3110			P
7439-92-1	Lead	2.1			P
7439-95-4	Magnesium	389			P
7439-96-5	Manganese	47.9		*	P
7439-97-6	Mercury	0.017	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	347			P
7782-49-2	Selenium	0.43	U		P
7440-22-4	Silver	0.18	B		P
7440-23-5	Sodium	12.9	B		P
7440-28-0	Thallium	0.14	U		P
7440-62-2	Vanadium	7.7			P
7440-66-6	Zinc	3.5			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021303

Lab Name: MITKEM_CORPORATION_ Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): WATER_ Lab Sample ID: B0262-13C_

Level (low/med): MED Date Received: 02/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	13.1	B		P
7439-96-5	Manganese	1.4	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.1	B		P
7440-09-7	Potassium	228	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.5	B		P
7440-23-5	Sodium	188	B		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Percent Moisture and Percent Solids Report

Mitkem Sample ID	Client Sample ID	Analyzed	Percent Moisture	Percent Solids	Validated
B0262-02A	WOD-SS-121	02/14/2003	8	92	Yes
B0262-03A	WOD-SV-121-1012	02/14/2003	11	89	Yes
B0262-04A	WOD-SS-122	02/14/2003	15	85	Yes
B0262-05A	WOD-SV-122-1012	02/14/2003	15	85	Yes
B0262-06A	WOD-SV-DUP07	02/14/2003	9	91	Yes
B0262-07A	WOD-SS-123	02/14/2003	14	86	Yes
B0262-08A	WOD-SV-123-1012	02/14/2003	8	92	Yes
B0262-09A	WOD-SS-124	02/14/2003	23	77	Yes
B0262-10A	WOD-SV-124-0203	02/14/2003	6	94	Yes
B0262-11A	WOD-SS-125	02/14/2003	24	76	Yes
B0262-12A	WOD-SV-125-0203	02/14/2003	10	90	Yes

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-121 **Collection Date:** 02/13/03 8:40
Lab ID: B0262-02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	4.9		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-122 **Collection Date:** 02/13/03 9:55
Lab ID: B0262-04

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.8		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-123 **Collection Date:** 02/13/03 11:00
Lab ID: B0262-07

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.0		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-124 **Collection Date:** 02/13/03 12:40
Lab ID: B0262-09

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.5		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: WOD-SS-125 **Collection Date:** 02/13/03 13:10
Lab ID: B0262-11

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.2		1.0	pH Units	1	02/19/2003	R1910

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: RB-021303 **Collection Date:** 02/13/03 15:30
Lab ID: B0262-13

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1985
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 01 B0262-02B GRAB 02/13/03 @0840

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.56	99.44
No. 10	0.38	99.06
No. 20	2.30	96.76
No. 40	8.66	88.10
No. 60	35.02	53.08
No. 140	44.40	8.68
No. 200	2.56	6.12

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1985
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 02 B0262-04B GRAB 02/13/03 @0955

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	1.43	98.57
No. 20	2.93	95.64
No. 40	15.07	80.57
No. 60	30.10	50.47
No. 140	36.23	14.24
No. 200	2.64	11.60

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1985
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 03 B0262-07B GRAB 02/13/03 @1100

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	4.90	95.10
No. 10	7.33	87.77
No. 20	11.73	76.04
No. 40	19.15	56.89
No. 60	23.12	33.77
No. 140	24.81	8.96
No. 200	2.17	6.79

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1985
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 04 B0262-09B GRAB 02/13/03 @1240

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.97	99.03
No. 10	1.77	97.26
No. 20	3.80	93.46
No. 40	14.35	79.11
No. 60	24.20	54.91
No. 140	43.85	11.06
No. 200	3.61	7.45

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-1985
Date Received: 2/14/03

Approved by: _____
R.I. Analytical

Sample #: 05 B0262-11B GRAB 02/13/03 @1310

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.64	99.36
No. 10	6.41	92.95
No. 20	13.93	79.02
No. 40	14.56	64.46
No. 60	17.29	47.17
No. 140	29.99	17.18
No. 200	3.51	13.67

APPENDIX C

SUPPORT DOCUMENTATION

B0262

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS1	0217LCSS	LCS	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
%	LCSW1	0217LCSW	LCS	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
MG/KG	PBS1	0217PBS	M_BLANK	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	PBW1	0217PBW	M_BLANK	B0262	HG	/ /	02/17/03	02/18/03	0	1	0
UG/L	RB-021303	B0262-13C	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-121	B0262-02A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-122	B0262-04A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-123	B0262-07A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-124	B0262-09A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SS-125	B0262-11A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-123-1012DUP	B0262-08ADUP	DUPLICATE	B0262	HG	02/14/03	02/17/03	02/18/03	3	1	4
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
MG/KG	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	HG	02/13/03	02/17/03	02/18/03	4	1	5
%	LCSS	0215LCSS	LCS	B0262	M	/ /	02/15/03	02/18/03	0	3	0
%	LCSW	0215LCSW	LCS	B0262	M	/ /	02/15/03	02/18/03	0	3	0
MG/KG	PBS	0215PBS	M_BLANK	B0262	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	PBW	0215PBW	M_BLANK	B0262	M	/ /	02/15/03	02/18/03	0	3	0
UG/L	RB-021303	B0262-13C	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-121	B0262-02A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/KG	WOD-SS-122	B0262-04A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-123	B0262-07A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-124	B0262-09A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SS-125	B0262-11A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-123-1012DUP	B0262-08ADUP	DUPLICATE	B0262	M	02/14/03	02/15/03	02/18/03	1	3	4
UG/L	WOD-SV-123-1012L	B0262-08AL	NORMAL	B0262	M	02/14/03	02/18/03	02/18/03	4	0	4
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
MG/KG	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	M	02/13/03	02/15/03	02/18/03	2	3	5
%	RB-021303	B0262-13D	NORMAL	B0262	OS	02/13/03	02/18/03	03/13/03	5	23	28
%	SBLK2S	MB-5821	M_BLANK	B0262	OS	/ /	02/27/03	03/14/03	0	15	0
%	SBLK2SLCS	LCS-5821	LCS	B0262	OS	/ /	02/27/03	03/14/03	0	15	0
UG/L	SBLK3P	MB-5678	M_BLANK	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCS	LCS-5678	LCS	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	SBLK3PLCSD	LCSD-5678	LCSD	B0262	OS	/ /	02/18/03	03/13/03	0	23	0
%	WOD-SS-121	B0262-02A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-122	B0262-04A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-123	B0262-07A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SS-124	B0262-09A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SS-125	B0262-11A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	OS	02/13/03	02/27/03	03/11/03	14	12	26
%	WOD-SV-123-1012MSD	B0262-08AMSD	MSD	B0262	OS	02/13/03	02/27/03	03/11/03	14	12	26
%	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	OS	02/13/03	02/27/03	03/14/03	14	15	29
%	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	OS	02/13/03	02/27/03	03/10/03	14	11	25
%	RB-021303	B0262-13A	NORMAL	B0262	OV	02/13/03	02/24/03	02/24/03	11	0	11
UG/L	TB-021302	B0262-01A	NORMAL	B0262	OV	02/13/03	02/24/03	02/24/03	11	0	11
%	VBLK5A	V5B0221A	M_BLANK	B0262	OV	/ /	02/21/03	02/21/03	0	0	0
%	VBLK5ALCS	V5L0221A	LCS	B0262	OV	/ /	02/21/03	02/21/03	0	0	0
%	VBLK5B	V5B0223A	M_BLANK	B0262	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK5BLCS	V5L0223A	LCS	B0262	OV	/ /	02/23/03	02/23/03	0	0	0
%	VBLK5Y	V5B0217A	M_BLANK	B0262	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5YLCS	V5L0217A	LCS	B0262	OV	/ /	02/17/03	02/17/03	0	0	0
%	VBLK5Z	V5B0219A	M_BLANK	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCS	V5L0219A	LCS	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
%	VBLK5ZLCSD	V5L0219B	LCSD	B0262	OV	/ /	02/19/03	02/19/03	0	0	0
UG/L	VBLK6K	V6B0224A	M_BLANK	B0262	OV	/ /	02/24/03	02/24/03	0	0	0
%	VBLK6KLCS	V6L0224A	LCS	B0262	OV	/ /	02/24/03	02/24/03	0	0	0
%	WOD-SS-121	B0262-02C	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SS-122	B0262-04C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SS-123	B0262-07B	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SS-124	B0262-09C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SS-124RE	B0262-09CRE	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SS-125	B0262-11C	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-121-1012	B0262-03B	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-122-1012	B0262-05B	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-123-1012	B0262-08B	NORMAL	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SV-123-1012MS	B0262-08BMS	MS	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-123-1012MSD	B0262-08BMSD	MSD	B0262	OV	02/13/03	02/17/03	02/17/03	4	0	4
%	WOD-SV-124-0203	B0262-10B	NORMAL	B0262	OV	02/13/03	02/20/03	02/20/03	7	0	7
%	WOD-SV-124-0203RE	B0262-10BRE	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	WOD-SV-125-0203	B0262-12B	NORMAL	B0262	OV	02/13/03	02/23/03	02/23/03	10	0	10
%	WOD-SV-DUP07	B0262-06B	NORMAL	B0262	OV	02/13/03	02/21/03	02/21/03	8	0	8
%	BBLK1F	MB-5820	M_BLANK	B0262	PCB	/ /	02/27/03	03/03/03	0	4	0
%	BBLK1FLCS	LCS-5820	LCS	B0262	PCB	/ /	02/27/03	03/03/03	0	4	0
UG/L	BBLK1L	MB-5680	M_BLANK	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCS	LCS-5680	LCS	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	BBLK1LLCSD	LCSD-5680	LCSD	B0262	PCB	/ /	02/18/03	02/23/03	0	5	0
%	RB-021303	B0262-13D	NORMAL	B0262	PCB	02/13/03	02/18/03	02/23/03	5	5	10
%	WOD-SS-121	B0262-02A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-122	B0262-04A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-123	B0262-07A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SS-124	B0262-09A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SS-125	B0262-11A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-121-1012	B0262-03A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-122-1012	B0262-05A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-123-1012	B0262-08A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
%	WOD-SV-123-1012MS	B0262-08AMS	MS	B0262	PCB	02/14/03	02/27/03	03/03/03	13	4	17
%	WOD-SV-123-1012MSD	B0262-08AMSD	MSD	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-124-0203	B0262-10A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-125-0203	B0262-12A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/04/03	14	5	19
%	WOD-SV-DUP07	B0262-06A	NORMAL	B0262	PCB	02/13/03	02/27/03	03/03/03	14	4	18
S.U.	WOD-SS-121	B0262-02A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-122	B0262-04A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
S.U.	WOD-SS-123	B0262-07A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-124	B0262-09A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
S.U.	WOD-SS-125	B0262-11A	NORMAL	B0262	PH	02/13/03	02/19/03	02/19/03	6	0	6
%	LCS-6168	LCS-6168	LCS	B0262	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	MB-6168	MB-6168	M_BLANK	B0262	TOC	/ /	02/28/03	02/28/03	0	0	0
MG/L	RB-021303	B0262-13B	NORMAL	B0262	TOC	02/13/03	02/28/03	02/28/03	15	0	15

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CHAIN-OF-CUSTODY RECORD

Page 1 of 2

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #:
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40ml VOA Vial HCl; TCL VOC Soil Encore Sampler; TCL VOC 40z Amber Glass Widemouth; TCL SVOC 40z Amber Glass Widemouth PLB; TAL Metals + pH 40z Amber Glass Widemouth; TCL + TAL Metals + pH 40z Amber Glass Widemouth; 8oz Amber Glass Widemouth Grain Size; TAL Metals % moisture	COMMENTS
TB-021302	2/13/03 / 0710		X	X			01	2	2	Trip Blank
WOD-SS-121	2/13/03 / 0840		X		X		02	7	3 1 1✓ 1 1✓	
WOD-SU-121-1012	2/13/03 / 0940		X		X		03	5	3 1 1✓	
X WOD-SS-122	2/13/03 / 0955		X		X		04	7	3 1 1✓ 1 1✓	
WOD-SU-122-1012	2/13/03 / 1040		X		X		05	5	3 1 1✓	
WOD-SU-DUP 07	2/13/03 / 1055		X		X		06	5	3 1 1✓	
X WOD-SS-123	2/13/03 / 1100		X		X		07	7	3 1 1✓ 1 1✓	
WOD-SU-123-1012	2/13/03 / 1140		X		X		08	15	9 3 3✓	DOMS/MSD
X WOD-SS-124	2/13/03 / 1240		X		X		09	7	3 1 1✓ 1 1✓	
WOD-SU-124-0203	2/13/03 / 1300		X		X		10	5	3 1 1✓	
X WOD-SS-125	2/13/03 / 1310		X		X		11	7	3 1 1✓ 1 1	
WOD-SU-125-0203	2/13/03 / 1335		X		X		12	5	3 1 1✓	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
0015	Heather Morgan	2/13/03 / 1700	D Fetka, Rad	2-14-03 / 0900	Blank water was provided by the Lab	6.0
		/		/	Samples shipped via Federal Express Airbill No 8286 8470 3054	
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #:
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	LTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl	TCL VOC 1 Liter Amber Glass	TAL Succ 1 Liter Amber Glass	TCL PCB 40 ml VOA Vial HCl	TOC 500 ml Poly HNO3								COMMENTS
RB-021303	2/13/02 1530		X	X			B	9	2	2	2	2	1								Rinsate Blank
	/																				
	/																				
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	/																				

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Meyer	2/13/03 1700	Patricia Reed	2-14-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Blank water was provided by the lab Samples were shipped via Federal Express Airbill NO 8286 8470 8054

COOLER TEMP: 20

0016

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for two aqueous and eleven soil samples that were collected on February 13, 2003, and received at Mitkem on February 14, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples WOD-SS-124, SV1240203, SV1231012MS and SV1231012MSD. Matrix interference on surrogate confirmed with re-analysis of samples WOD-SS-124 and SV1240203 with similar findings.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of stryene.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of phenol-d5 and 2-fluorophenol in method blank, SBLK2S, and lab control sample S2SLCS.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of phenol, N-nitroso-di-n-propylamine and isophorone in S2SLCS and high recovery of 4-nitroaniline in S3PLCSD. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: due to sample matrix, sample WOD-SS-123 had a final volume of 5mL rather than the normal 1mL final volume. This is equivalent to 5x dilution. No other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample SV1231012. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample SV1231012. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample SV1231013. Replicate RPDs were within the QC limits with the exception of manganese. Manganese is flagged with an "*" on Form 1's.

Sample analysis: no other unusual observation was made for the analysis.

6. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

7. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

8. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0262

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0262-01A	TB-021302	
B0262-02A	WOD-SS-121	
B0262-02B	WOD-SS-121	
B0262-02C	WOD-SS-121	
B0262-03A	SV1211012	WOD-SV-121-1012
B0262-03B	SV1211012	WOD-SV-121-1012
B0262-04A	WOD-SS-122	
B0262-04B	WOD-SS-122	
B0262-04C	WOD-SS-122	
B0262-05A	SV1221012	WOD-SV-122-1012
B0262-05B	SV1221012	WOD-SV-122-1012
B0262-06A	SVDUP07	WOD-SV-DUP07
B0262-06B	SVDUP07	WOD-SV-DUP07
B0262-07A	WOD-SS-123	
B0262-07B	WOD-SS-123	
B0262-07C	WOD-SS-123	
B0262-08A	SV1231012	WOD-SV-123-1012
B0262-08B	SV1231012	WOD-SV-123-1012
B0262-09A	WOD-SS-124	
B0262-09B	WOD-SS-124	
B0262-09C	WOD-SS-124	
B0262-10A	SV1240203	WOD-SV-124-0203
B0262-10B	SV1240203	WOD-SV-124-0203
B0262-11A	WOD-SS-125	
B0262-11B	WOD-SS-125	
B0262-11C	WOD-SS-125	
B0262-12A	SV1250203	WOD-SV-125-0203
B0262-12B	SV1250203	WOD-SV-125-0203
B0262-13A	RB-021303	
B0262-13B	RB-021303	
B0262-13C	RB-021303	
B0262-13D	RB-021303	

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
RB-021303	B0262-13C
SV1211012	B0262-03A
SV1221012	B0262-05A
SV1231012	B0262-08A
SV1231012D	B0262-08AD
SV1231012S	B0262-08AS
SV1240203	B0262-10A
SV1250203	B0262-12A
SVDUP07	B0262-06A
WOD-SS-121	B0262-02A
WOD-SS-122	B0262-04A
WOD-SS-123	B0262-07A
WOD-SS-124	B0262-09A
WOD-SS-125	B0262-11A

Were ICP interelement corrections applied ?	Yes/No	YES
Were ICP background corrections applied ?	Yes/No	YES
If yes - were raw data generated before application of background corrections ?	Yes/No	NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: REINER A. COURMY

Date: 2/28/03 Title: CHEMIST

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/14/03
Date Reported: 2/21/03
P.O. #: 292
Work Order #: 0302-01985

DESCRIPTION: PROJECT# B0262 (FIVE SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 2/14/03
Work Order # 0302-01985

Approved by:
R.I. Analytical

Sample #: 001
SAMPLE DESCRIPTION: B0262-02B GRAB 02/13/03 @0840

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/18/03 14:30	CCP

Sieve - * See Attached

Sample #: 002
SAMPLE DESCRIPTION: B0262-04B GRAB 02/13/03 @0955

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/18/03 14:45	CCP

Sieve - * See Attached

Sample #: 003
SAMPLE DESCRIPTION: B0262-07B GRAB 02/13/03 @1100

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/18/03 16:15	CCP

Sieve - * See Attached

Sample #: 004
SAMPLE DESCRIPTION: B0262-09B GRAB 02/13/03 @1240

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/18/03 17:05	CCP

Sieve - * See Attached

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 2/14/03
Work Order # 0302-01985

Approved by:
R.I. Analytical

Sample #: 005
SAMPLE DESCRIPTION: B0262-11B GRAB 02/13/03 @1310

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	2/19/03 7:30	CCP

Sieve - * See Attached

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L.) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	19.5	B	18.2	B	17.000	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.900	U	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	8.0	U	8.0	U	22.1	B	26.2	B	19.452	B	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	0.800	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium	320.8	B	231.9	B	78.0	U	78.0	U	203.514	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.126	B	P
Sodium	261.1	B	158.7	B	83.0	U	83.0	U	158.413	B	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION_ Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prep-aration Blank	C	M
Aluminum									0.850	U	P
Antimony									0.150	U	P
Arsenic									0.150	U	P
Barium									0.200	U	P
Beryllium									0.025	U	P
Cadmium									0.035	U	P
Calcium									12.785	B	P
Chromium									0.030	U	P
Cobalt									0.045	U	P
Copper									0.273	B	P
Iron									1.300	U	P
Lead									0.200	U	P
Magnesium									0.400	U	P
Manganese									0.168	B	P
Mercury									0.017	U	CV
Nickel									0.048	B	P
Potassium									10.220	B	P
Selenium									0.450	U	P
Silver									0.276	B	P
Sodium									6.425	B	P
Thallium									0.150	U	P
Vanadium									0.035	U	P
Zinc									0.350	U	P
Cyanide											

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0262
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID	MB-6168	SampType:	MBLK	TestCode:	E415.1_TOC_W			Prep Date:	2/28/03		Run ID:	TOC1_030228A	
Client ID:	MB-6168	Batch ID:	6168	Units:	mg/L			Analysis Date:	2/28/03		SeqNo:	86778	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbon, Total		ND	6.0										

Sample ID	LCS-6168	SampType:	LCS	TestCode:	E415.1_TOC_W			Prep Date:	2/28/03		Run ID:	TOC1_030228A	
Client ID:	LCS-6168	Batch ID:	6168	Units:	mg/L			Analysis Date:	2/28/03		SeqNo:	86779	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Organic Carbon, Total		48.7	6.0	54.1	0	90	80	120	0	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

1107

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	486502	479244.5	95.8	476251	474086.1	94.8
Antimony		600		547.5	91.2		528.5	88.1
Arsenic		100		91.6	91.6		91.1	91.1
Barium		500		465.8	93.2		458.6	91.7
Beryllium		500		461.4	92.3		454.4	90.9
Cadmium		1000		904.3	90.4		898.0	89.8
Calcium	500000	500000	492571	491845.7	98.4	484090	480321.7	96.1
Chromium		500		449.7	89.9		442.0	88.4
Cobalt		500		434.8	87.0		428.4	85.7
Copper		500		490.9	98.2		475.7	95.1
Iron	200000	200000	172504	170348.2	85.2	169771	168933.6	84.5
Lead		500		469.7	93.9		465.5	93.1
Magnesium	500000	500000	480693	473972.5	94.8	473550	470500.4	94.1
Manganese		500		457.6	91.5		449.0	89.8
Mercury								
Nickel		1000		864.7	86.5		852.3	85.2
Potassium		25000		28671.0	114.7		26312.4	105.2
Selenium		500		478.9	95.8		467.0	93.4
Silver		200		206.5	103.2		201.9	101.0
Sodium		25000		28011.5	112.0		27621.7	110.5
Thallium		100		98.1	98.1		98.1	98.1
Vanadium		500		467.8	93.6		458.7	91.7
Zinc		1000		867.3	86.7		860.0	86.0

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000				477243	476097.4	95.2
Antimony		600					533.8	89.0
Arsenic		100					87.9	87.9
Barium		500					463.6	92.7
Beryllium		500					459.2	91.8
Cadmium		1000					909.3	90.9
Calcium	500000	500000				490054	482154.4	96.4
Chromium		500					441.9	88.4
Cobalt		500					430.3	86.1
Copper		500					476.1	95.2
Iron	200000	200000				170226	169634.3	84.8
Lead		500					465.2	93.0
Magnesium	500000	500000				474801	472315.8	94.5
Manganese		500					452.4	90.5
Mercury								
Nickel		1000					856.8	85.7
Potassium								
Selenium		500					479.8	96.0
Silver		200					202.7	101.4
Sodium								
Thallium		100					99.4	99.4
Vanadium		500					462.5	92.5
Zinc		1000					870.1	87.0

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/18/03 1:42:10 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	276988.2	49.570	mg/L	0.2750	49.570	mg/L	0.2750	0.55%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/18/03 1:44:28 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	142773.5	25.551	mg/L	0.1200	25.551	mg/L	0.1200	0.47%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/18/03 1:46:46 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1458.8	0.2611	mg/L	0.00975	0.2611	mg/L	0.00975	3.73%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/18/03 1:49:05 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1454.4	0.2603	mg/L	0.01960	0.2603	mg/L	0.01960	7.53%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/18/03 1:51:24 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	156523.5	28.011	mg/L	0.2318	28.011	mg/L	0.2318	0.83%

Sequence No.: 10
Sample ID: MB-5561,5661
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 48
Date Collected: 2/18/03 1:53:46 PM
Sample Prep Volume:
Data Type: Original

Sequence No.: 27
Sample ID: B0262-08ASD,5662
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 61
Date Collected: 2/18/03 2:32:43 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0262-08ASD,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	-50.5	-0.0090	mg/L	0.00528	-0.0090	mg/L	0.00528	58.50%

Sequence No.: 28
Sample ID: B0262-09A,5662
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 62
Date Collected: 2/18/03 2:35:04 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0262-09A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1054.9	0.1888	mg/L	0.01290	0.1888	mg/L	0.01290	6.83%

Sequence No.: 29
Sample ID: B0262-10A,5662
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 63
Date Collected: 2/18/03 2:37:25 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0262-10A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	482.6	0.0864	mg/L	0.01603	0.0864	mg/L	0.01603	18.57%

Sequence No.: 30
Sample ID: B0262-11A,5662
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 64
Date Collected: 2/18/03 2:39:38 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0262-11A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1694.8	0.3033	mg/L	0.01063	0.3033	mg/L	0.01063	3.50%

Sequence No.: 31
Sample ID: B0262-12A,5662
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 65
Date Collected: 2/18/03 2:41:53 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0262-12A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1811.4	0.3242	mg/L	0.00062	0.3242	mg/L	0.00062	0.19%

Sequence No.: 32
Sample ID: ICSA
Analyst:
Sample Wt:
Autosampler Location: 5
Date Collected: 2/18/03 2:44:08 PM
Sample Prep Volume:

Dilution: Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	1.9	0.0003	mg/L	0.00724	0.0003	mg/L	0.00724	>999.9%

Sequence No.: 33 Autosampler Location: 6
Sample ID: ICSAB Date Collected: 2/18/03 2:46:27 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	154345.7	27.622	mg/L	0.0211	27.622	mg/L	0.0211	0.08%

Sequence No.: 34 Autosampler Location: 3
Sample ID: CCV Date Collected: 2/18/03 2:48:49 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	138537.5	24.793	mg/L	0.1541	24.793	mg/L	0.1541	0.62%

Sequence No.: 35 Autosampler Location: 4
Sample ID: CCB Date Collected: 2/18/03 2:51:07 PM
Analyst:
Sample Wt: Sample Prep Volume:
Dilution: Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	54.1	0.0097	mg/L	0.01007	0.0097	mg/L	0.01007	104.01%

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
K 766.490	3	Lin Thru 0	0.0	1802	0.00000	0.999993	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/18/03 3:03:57 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	90755.8	50.375	mg/L	0.0585	50.375	mg/L	0.0585	0.12%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/18/03 3:06:14 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	45883.7	25.468	mg/L	0.0137	25.468	mg/L	0.0137	0.05%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/18/03 3:08:31 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	577.9	0.3208	mg/L	0.03941	0.3208	mg/L	0.03941	12.29%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/18/03 3:10:50 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	331.8	0.1842	mg/L	0.05131	0.1842	mg/L	0.05131	27.86%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/18/03 3:13:09 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	51654.1	28.671	mg/L	0.2322	28.671	mg/L	0.2322	0.81%

Sequence No.: 32
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/18/03 4:05:51 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	-206.4	-0.1146	mg/L	0.03725	-0.1146	mg/L	0.03725	32.52%

Sequence No.: 33
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/18/03 4:08:10 PM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	47404.9	26.312	mg/L	0.0478	26.312	mg/L	0.0478	0.18%

Sequence No.: 34
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/18/03 4:10:31 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	43439.6	24.111	mg/L	0.3617	24.111	mg/L	0.3617	1.50%

Sequence No.: 35
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/18/03 4:12:48 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	137.8	0.0765	mg/L	0.01397	0.0765	mg/L	0.01397	18.27%

Na 330.237	77.7	0.0640 mg/L	0.22261	0.0640 mg/L	0.22261	347.70%
Cd 226.502	1.0	0.0001 mg/L	0.00003	0.0001 mg/L	0.00003	54.51%
Ti 334.940	-37.8	-0.0001 mg/L	0.00008	-0.0001 mg/L	0.00008	117.20%
Ca 227.546	8.1	0.0879 mg/L	0.00300	0.0879 mg/L	0.00300	3.41%

Sequence No.: 12 **Autosampler Location: 5**
Sample ID: ICSA **Date Collected: 2/18/03 5:54:11 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3177.2	0.0036	mg/L	0.00051	0.0036	mg/L	0.00051	14.10%
Al 308.215	13999342.9	486.50	mg/L	0.629	486.50	mg/L	0.629	0.13%
As 188.979	3.7	-0.0089	mg/L	0.00133	-0.0089	mg/L	0.00133	15.07%
Ba 233.527	-442.1	-0.0079	mg/L	0.00099	-0.0079	mg/L	0.00099	12.65%
Be 313.107	140.3	0.0001	mg/L	0.00002	0.0001	mg/L	0.00002	27.78%
Co 228.616	3.7	0.0031	mg/L	0.00043	0.0031	mg/L	0.00043	13.63%
Cr 267.716	-72.5	-0.0013	mg/L	0.00011	-0.0013	mg/L	0.00011	8.50%
Cu 324.752	-3041.3	-0.0003	mg/L	0.00015	-0.0003	mg/L	0.00015	52.33%
Fe 273.955	5545098.7	172.50	mg/L	0.219	172.50	mg/L	0.219	0.13%
Mg 279.077	7412128.4	480.69	mg/L	0.862	480.69	mg/L	0.862	0.18%
Mn 257.610	3057.2	-0.0033	mg/L	0.00006	-0.0033	mg/L	0.00006	1.87%
Ni 231.604	-877.9	-0.0003	mg/L	0.00043	-0.0003	mg/L	0.00043	155.41%
Pb 220.353	562.8	0.0103	mg/L	0.00253	0.0103	mg/L	0.00253	24.68%
Sb 206.836	-6.2	-0.0105	mg/L	0.00119	-0.0105	mg/L	0.00119	11.31%
Se 196.026	-50.0	-0.0137	mg/L	0.00146	-0.0137	mg/L	0.00146	10.66%
Tl 190.801	-52.2	0.0072	mg/L	0.00203	0.0072	mg/L	0.00203	28.00%
V 292.402	7244.9	0.0025	mg/L	0.00028	0.0025	mg/L	0.00028	11.28%
Zn 206.200	383.3	0.0115	mg/L	0.00019	0.0115	mg/L	0.00019	1.63%
Na 330.237	-324.3	-0.0058	mg/L	0.02206	-0.0058	mg/L	0.02206	382.68%
Cd 226.502	73.1	-0.0042	mg/L	0.00024	-0.0042	mg/L	0.00024	5.65%
Ti 334.940	-4786.4	-0.0069	mg/L	0.00005	-0.0069	mg/L	0.00005	0.72%
Ca 227.546	45267.4	492.57	mg/L	4.514	492.57	mg/L	4.514	0.92%

Sequence No.: 13 **Autosampler Location: 6**
Sample ID: ICSAB **Date Collected: 2/18/03 5:58:24 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	29313.3	0.2065	mg/L	0.00141	0.2065	mg/L	0.00141	0.69%
Al 308.215	13790590.6	479.24	mg/L	1.618	479.24	mg/L	1.618	0.34%
As 188.979	155.3	0.0916	mg/L	0.00025	0.0916	mg/L	0.00025	0.27%
Ba 233.527	21477.7	0.4658	mg/L	0.00197	0.4658	mg/L	0.00197	0.42%
Be 313.107	922408.0	0.4614	mg/L	0.00210	0.4614	mg/L	0.00210	0.46%
Co 228.616	6205.9	0.4348	mg/L	0.00066	0.4348	mg/L	0.00066	0.15%
Cr 267.716	22972.0	0.4497	mg/L	0.00416	0.4497	mg/L	0.00416	0.92%
Cu 324.752	95000.0	0.4909	mg/L	0.00561	0.4909	mg/L	0.00561	1.14%
Fe 273.955	5475688.6	170.35	mg/L	0.352	170.35	mg/L	0.352	0.21%
Mg 279.077	7308442.4	473.97	mg/L	0.883	473.97	mg/L	0.883	0.19%
Mn 257.610	188694.5	0.4576	mg/L	0.00279	0.4576	mg/L	0.00279	0.61%
Ni 231.604	7866.3	0.8647	mg/L	0.00011	0.8647	mg/L	0.00011	0.01%
Pb 220.353	1335.2	0.4697	mg/L	0.00399	0.4697	mg/L	0.00399	0.85%
Sb 206.836	478.2	0.5475	mg/L	0.00159	0.5475	mg/L	0.00159	0.29%
Se 196.026	276.9	0.4789	mg/L	0.00086	0.4789	mg/L	0.00086	0.18%
Tl 190.801	116.3	0.0981	mg/L	0.00307	0.0981	mg/L	0.00307	3.13%
V 292.402	49022.5	0.4678	mg/L	0.00418	0.4678	mg/L	0.00418	0.89%
Zn 206.200	10642.2	0.8673	mg/L	0.00119	0.8673	mg/L	0.00119	0.14%
Na 330.237	28271.7	23.554	mg/L	0.2347	23.554	mg/L	0.2347	1.00%
Cd 226.502	16274.9	0.9043	mg/L	0.00197	0.9043	mg/L	0.00197	0.22%
Ti 334.940	-4732.3	-0.0069	mg/L	0.00006	-0.0069	mg/L	0.00006	0.86%

Fe 273.955	1164580.2	36.236	mg/L	0.3847	36.236	mg/L	0.3847	1.06%
Mg 279.077	73597.9	4.7620	mg/L	0.04949	4.7620	mg/L	0.04949	1.04%
Mn 257.610	222605.1	0.5530	mg/L	0.00645	0.5530	mg/L	0.00645	1.17%
Ni 231.604	7.3	0.0179	mg/L	0.00036	0.0179	mg/L	0.00036	1.99%
Pb 220.353	145.3	0.0243	mg/L	0.00150	0.0243	mg/L	0.00150	6.17%
Sb 206.836	-5.4	-0.0079	mg/L	0.00342	-0.0079	mg/L	0.00342	43.12%
Se 196.026	-7.5	-0.0003	mg/L	0.00040	-0.0003	mg/L	0.00040	121.24%
Tl 190.801	-35.2	-0.0116	mg/L	0.00087	-0.0116	mg/L	0.00087	7.55%
V 292.402	8727.9	0.0941	mg/L	0.00154	0.0941	mg/L	0.00154	1.63%
Zn 206.200	627.3	0.0502	mg/L	0.00057	0.0502	mg/L	0.00057	1.13%
Na 330.237	21.6	0.1223	mg/L	0.03929	0.1223	mg/L	0.03929	32.13%
Cd 226.502	6.8	-0.0016	mg/L	0.00009	-0.0016	mg/L	0.00009	5.15%
Ti 334.940	1203659.9	2.2311	mg/L	0.02198	2.2311	mg/L	0.02198	0.99%
Ca 227.546	64.3	0.4904	mg/L	0.01302	0.4904	mg/L	0.01302	2.66%

Sequence No.: 29 **Autosampler Location: 60**
Sample ID: B0262-08ADUP,5662 **Date Collected: 2/18/03 7:04:16 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0262-08ADUP,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-341.2	0.0028	mg/L	0.00022	0.0028	mg/L	0.00022	7.61%
Al 308.215	2646124.9	91.968	mg/L	0.4143	91.968	mg/L	0.4143	0.45%
As 188.979	49.3	0.0280	mg/L	0.00056	0.0280	mg/L	0.00056	2.00%
Ba 233.527	9835.9	0.2136	mg/L	0.00025	0.2136	mg/L	0.00025	0.12%
Be 313.107	-1612.7	0.0029	mg/L	0.00001	0.0029	mg/L	0.00001	0.46%
Co 228.616	187.4	0.0095	mg/L	0.00007	0.0095	mg/L	0.00007	0.69%
Cr 267.716	4100.2	0.0811	mg/L	0.00035	0.0811	mg/L	0.00035	0.43%
Cu 324.752	1533.6	0.0092	mg/L	0.00001	0.0092	mg/L	0.00001	0.15%
Fe 273.955	1191871.3	37.089	mg/L	0.1960	37.089	mg/L	0.1960	0.53%
Mg 279.077	77913.6	5.0430	mg/L	0.02206	5.0430	mg/L	0.02206	0.44%
Mn 257.610	289913.6	0.7201	mg/L	0.00425	0.7201	mg/L	0.00425	0.59%
Ni 231.604	3.3	0.0178	mg/L	0.00028	0.0178	mg/L	0.00028	1.57%
Pb 220.353	153.6	0.0279	mg/L	0.00122	0.0279	mg/L	0.00122	4.38%
Sb 206.836	-3.2	-0.0054	mg/L	0.00064	-0.0054	mg/L	0.00064	11.74%
Se 196.026	-8.0	-0.0009	mg/L	0.00098	-0.0009	mg/L	0.00098	114.68%
Tl 190.801	-37.4	-0.0124	mg/L	0.00147	-0.0124	mg/L	0.00147	11.88%
V 292.402	8634.1	0.0927	mg/L	0.00072	0.0927	mg/L	0.00072	0.78%
Zn 206.200	643.5	0.0512	mg/L	0.00004	0.0512	mg/L	0.00004	0.07%
Na 330.237	-143.4	-0.0058	mg/L	0.03924	-0.0058	mg/L	0.03924	675.98%
Cd 226.502	9.2	-0.0016	mg/L	0.00029	-0.0016	mg/L	0.00029	18.19%
Ti 334.940	1361074.3	2.5229	mg/L	0.01380	2.5229	mg/L	0.01380	0.55%
Ca 227.546	65.2	0.4912	mg/L	0.04989	0.4912	mg/L	0.04989	10.16%

Sequence No.: 30
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/18/03 7:08:27 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-3320.4	0.0023	mg/L	0.00034	0.0023	mg/L	0.00034	14.74%
Al 308.215	13704366.8	476.25	mg/L	1.236	476.25	mg/L	1.236	0.26%
As 188.979	6.5	-0.0068	mg/L	0.00173	-0.0068	mg/L	0.00173	25.68%
Ba 233.527	-469.7	-0.0085	mg/L	0.00086	-0.0085	mg/L	0.00086	10.12%
Be 313.107	-120.1	-0.0001	mg/L	0.00004	-0.0001	mg/L	0.00004	54.94%
Co 228.616	4.2	0.0031	mg/L	0.00028	0.0031	mg/L	0.00028	9.11%
Cr 267.716	-83.6	-0.0015	mg/L	0.00011	-0.0015	mg/L	0.00011	6.95%
Cu 324.752	-3659.7	-0.0036	mg/L	0.00014	-0.0036	mg/L	0.00014	3.84%
Fe 273.955	5457271.1	169.77	mg/L	0.222	169.77	mg/L	0.222	0.13%
Mg 279.077	7301981.9	473.55	mg/L	0.652	473.55	mg/L	0.652	0.14%
Mn 257.610	3005.0	-0.0033	mg/L	0.00007	-0.0033	mg/L	0.00007	2.05%

ICSA

Ni 231.604	-877.7	-0.0016 mg/L	0.00094	-0.0016 mg/L	0.00094	57.63%
Pb 220.353	553.1	0.0113 mg/L	0.00047	0.0113 mg/L	0.00047	4.18%
Sb 206.836	-11.4	-0.0164 mg/L	0.00266	-0.0164 mg/L	0.00266	16.23%
Se 196.026	-38.8	0.0020 mg/L	0.00773	0.0020 mg/L	0.00773	380.30%
Tl 190.801	-52.5	-0.0064 mg/L	0.00267	-0.0064 mg/L	0.00267	41.90%
V 292.402	7150.3	0.0026 mg/L	0.00012	0.0026 mg/L	0.00012	4.53%
Zn 206.200	368.1	0.0105 mg/L	0.00017	0.0105 mg/L	0.00017	1.58%
Na 330.237	-341.6	-0.0242 mg/L	0.02681	-0.0242 mg/L	0.02681	111.00%
Cd 226.502	68.2	-0.0044 mg/L	0.00035	-0.0044 mg/L	0.00035	8.08%
Ti 334.940	-4369.0	-0.0062 mg/L	0.00003	-0.0062 mg/L	0.00003	0.51%
Ca 227.546	44488.1	484.09 mg/L	5.776	484.09 mg/L	5.776	1.19%

Sequence No.: 31 **Autosampler Location: 6**
Sample ID: ICSAB **Date Collected: 2/18/03 7:12:40 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	28598.8	0.2019	mg/L	0.00021	0.2019	mg/L	0.00021	0.11%
Al 308.215	13642134.5	474.09	mg/L	5.185	474.09	mg/L	5.185	1.09%
As 188.979	154.3	0.0911	mg/L	0.00177	0.0911	mg/L	0.00177	1.94%
Ba 233.527	21142.5	0.4586	mg/L	0.00029	0.4586	mg/L	0.00029	0.06%
Be 313.107	908539.1	0.4544	mg/L	0.00169	0.4544	mg/L	0.00169	0.37%
Co 228.616	6114.6	0.4284	mg/L	0.00114	0.4284	mg/L	0.00114	0.27%
Cr 267.716	22579.0	0.4420	mg/L	0.00013	0.4420	mg/L	0.00013	0.03%
Cu 324.752	91989.6	0.4757	mg/L	0.00008	0.4757	mg/L	0.00008	0.02%
Fe 273.955	5430220.4	168.93	mg/L	1.442	168.93	mg/L	1.442	0.85%
Mg 279.077	7254903.5	470.50	mg/L	3.919	470.50	mg/L	3.919	0.83%
Mn 257.610	185142.5	0.4490	mg/L	0.00032	0.4490	mg/L	0.00032	0.07%
Ni 231.604	7748.4	0.8523	mg/L	0.00115	0.8523	mg/L	0.00115	0.13%
Pb 220.353	1322.4	0.4655	mg/L	0.00808	0.4655	mg/L	0.00808	1.73%
Sb 206.836	461.7	0.5285	mg/L	0.00109	0.5285	mg/L	0.00109	0.21%
Se 196.026	269.5	0.4670	mg/L	0.00246	0.4670	mg/L	0.00246	0.53%
Tl 190.801	116.9	0.0981	mg/L	0.00136	0.0981	mg/L	0.00136	1.39%
V 292.402	48152.6	0.4587	mg/L	0.00003	0.4587	mg/L	0.00003	0.01%
Zn 206.200	10555.1	0.8600	mg/L	0.00366	0.8600	mg/L	0.00366	0.43%
Na 330.237	27435.1	22.862	mg/L	0.0746	22.862	mg/L	0.0746	0.33%
Cd 226.502	16161.3	0.8980	mg/L	0.00390	0.8980	mg/L	0.00390	0.43%
Ti 334.940	-4546.9	-0.0066	mg/L	0.00006	-0.0066	mg/L	0.00006	0.94%
Ca 227.546	44144.9	480.32	mg/L	0.394	480.32	mg/L	0.394	0.08%

Sequence No.: 32 **Autosampler Location: 3**
Sample ID: CCV **Date Collected: 2/18/03 7:16:57 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	199992.5	1.2515	mg/L	0.00731	1.2515	mg/L	0.00731	0.58%
Al 308.215	273429.3	9.4885	mg/L	0.04940	9.4885	mg/L	0.04940	0.52%
As 188.979	759.5	0.5023	mg/L	0.00003	0.5023	mg/L	0.00003	0.01%
Ba 233.527	468494.1	10.129	mg/L	0.0870	10.129	mg/L	0.0870	0.86%
Be 313.107	484997.2	0.2426	mg/L	0.00266	0.2426	mg/L	0.00266	1.09%
Co 228.616	35602.9	2.4785	mg/L	0.00477	2.4785	mg/L	0.00477	0.19%
Cr 267.716	49879.8	0.9764	mg/L	0.00466	0.9764	mg/L	0.00466	0.48%
Cu 324.752	241446.2	1.2094	mg/L	0.00768	1.2094	mg/L	0.00768	0.64%
Fe 273.955	158664.5	4.9484	mg/L	0.02755	4.9484	mg/L	0.02755	0.56%
Mg 279.077	372022.2	24.149	mg/L	0.0524	24.149	mg/L	0.0524	0.22%
Mn 257.610	986019.3	2.4473	mg/L	0.01938	2.4473	mg/L	0.01938	0.79%
Ni 231.604	24994.5	2.4778	mg/L	0.00920	2.4778	mg/L	0.00920	0.37%
Pb 220.353	862.9	0.5016	mg/L	0.00398	0.5016	mg/L	0.00398	0.79%
Sb 206.836	408.5	0.4699	mg/L	0.00884	0.4699	mg/L	0.00884	1.88%

Sequence No.: 39
Sample ID: B0262-11A,5662
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 64
Date Collected: 2/18/03 7:45:48 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0262-11A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-2357.6	0.0056	mg/L	0.00026	0.0056	mg/L	0.00026	4.56%
Al 308.215	4471909.5	155.42	mg/L	1.498	155.42	mg/L	1.498	0.96%
As 188.979	205.1	0.1315	mg/L	0.00194	0.1315	mg/L	0.00194	1.47%
Ba 233.527	33931.4	0.7374	mg/L	0.00016	0.7374	mg/L	0.00016	0.02%
Be 313.107	1436.2	0.0053	mg/L	0.00006	0.0053	mg/L	0.00006	1.17%
Co 228.616	816.9	0.0540	mg/L	0.00053	0.0540	mg/L	0.00053	0.98%
Cr 267.716	10526.5	0.2091	mg/L	0.00060	0.2091	mg/L	0.00060	0.29%
Cu 324.752	23528.5	0.1281	mg/L	0.00026	0.1281	mg/L	0.00026	0.20%
Fe 273.955	4402054.0	136.92	mg/L	1.008	136.92	mg/L	1.008	0.74%
Mg 279.077	259416.0	16.789	mg/L	0.0106	16.789	mg/L	0.0106	0.06%
Mn 257.610	1195144.8	2.9701	mg/L	0.02159	2.9701	mg/L	0.02159	0.73%
Ni 231.604	327.7	0.0996	mg/L	0.00063	0.0996	mg/L	0.00063	0.63%
Pb 220.353	976.9	0.4656	mg/L	0.00337	0.4656	mg/L	0.00337	0.72%
Sb 206.836	-1.3	-0.0057	mg/L	0.00246	-0.0057	mg/L	0.00246	43.14%
Se 196.026	-17.3	0.0038	mg/L	0.00706	0.0038	mg/L	0.00706	184.16%
Tl 190.801	-44.6	-0.0080	mg/L	0.00162	-0.0080	mg/L	0.00162	20.32%
V 292.402	27482.1	0.3002	mg/L	0.00042	0.3002	mg/L	0.00042	0.14%
Zn 206.200	5877.5	0.4863	mg/L	0.00067	0.4863	mg/L	0.00067	0.14%
Na 330.237	768.3	0.9078	mg/L	0.09023	0.9078	mg/L	0.09023	9.94%
Cd 226.502	104.0	-0.0012	mg/L	0.00007	-0.0012	mg/L	0.00007	5.79%
Ti 334.940	1689296.8	3.1313	mg/L	0.02932	3.1313	mg/L	0.02932	0.94%
Ca 227.546	1303.6	13.466	mg/L	0.0249	13.466	mg/L	0.0249	0.18%

Sequence No.: 40
Sample ID: B0262-12A,5662
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 65
Date Collected: 2/18/03 7:49:55 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0262-12A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-2086.4	0.0058	mg/L	0.00004	0.0058	mg/L	0.00004	0.78%
Al 308.215	4149367.9	144.21	mg/L	0.929	144.21	mg/L	0.929	0.64%
As 188.979	171.0	0.1095	mg/L	0.00416	0.1095	mg/L	0.00416	3.80%
Ba 233.527	114138.3	2.4713	mg/L	0.01990	2.4713	mg/L	0.01990	0.81%
Be 313.107	2996.9	0.0054	mg/L	0.00004	0.0054	mg/L	0.00004	0.70%
Co 228.616	714.0	0.0474	mg/L	0.00009	0.0474	mg/L	0.00009	0.18%
Cr 267.716	9569.5	0.1901	mg/L	0.00042	0.1901	mg/L	0.00042	0.22%
Cu 324.752	19584.3	0.1081	mg/L	0.00079	0.1081	mg/L	0.00079	0.73%
Fe 273.955	4026196.8	125.22	mg/L	0.829	125.22	mg/L	0.829	0.66%
Mg 279.077	195741.7	12.657	mg/L	0.0988	12.657	mg/L	0.0988	0.78%
Mn 257.610	821613.2	2.0425	mg/L	0.01426	2.0425	mg/L	0.01426	0.70%
Ni 231.604	307.0	0.0919	mg/L	0.00014	0.0919	mg/L	0.00014	0.15%
Pb 220.353	1035.9	0.5085	mg/L	0.00337	0.5085	mg/L	0.00337	0.66%
Sb 206.836	0.0	-0.0037	mg/L	0.00068	-0.0037	mg/L	0.00068	18.44%
Se 196.026	-19.0	-0.0010	mg/L	0.00078	-0.0010	mg/L	0.00078	81.16%
Tl 190.801	-41.1	-0.0078	mg/L	0.00032	-0.0078	mg/L	0.00032	4.07%
V 292.402	27492.5	0.3013	mg/L	0.00144	0.3013	mg/L	0.00144	0.48%
Zn 206.200	6012.1	0.4982	mg/L	0.00030	0.4982	mg/L	0.00030	0.06%
Na 330.237	1075.6	1.1332	mg/L	0.06253	1.1332	mg/L	0.06253	5.52%
Cd 226.502	94.5	-0.0011	mg/L	0.00005	-0.0011	mg/L	0.00005	5.16%
Ti 334.940	1440489.3	2.6701	mg/L	0.01824	2.6701	mg/L	0.01824	0.68%
Ca 227.546	1797.2	18.918	mg/L	0.0166	18.918	mg/L	0.0166	0.09%

Sequence No.: 41
Sample ID: ICSA

Autosampler Location: 5
Date Collected: 2/18/03 7:54:03 PM

Analyst:
Sample Wt:
Dilution:

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-3376.6	0.0020	mg/L	0.00001	0.0020	mg/L	0.00001	0.32%
Al 308.215	13732937.7	477.24	mg/L	0.440	477.24	mg/L	0.440	0.09%
As 188.979	7.0	-0.0064	mg/L	0.00036	-0.0064	mg/L	0.00036	5.55%
Ba 233.527	-414.8	-0.0073	mg/L	0.00053	-0.0073	mg/L	0.00053	7.32%
Be 313.107	-110.0	-0.0001	mg/L	0.00002	-0.0001	mg/L	0.00002	32.12%
Co 228.616	0.4	0.0029	mg/L	0.00014	0.0029	mg/L	0.00014	4.98%
Cr 267.716	-75.5	-0.0014	mg/L	0.00033	-0.0014	mg/L	0.00033	23.56%
Cu 324.752	-3648.6	-0.0035	mg/L	0.00010	-0.0035	mg/L	0.00010	2.69%
Fe 273.955	5471884.5	170.23	mg/L	0.046	170.23	mg/L	0.046	0.03%
Mg 279.077	7321271.3	474.80	mg/L	0.022	474.80	mg/L	0.022	0.00%
Mn 257.610	3114.7	-0.0031	mg/L	0.00002	-0.0031	mg/L	0.00002	0.68%
Ni 231.604	-881.1	-0.0017	mg/L	0.00026	-0.0017	mg/L	0.00026	14.80%
Pb 220.353	550.6	0.0091	mg/L	0.00087	0.0091	mg/L	0.00087	9.55%
Sb 206.836	-6.1	-0.0103	mg/L	0.00953	-0.0103	mg/L	0.00953	92.48%
Se 196.026	-41.6	-0.0020	mg/L	0.00246	-0.0020	mg/L	0.00246	126.00%
Tl 190.801	-51.5	0.0070	mg/L	0.00056	0.0070	mg/L	0.00056	8.03%
V 292.402	7149.7	0.0024	mg/L	0.00089	0.0024	mg/L	0.00089	37.15%
Zn 206.200	378.4	0.0114	mg/L	0.00004	0.0114	mg/L	0.00004	0.32%
Na 330.237	-262.8	-0.0415	mg/L	0.16354	0.0415	mg/L	0.16354	394.05%
Cd 226.502	68.5	-0.0044	mg/L	0.00002	-0.0044	mg/L	0.00002	0.56%
Ti 334.940	-4521.2	-0.0065	mg/L	0.00009	-0.0065	mg/L	0.00009	1.42%
Ca 227.546	45035.4	490.05	mg/L	2.358	490.05	mg/L	2.358	0.48%

Sequence No.: 42
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/18/03 7:58:16 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	28710.8	0.2027	mg/L	0.00171	0.2027	mg/L	0.00171	0.85%
Al 308.215	13700009.8	476.10	mg/L	0.150	476.10	mg/L	0.150	0.03%
As 188.979	149.6	0.0879	mg/L	0.00052	0.0879	mg/L	0.00052	0.59%
Ba 233.527	21373.9	0.4636	mg/L	0.00259	0.4636	mg/L	0.00259	0.56%
Be 313.107	917958.0	0.4592	mg/L	0.00180	0.4592	mg/L	0.00180	0.39%
Co 228.616	6141.2	0.4303	mg/L	0.00096	0.4303	mg/L	0.00096	0.22%
Cr 267.716	22572.0	0.4419	mg/L	0.00239	0.4419	mg/L	0.00239	0.54%
Cu 324.752	92065.1	0.4761	mg/L	0.00177	0.4761	mg/L	0.00177	0.37%
Fe 273.955	5452744.0	169.63	mg/L	0.226	169.63	mg/L	0.226	0.13%
Mg 279.077	7282896.3	472.32	mg/L	0.859	472.32	mg/L	0.859	0.18%
Mn 257.610	186540.7	0.4524	mg/L	0.00106	0.4524	mg/L	0.00106	0.23%
Ni 231.604	7790.2	0.8568	mg/L	0.00037	0.8568	mg/L	0.00037	0.04%
Pb 220.353	1324.1	0.4652	mg/L	0.00266	0.4652	mg/L	0.00266	0.57%
Sb 206.836	466.3	0.5338	mg/L	0.00372	0.5338	mg/L	0.00372	0.70%
Se 196.026	277.8	0.4798	mg/L	0.00840	0.4798	mg/L	0.00840	1.75%
Tl 190.801	119.1	0.0994	mg/L	0.00077	0.0994	mg/L	0.00077	0.77%
V 292.402	48516.3	0.4625	mg/L	0.00249	0.4625	mg/L	0.00249	0.54%
Zn 206.200	10676.7	0.8701	mg/L	0.00161	0.8701	mg/L	0.00161	0.18%
Na 330.237	27796.1	23.161	mg/L	0.1747	23.161	mg/L	0.1747	0.75%
Cd 226.502	16363.0	0.9093	mg/L	0.00211	0.9093	mg/L	0.00211	0.23%
Ti 334.940	-4599.0	-0.0067	mg/L	0.00017	-0.0067	mg/L	0.00017	2.58%
Ca 227.546	44313.4	482.15	mg/L	5.299	482.15	mg/L	5.299	1.10%

Sequence No.: 43
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/18/03 8:02:33 PM

Sample Prep Volume:
Data Type: Original

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-121	0.15	U	Aluminum	23813	-0.82	6680	-0.23	na	~~UJ~~ UL
Arsenic	WOD-SS-121	1.9		Aluminum	23813	-0.445	6680	-0.12	na	na
Barium	WOD-SS-121	14.4		Aluminum	23813	-0.425	6680	-0.12	na	na
Cadmium	WOD-SS-121	0.034	U	Aluminum	23813	-0.22	6680	-0.06	na	~~UJ~~ UL
Chromium	WOD-SS-121	6		Aluminum	23813	-0.075	6680	-0.02	na	na
Cobalt	WOD-SS-121	1.5		Aluminum	23813	0.155	6680	0.04	na	na
Lead	WOD-SS-121	5.6		Aluminum	23813	0.565	6680	0.16	na	na
Manganese	WOD-SS-121	41.8		Aluminum	23813	-0.165	6680	-0.05	na	na
Nickel	WOD-SS-121	3		Aluminum	23813	-0.085	6680	-0.02	na	na
Potassium	WOD-SS-121	200		Aluminum	23813	9.21	6680	2.58	na	na
Selenium	WOD-SS-121	0.44	U	Aluminum	23813	-0.685	6680	-0.19	na	~~UJ~~ UL
Silver	WOD-SS-121	0.46	B	Aluminum	23813	0.18	6680	0.05	na	na
Sodium	WOD-SS-121	12.9	B	Aluminum	23813	13.015	6680	3.65	na	na
Thallium	WOD-SS-121	0.15	U	Aluminum	23813	0.36	6680	0.10	na	na
Vanadium	WOD-SS-121	10.1		Aluminum	23813	0.13	6680	0.04	na	na
Zinc	WOD-SS-121	8.5		Aluminum	23813	0.575	6680	0.16	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-122	0.15	U	Aluminum	23813	-0.82	6900	-0.24	na	~~UJ~~ UL
Arsenic	WOD-SS-122	10.7		Aluminum	23813	-0.445	6900	-0.13	na	na
Barium	WOD-SS-122	24.4		Aluminum	23813	-0.425	6900	-0.12	na	na
Cadmium	WOD-SS-122	0.035	U	Aluminum	23813	-0.22	6900	-0.06	na	~~UJ~~ UL
Chromium	WOD-SS-122	9.6		Aluminum	23813	-0.075	6900	-0.02	na	na
Cobalt	WOD-SS-122	2		Aluminum	23813	0.155	6900	0.04	na	na
Lead	WOD-SS-122	10.7		Aluminum	23813	0.565	6900	0.16	na	na
Manganese	WOD-SS-122	94.1		Aluminum	23813	-0.165	6900	-0.05	na	na
Nickel	WOD-SS-122	3.6		Aluminum	23813	-0.085	6900	-0.02	na	na
Potassium	WOD-SS-122	277		Aluminum	23813	9.21	6900	2.67	na	na
Selenium	WOD-SS-122	0.46	U	Aluminum	23813	-0.685	6900	-0.20	na	~~UJ~~ UL
Silver	WOD-SS-122	0.34	B	Aluminum	23813	0.18	6900	0.05	na	na
Sodium	WOD-SS-122	12	B	Aluminum	23813	13.015	6900	3.77	na	na
Thallium	WOD-SS-122	0.15	U	Aluminum	23813	0.36	6900	0.10	na	na
Vanadium	WOD-SS-122	11.2		Aluminum	23813	0.13	6900	0.04	na	na
Zinc	WOD-SS-122	13.8		Aluminum	23813	0.575	6900	0.17	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-123	0.14	U	Aluminum	23813	-0.82	7420	-0.26	na	~~UJ~~ UL
Arsenic	WOD-SS-123	3.1		Aluminum	23813	-0.445	7420	-0.14	na	na
Barium	WOD-SS-123	26.6		Aluminum	23813	-0.425	7420	-0.13	na	na
Cadmium	WOD-SS-123	0.033	U	Aluminum	23813	-0.22	7420	-0.07	na	~~UJ~~ UL
Chromium	WOD-SS-123	8.5		Aluminum	23813	-0.075	7420	-0.02	na	na
Cobalt	WOD-SS-123	2.3		Aluminum	23813	0.155	7420	0.05	na	na
Lead	WOD-SS-123	26.9		Aluminum	23813	0.565	7420	0.18	na	na
Manganese	WOD-SS-123	81.4		Aluminum	23813	-0.165	7420	-0.05	na	na
Nickel	WOD-SS-123	4.3		Aluminum	23813	-0.085	7420	-0.03	na	na
Potassium	WOD-SS-123	316		Aluminum	23813	9.21	7420	2.87	na	na
Selenium	WOD-SS-123	0.43	U	Aluminum	23813	-0.685	7420	-0.21	na	~~UJ~~ UL
Silver	WOD-SS-123	0.36	B	Aluminum	23813	0.18	7420	0.06	na	na
Sodium	WOD-SS-123	14.3	B	Aluminum	23813	13.015	7420	4.06	na	na
Thallium	WOD-SS-123	0.14	U	Aluminum	23813	0.36	7420	0.11	na	na
Vanadium	WOD-SS-123	15.7		Aluminum	23813	0.13	7420	0.04	na	na
Zinc	WOD-SS-123	17.3		Aluminum	23813	0.575	7420	0.18	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-125	0.16	U	Aluminum	23813	-0.82	8450	-0.29	na	~~UJ~~ UL
Arsenic	WOD-SS-125	7.2		Aluminum	23813	-0.445	8450	-0.16	na	na
Barium	WOD-SS-125	40.1		Aluminum	23813	-0.425	8450	-0.15	na	na
Cadmium	WOD-SS-125	0.038	U	Aluminum	23813	-0.22	8450	-0.08	na	~~UJ~~ UL
Chromium	WOD-SS-125	11.4		Aluminum	23813	-0.075	8450	-0.03	na	na
Cobalt	WOD-SS-125	2.9		Aluminum	23813	0.155	8450	0.06	na	na
Lead	WOD-SS-125	25.3		Aluminum	23813	0.565	8450	0.20	na	na
Manganese	WOD-SS-125	161		Aluminum	23813	-0.165	8450	-0.06	na	na
Nickel	WOD-SS-125	5.4		Aluminum	23813	-0.085	8450	-0.03	na	na
Potassium	WOD-SS-125	634		Aluminum	23813	9.21	8450	3.27	na	na
Selenium	WOD-SS-125	0.49	U	Aluminum	23813	-0.685	8450	-0.24	na	~~UJ~~ UL
Silver	WOD-SS-125	0.31	B	Aluminum	23813	0.18	8450	0.06	na	na
Sodium	WOD-SS-125	16.5	B	Aluminum	23813	13.015	8450	4.62	na	na
Thallium	WOD-SS-125	0.16	U	Aluminum	23813	0.36	8450	0.13	na	na
Vanadium	WOD-SS-125	16.3		Aluminum	23813	0.13	8450	0.05	na	na
Zinc	WOD-SS-125	26.4		Aluminum	23813	0.575	8450	0.20	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-121-1012	0.15	U	Aluminum	23813	-0.82	6050	-0.21	na	~~UJ~~UL
Arsenic	WOD-SU-121-1012	1.5		Aluminum	23813	-0.445	6050	-0.11	na	na
Barium	WOD-SU-121-1012	18.5		Aluminum	23813	-0.425	6050	-0.11	na	na
Cadmium	WOD-SU-121-1012	0.034	U	Aluminum	23813	-0.22	6050	-0.06	na	~~UJ~~UL
Chromium	WOD-SU-121-1012	4.5		Aluminum	23813	-0.075	6050	-0.02	na	na
Cobalt	WOD-SU-121-1012	0.55		Aluminum	23813	0.155	6050	0.04	na	na
Lead	WOD-SU-121-1012	1.6		Aluminum	23813	0.565	6050	0.14	na	na
Manganese	WOD-SU-121-1012	21.3		Aluminum	23813	-0.165	6050	-0.04	na	na
Nickel	WOD-SU-121-1012	1.4		Aluminum	23813	-0.085	6050	-0.02	na	na
Potassium	WOD-SU-121-1012	211		Aluminum	23813	9.21	6050	2.34	na	na
Selenium	WOD-SU-121-1012	0.44	U	Aluminum	23813	-0.685	6050	-0.17	na	~~UJ~~UL
Silver	WOD-SU-121-1012	0.26	B	Aluminum	23813	0.18	6050	0.05	na	na
Sodium	WOD-SU-121-1012	14.1	B	Aluminum	23813	13.015	6050	3.31	na	na
Thallium	WOD-SU-121-1012	0.15	U	Aluminum	23813	0.36	6050	0.09	na	na
Vanadium	WOD-SU-121-1012	6.3		Aluminum	23813	0.13	6050	0.03	na	na
Zinc	WOD-SU-121-1012	3.3		Aluminum	23813	0.575	6050	0.15	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-122-1012	0.16	U	Aluminum	23813	-0.82	11400	-0.39	na	~~UJ~~UL
Arsenic	WOD-SU-122-1012	3.2		Aluminum	23813	-0.445	11400	-0.21	na	na
Barium	WOD-SU-122-1012	46.8		Aluminum	23813	-0.425	11400	-0.20	na	na
Cadmium	WOD-SU-122-1012	0.038	U	Aluminum	23813	-0.22	11400	-0.11	na	~~UJ~~UL
Chromium	WOD-SU-122-1012	9.8		Aluminum	23813	-0.075	11400	-0.04	na	na
Cobalt	WOD-SU-122-1012	1.1		Aluminum	23813	0.155	11400	0.07	na	na
Lead	WOD-SU-122-1012	2.6		Aluminum	23813	0.565	11400	0.27	~~J~~ K	na
Manganese	WOD-SU-122-1012	85.8		Aluminum	23813	-0.165	11400	-0.08	na	na
Nickel	WOD-SU-122-1012	2.6		Aluminum	23813	-0.085	11400	-0.04	na	na
Potassium	WOD-SU-122-1012	515		Aluminum	23813	9.21	11400	4.41	na	na
Selenium	WOD-SU-122-1012	0.49	U	Aluminum	23813	-0.685	11400	-0.33	na	~~UJ~~UL
Silver	WOD-SU-122-1012	0.33	B	Aluminum	23813	0.18	11400	0.09	na	na
Sodium	WOD-SU-122-1012	17.6	B	Aluminum	23813	13.015	11400	6.23	na	na
Thallium	WOD-SU-122-1012	0.16	U	Aluminum	23813	0.36	11400	0.17	na	na
Vanadium	WOD-SU-122-1012	12.6		Aluminum	23813	0.13	11400	0.06	na	na
Zinc	WOD-SU-122-1012	5.6		Aluminum	23813	0.575	11400	0.28	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-125-0203	0.14	U	Aluminum	23813	-0.82	6570	-0.23	na	~~UJ~~UL
Arsenic	WOD-SU-125-0203	5		Aluminum	23813	-0.445	6570	-0.12	na	na
Barium	WOD-SU-125-0203	113		Aluminum	23813	-0.425	6570	-0.12	na	na
Cadmium	WOD-SU-125-0203	0.032	U	Aluminum	23813	-0.22	6570	-0.06	na	~~UJ~~UL
Chromium	WOD-SU-125-0203	8.7		Aluminum	23813	-0.075	6570	-0.02	na	na
Cobalt	WOD-SU-125-0203	2.2		Aluminum	23813	0.155	6570	0.04	na	na
Lead	WOD-SU-125-0203	23.2		Aluminum	23813	0.565	6570	0.16	na	na
Manganese	WOD-SU-125-0203	93		Aluminum	23813	-0.165	6570	-0.05	na	na
Nickel	WOD-SU-125-0203	4.2		Aluminum	23813	-0.085	6570	-0.02	na	na
Potassium	WOD-SU-125-0203	258		Aluminum	23813	9.21	6570	2.54	na	na
Selenium	WOD-SU-125-0203	0.41	U	Aluminum	23813	-0.685	6570	-0.19	na	~~UJ~~UL
Silver	WOD-SU-125-0203	0.26	B	Aluminum	23813	0.18	6570	0.05	na	na
Sodium	WOD-SU-125-0203	14.8	B	Aluminum	23813	13.015	6570	3.59	na	na
Thallium	WOD-SU-125-0203	0.14	U	Aluminum	23813	0.36	6570	0.10	na	na
Vanadium	WOD-SU-125-0203	13.7		Aluminum	23813	0.13	6570	0.04	na	na
Zinc	WOD-SU-125-0203	22.7		Aluminum	23813	0.575	6570	0.16	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-DUP07	0.14	U	Aluminum	23813	-0.82	8280	-0.29	na	~~UJ~~UL
Arsenic	WOD-SU-DUP07	1.6		Aluminum	23813	-0.445	8280	-0.15	na	na
Barium	WOD-SU-DUP07	30.4		Aluminum	23813	-0.425	8280	-0.15	na	na
Cadmium	WOD-SU-DUP07	0.034	U	Aluminum	23813	-0.22	8280	-0.08	na	~~UJ~~UL
Chromium	WOD-SU-DUP07	7.9		Aluminum	23813	-0.075	8280	-0.03	na	na
Cobalt	WOD-SU-DUP07	0.86		Aluminum	23813	0.155	8280	0.05	na	na
Lead	WOD-SU-DUP07	2.1		Aluminum	23813	0.565	8280	0.20	na	na
Manganese	WOD-SU-DUP07	47.9		Aluminum	23813	-0.165	8280	-0.06	na	na
Nickel	WOD-SU-DUP07	1.7		Aluminum	23813	-0.085	8280	-0.03	na	na
Potassium	WOD-SU-DUP07	347		Aluminum	23813	9.21	8280	3.20	na	na
Selenium	WOD-SU-DUP07	0.43	U	Aluminum	23813	-0.685	8280	-0.24	na	~~UJ~~UL
Silver	WOD-SU-DUP07	0.18	B	Aluminum	23813	0.18	8280	0.06	na	na
Sodium	WOD-SU-DUP07	12.9	B	Aluminum	23813	13.015	8280	4.53	na	na
Thallium	WOD-SU-DUP07	0.14	U	Aluminum	23813	0.36	8280	0.13	na	na
Vanadium	WOD-SU-DUP07	7.7		Aluminum	23813	0.13	8280	0.05	na	na
Zinc	WOD-SU-DUP07	3.5		Aluminum	23813	0.575	8280	0.20	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-121	0.15	U	Iron	8489	-0.82	5520	-0.53	na	~~UJ~~ UL
Arsenic	WOD-SS-121	1.9		Iron	8489	-0.445	5520	-0.29	~~J~~ L	na
Barium	WOD-SS-121	14.4		Iron	8489	-0.425	5520	-0.28	na	na
Cadmium	WOD-SS-121	0.034	U	Iron	8489	-0.22	5520	-0.14	na	~~UJ~~ UL
Chromium	WOD-SS-121	6		Iron	8489	-0.075	5520	-0.05	na	na
Cobalt	WOD-SS-121	1.5		Iron	8489	0.155	5520	0.10	na	na
Lead	WOD-SS-121	5.6		Iron	8489	0.565	5520	0.37	na	na
Manganese	WOD-SS-121	41.8		Iron	8489	-0.165	5520	-0.11	na	na
Nickel	WOD-SS-121	3		Iron	8489	-0.085	5520	-0.06	na	na
Potassium	WOD-SS-121	200		Iron	8489	9.21	5520	5.99	na	na
Selenium	WOD-SS-121	0.44	U	Iron	8489	-0.685	5520	-0.45	na	~~UJ~~ UL
Silver	WOD-SS-121	0.46	B	Iron	8489	0.18	5520	0.12	na	na
Sodium	WOD-SS-121	12.9	B	Iron	8489	13.015	5520	8.46	na	na
Thallium	WOD-SS-121	0.15	U	Iron	8489	0.36	5520	0.23	na	na
Vanadium	WOD-SS-121	10.1		Iron	8489	0.13	5520	0.08	na	na
Zinc	WOD-SS-121	8.5		Iron	8489	0.575	5520	0.37	na	na

(3)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-123	0.14	U	Iron	8489	-0.82	6840	-0.66	na	~~UJ~~ UL
Arsenic	WOD-SS-123	3.1		Iron	8489	-0.445	6840	-0.36	~~J~~ L	na
Barium	WOD-SS-123	26.6		Iron	8489	-0.425	6840	-0.34	na	na
Cadmium	WOD-SS-123	0.033	U	Iron	8489	-0.22	6840	-0.18	na	~~UJ~~ UL
Chromium	WOD-SS-123	8.5		Iron	8489	-0.075	6840	-0.06	na	na
Cobalt	WOD-SS-123	2.3		Iron	8489	0.155	6840	0.12	na	na
Lead	WOD-SS-123	26.9		Iron	8489	0.565	6840	0.46	na	na
Manganese	WOD-SS-123	81.4		Iron	8489	-0.165	6840	-0.13	na	na
Nickel	WOD-SS-123	4.3		Iron	8489	-0.085	6840	-0.07	na	na
Potassium	WOD-SS-123	316		Iron	8489	9.21	6840	7.42	na	na
Selenium	WOD-SS-123	0.43	U	Iron	8489	-0.685	6840	-0.55	na	~~UJ~~ UL
Silver	WOD-SS-123	0.36	B	Iron	8489	0.18	6840	0.15	na	na
Sodium	WOD-SS-123	14.3	B	Iron	8489	13.015	6840	10.49	na	na
Thallium	WOD-SS-123	0.14	U	Iron	8489	0.36	6840	0.29	na	na
Vanadium	WOD-SS-123	15.7		Iron	8489	0.13	6840	0.10	na	na
Zinc	WOD-SS-123	17.3		Iron	8489	0.575	6840	0.46	na	na

(3)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-125	0.16	U	Iron	8489	-0.82	7440	-0.72	na	~~UJ~~ UL
Arsenic	WOD-SS-125	7.2		Iron	8489	-0.445	7440	-0.39	na	na
Barium	WOD-SS-125	40.1		Iron	8489	-0.425	7440	-0.37	na	na
Cadmium	WOD-SS-125	0.038	U	Iron	8489	-0.22	7440	-0.19	na	~~UJ~~ UL
Chromium	WOD-SS-125	11.4		Iron	8489	-0.075	7440	-0.07	na	na
Cobalt	WOD-SS-125	2.9		Iron	8489	0.155	7440	0.14	na	na
Lead	WOD-SS-125	25.3		Iron	8489	0.565	7440	0.50	na	na
Manganese	WOD-SS-125	161		Iron	8489	-0.165	7440	-0.14	na	na
Nickel	WOD-SS-125	5.4		Iron	8489	-0.085	7440	-0.07	na	na
Potassium	WOD-SS-125	634		Iron	8489	9.21	7440	8.07	na	na
Selenium	WOD-SS-125	0.49	U	Iron	8489	-0.685	7440	-0.60	na	~~UJ~~ UL
Silver	WOD-SS-125	0.31	B	Iron	8489	0.18	7440	0.16	na	na
Sodium	WOD-SS-125	16.5	B	Iron	8489	13.015	7440	11.41	na	na
Thallium	WOD-SS-125	0.16	U	Iron	8489	0.36	7440	0.32	na	na
Vanadium	WOD-SS-125	16.3		Iron	8489	0.13	7440	0.11	na	na
Zinc	WOD-SS-125	26.4		Iron	8489	0.575	7440	0.50	na	na

(1)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-125-0203	0.14	U	Iron	8489	-0.82	5700	-0.55	na	~~UJ~~ UL
Arsenic	WOD-SU-125-0203	5		Iron	8489	-0.445	5700	-0.30	na	na
Barium	WOD-SU-125-0203	113		Iron	8489	-0.425	5700	-0.29	na	na
Cadmium	WOD-SU-125-0203	0.032	U	Iron	8489	-0.22	5700	-0.15	na	~~UJ~~ UL
Chromium	WOD-SU-125-0203	8.7		Iron	8489	-0.075	5700	-0.05	na	na
Cobalt	WOD-SU-125-0203	2.2		Iron	8489	0.155	5700	0.10	na	na
Lead	WOD-SU-125-0203	23.2		Iron	8489	0.565	5700	0.38	na	na
Manganese	WOD-SU-125-0203	93		Iron	8489	-0.165	5700	-0.11	na	na
Nickel	WOD-SU-125-0203	4.2		Iron	8489	-0.085	5700	-0.06	na	na
Potassium	WOD-SU-125-0203	258		Iron	8489	9.21	5700	6.18	na	na
Selenium	WOD-SU-125-0203	0.41	U	Iron	8489	-0.685	5700	-0.46	na	~~UJ~~ UL
Silver	WOD-SU-125-0203	0.26	B	Iron	8489	0.18	5700	0.12	na	na
Sodium	WOD-SU-125-0203	14.8	B	Iron	8489	13.015	5700	8.74	na	na
Thallium	WOD-SU-125-0203	0.14	U	Iron	8489	0.36	5700	0.24	na	na
Vanadium	WOD-SU-125-0203	13.7		Iron	8489	0.13	5700	0.09	na	na
Zinc	WOD-SU-125-0203	22.7		Iron	8489	0.575	5700	0.39	na	na

(1)

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-122-1012	0.16	U	Iron	8489	-0.82	5270	-0.51	na	~~UJ~~UL
Arsenic	WOD-SU-122-1012	3.2		Iron	8489	-0.445	5270	-0.28	na	na
Barium	WOD-SU-122-1012	46.8		Iron	8489	-0.425	5270	-0.26	na	na
Cadmium	WOD-SU-122-1012	0.038	U	Iron	8489	-0.22	5270	-0.14	na	~~UJ~~UL
Chromium	WOD-SU-122-1012	9.8		Iron	8489	-0.075	5270	-0.05	na	na
Cobalt	WOD-SU-122-1012	1.1		Iron	8489	0.155	5270	0.10	na	na
Lead	WOD-SU-122-1012	2.6		Iron	8489	0.565	5270	0.35	~~J~~K	na
Manganese	WOD-SU-122-1012	85.8		Iron	8489	-0.165	5270	-0.10	na	na
Nickel	WOD-SU-122-1012	2.6		Iron	8489	-0.085	5270	-0.05	na	na
Potassium	WOD-SU-122-1012	515		Iron	8489	9.21	5270	5.72	na	na
Selenium	WOD-SU-122-1012	0.49	U	Iron	8489	-0.685	5270	-0.43	na	~~UJ~~UL
Silver	WOD-SU-122-1012	0.33	B	Iron	8489	0.18	5270	0.11	na	na
Sodium	WOD-SU-122-1012	17.6	B	Iron	8489	13.015	5270	8.08	na	na
Thallium	WOD-SU-122-1012	0.16	U	Iron	8489	0.36	5270	0.22	na	na
Vanadium	WOD-SU-122-1012	12.6		Iron	8489	0.13	5270	0.08	na	na
Zinc	WOD-SU-122-1012	5.6		Iron	8489	0.575	5270	0.36	na	na

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SS-122	0.15	U	Iron	8489	-0.82	5480	-0.53	na	~~UJ~~UL
Arsenic	WOD-SS-122	10.7		Iron	8489	-0.445	5480	-0.29	na	na
Barium	WOD-SS-122	24.4		Iron	8489	-0.425	5480	-0.27	na	na
Cadmium	WOD-SS-122	0.035	U	Iron	8489	-0.22	5480	-0.14	na	~~UJ~~UL
Chromium	WOD-SS-122	9.6		Iron	8489	-0.075	5480	-0.05	na	na
Cobalt	WOD-SS-122	2		Iron	8489	0.155	5480	0.10	na	na
Lead	WOD-SS-122	10.7		Iron	8489	0.565	5480	0.36	na	na
Manganese	WOD-SS-122	94.1		Iron	8489	-0.165	5480	-0.11	na	na
Nickel	WOD-SS-122	3.6		Iron	8489	-0.085	5480	-0.05	na	na
Potassium	WOD-SS-122	277		Iron	8489	9.21	5480	5.95	na	na
Selenium	WOD-SS-122	0.46	U	Iron	8489	-0.685	5480	-0.44	na	~~UJ~~UL
Silver	WOD-SS-122	0.34	B	Iron	8489	0.18	5480	0.12	na	na
Sodium	WOD-SS-122	12	B	Iron	8489	13.015	5480	8.40	na	na
Thallium	WOD-SS-122	0.15	U	Iron	8489	0.36	5480	0.23	na	na
Vanadium	WOD-SS-122	11.2		Iron	8489	0.13	5480	0.08	na	na
Zinc	WOD-SS-122	13.8		Iron	8489	0.575	5480	0.37	na	na

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

SV1231012S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	12.1466		0.1394	U	21.14	57.5	N	P
Arsenic	75-125	21.5046		1.4196		21.14	95.0		P
Barium	75-125	423.2122		10.9238		422.71	97.5		P
Beryllium	75-125	10.0432		0.1295	B	10.54	94.1		P
Cadmium	75-125	10.5492		0.0325	U	10.54	100.1		P
Calcium									NR
Chromium	75-125	43.2357		3.5440		42.27	93.9		P
Cobalt	75-125	99.8517		0.3810	B	105.44	94.3		P
Copper	75-125	49.3577		0.7723	B	52.49	92.6		P
Iron									NR
Lead	75-125	22.2897		1.1286		21.14	100.1		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.7998		0.0178	U	0.71	112.6		CV
Nickel	75-125	99.4850		0.8331	B	105.44	93.6		P
Potassium									NR
Selenium	75-125	19.1116		0.4181	U	21.14	90.4		P
Silver	75-125	50.9569		0.1572	B	52.49	96.8		P
Sodium									NR
Thallium	75-125	20.3413		0.1394	U	21.14	96.2		P
Vanadium	75-125	101.4890		4.3711		105.44	92.1		P
Zinc	75-125	101.0989		2.3306		105.44	93.7		P
Cyanide									NR

Comments:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.
SV1231012A

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0262

Matrix (soil/water): SOIL___ Level (low/med): MED

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		427.76		3.00	U	455.0	94.0		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

SV1231012D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 92.0 % Solids for Duplicate: 92.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		4193.0213		4272.0074		1.9		P
Antimony		0.1394	U	0.1394	U			P
Arsenic	0.9290	1.4196		1.2984		8.9		P
Barium	9.2902	10.9238		9.9202		9.6		P
Beryllium		0.1295	B	0.1354	B	4.5		P
Cadmium		0.0325	U	0.0325	U			P
Calcium		22.7791	B	22.8151	B	0.2		P
Chromium	0.9290	3.5440		3.7656		6.1		P
Cobalt		0.3810	B	0.4410	B	14.6		P
Copper		0.7723	B	0.4284	B	57.3		P
Iron		1683.2214		1722.8043		2.3		P
Lead	0.4645	1.1286		1.2939		13.6		P
Magnesium		221.2016		234.2511		5.7		P
Manganese		25.6896		33.4498		26.2	*	P
Mercury		0.0178	U	0.0178	U			CV
Nickel		0.8331	B	0.8290	B	0.5		P
Potassium	46.4511	167.3045		180.3444		7.5		P
Selenium		0.4181	U	0.4181	U			P
Silver		0.1572	B	0.1322	B	17.3		P
Sodium		7.2467	B	6.7832	B	6.6		P
Thallium		0.1394	U	0.1394	U			P
Vanadium	2.3226	4.3711		4.3073		1.5		P
Zinc	2.3226	2.3306		2.3781		2.0		P
Cyanide								NR

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

SV1231012L

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Matrix (soil/water): SOIL Level (low/med): MED

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	90267.36		89352.86		1.0		P
Antimony	3.00	U	15.00	U			P
Arsenic	30.56		26.96	B	11.8 OK		P
Barium	235.17		232.50	B	1.1		P
Beryllium	2.79	B	2.54	B	9.0		P
Cadmium	0.70	U	3.50	U			P
Calcium	490.39	B	1200.00	U	100.0 OK		P
Chromium	76.30		76.20	B	0.1		P
Cobalt	8.20	B	8.05	B	1.8		P
Copper	16.63	B	20.62	B	24.0 OK		P
Iron	36236.39		37015.61		2.2		P
Lead	24.30		22.98	B	5.4		P
Magnesium	4762.03		4791.92		0.6		P
Manganese	553.05		557.40		0.8		P
Mercury							NR
Nickel	17.93	B	17.44	B	2.7		P
Potassium	3601.73		3538.56	B	1.8		P
Selenium	9.00	U	45.00	U			P
Silver	3.38	B	10.00	U	100.0 OK		P
Sodium	156.01	B	415.00	U	100.0 OK		P
Thallium	3.00	U	15.00	U			P
Vanadium	94.10		93.94	B	0.2		P
Zinc	50.17		53.26	B	6.2		P

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0262__

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20 1.0	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200 10	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50 2.5	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium	196.03		30	9.0	P
Silver	328.07		30 1.5	2.0	P
Sodium	589.59		1000	83.0	P
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/15/03	0.50	50
PBS	02/15/03	1.00	50
SV1211012	02/15/03	1.14	50
SV1221012	02/15/03	1.07	50
SV1231012	02/15/03	1.17	50
SV1231012D	02/15/03	1.17	50
SV1231012S	02/15/03	1.17	50
SV1240203	02/15/03	1.16	50
SV1250203	02/15/03	1.22	50
SVDUP07	02/15/03	1.14	50
WOD-SS-121	02/15/03	1.11	50
WOD-SS-122	02/15/03	1.16	50
WOD-SS-123	02/15/03	1.23	50
WOD-SS-124	02/15/03	1.08	50
WOD-SS-125	02/15/03	1.21	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_ Contract: ___ _

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0262

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/17/03		100
_PBW	02/17/03		100
_RB-021303__	02/17/03		138

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/17/03	0.60	100
PBS	02/17/03	0.60	100
SV1211012	02/17/03	0.60	100
SV1221012	02/17/03	0.66	100
SV1231012	02/17/03	0.61	100
SV1231012D	02/17/03	0.61	100
SV1231012S	02/17/03	0.61	100
SV1240203	02/17/03	0.65	100
SV1250203	02/17/03	0.62	100
SVDUP07	02/17/03	0.65	100
WOD-SS-121	02/17/03	0.62	100
WOD-SS-122	02/17/03	0.74	100
WOD-SS-123	02/17/03	0.71	100
WOD-SS-124	02/17/03	0.74	100
WOD-SS-125	02/17/03	0.75	100

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	02/15/03		50
PBW	02/15/03		50
RB-021303	02/15/03		50

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA_1A
Method: P

Start Date: 02/18/03
End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: ALBS SBAS ASAE BBED CCDA CCRO CCOU CFUE PBB MMGN MHGN NI KS SAE AG NAL TV ZN CN
S0	1.00	1334		X
S1	1.00	1336		X
S2	1.00	1338		X
S3	1.00	1341		X
ZZZZZZ	1.00	1343		
ICV	1.00	1345		X
ICB	1.00	1347		X
ICSA	1.00	1350		
ICSAB	1.00	1352		X
PBW	1.00	1354		X
LCSW	1.00	1357		X
RB-021303	1.00	1359		X
PBS	1.00	1401		X
LCSS	1.00	1403		X
CCV	1.00	1406		X
CCB	1.00	1408		X
WOD-SS-121	1.00	1410		X
SV1211012	1.00	1413		X
WOD-SS-122	1.00	1415		X
SV1221012	1.00	1417		X
SVDUP07	1.00	1419		X
WOD-SS-123	1.00	1422		X
SV1231012	1.00	1424		X
SV1231012D	1.00	1426		X
CCV	1.00	1429		X
CCB	1.00	1431		X
SV1231012L	1.00	1433		X
WOD-SS-124	1.00	1436		X
SV1240203	1.00	1438		X
WOD-SS-125	1.00	1440		X
SV1250203	1.00	1442		X
ICSA	1.00	1445		

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION
Contract:

Lab Code: MITKEM Case No.:
SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA_1A
Method: P

Start Date: 02/18/03
End Date: 02/18/03

EPA Sample No.	D/F	Time	% R	Analytes: ALSB ASSA ABSA BBE CCD CCA CCR CCO CCU FE PB MG NG NI KE SEG AGA NAL TL VN ZN CN
ICSAB	1.00	1447		X
CCV	1.00	1449		X
CCB	1.00	1452		X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: ALKALINITY	SULFATE	AGNAL	TVZCN
S0	1.00	1456		X			
S1	1.00	1458		X			
S2	1.00	1500		X			
S3	1.00	1502		X			
ZZZZZZ	1.00	1505					
ICV	1.00	1507		X			
ICB	1.00	1509		X			
ICSA	1.00	1511					
ICSAB	1.00	1514		X			
PBW	1.00	1516		X			
LCSW	1.00	1518		X			
RB-021303	1.00	1521		X			
PBS	1.00	1523		X			
LCSS	1.00	1525		X			
CCV	1.00	1527		X			
CCB	1.00	1530		X			
WOD-SS-121	1.00	1532		X			
SV1211012	1.00	1534		X			
WOD-SS-122	1.00	1537		X			
SV1221012	1.00	1539		X			
SVDUP07	1.00	1541		X			
WOD-SS-123	1.00	1543		X			
SV1231012	1.00	1546		X			
SV1231012D	1.00	1548		X			
CCV	1.00	1550		X			
CCB	1.00	1553		X			
SV1231012L	1.00	1555		X			
WOD-SS-124	1.00	1557		X			
SV1240203	1.00	1600		X			
WOD-SS-125	1.00	1602		X			
SV1250203	1.00	1604		X			
ICSA	1.00	1607					

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes																						
				ALL	SBS	AAS	BAE	BED	CDA	CAR	CRO	CUE	FEB	PBG	MGN	MNG	HGI	NI	KSE	SAG	NAL	TL	V	ZN	CNN
ICSAB	1.00	1609																X						
CCV	1.00	1611																X						
CCB	1.00	1613																X						

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA 1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: AL	SB	AS	ABA	BAE	CAD	CAA	CAR	CAO	CAU	FE	PB	MG	MN	HG	NI	K	SE	AG	NAL	TL	V	ZN	CN
S0	1.00	1711		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1715		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1719		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1723		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1727																									
ZZZZZZ	1.00	1731																									
ZZZZZZ	1.00	1733																									
ZZZZZZ	1.00	1737																									
ZZZZZZ	1.00	1741																									
ICV	1.00	1747		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1751		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1755		X						X				X		X											
ICSAB	1.00	1759		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1803		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1807		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1811																									
RB-021303	1.00	1815		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBS	1.00	1819		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSS	1.00	1823		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WOD-SS-121	1.00	1828		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1832		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1836		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1211012	1.00	1840		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WOD-SS-122	1.00	1844		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1221012	1.00	1848		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SVDUP07	1.00	1852		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WOD-SS-123	1.00	1857		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1231012	1.00	1901		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
SV1231012D	1.00	1905		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1909		X						X				X		X											
ICSAB	1.00	1913		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1918		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes																						
				ALB	SBS	ASA	BAE	BED	CDA	CAR	CRO	COU	FEB	PBG	MGN	MNG	IGI	K	SE	AGA	NAI	TI	V	ZN	CN
CCB	1.00	1922		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
SV1231012L	1.00	1926		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
SV1231012S	1.00	1930			X	X	X	X	X		X	X	X		X				X	X	X		X	X	X
SV1231012A	1.00	1934																	X						
WOD-SS-124	1.00	1938		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
SV1240203	1.00	1942		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
WOD-SS-125	1.00	1946		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
SV1250203	1.00	1951		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
ICSA	1.00	1955		X					X				X		X										
ICSAB	1.00	1959		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
CCV	1.00	2003		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X
CCB	1.00	2007		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X	X	X

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ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	%R	Analytes: ALB	ASB	AAS	BAE	BED	CDA	CAR	CRO	CUE	FEB	PBG	MGN	HGI	NI	KSE	SGA	NAL	TL	VN	ZN	CN
S0	1.00	1214														X								
S0.2	1.00	1215														X								
S1	1.00	1217														X								
S2	1.00	1218														X								
S5	1.00	1219														X								
S10	1.00	1221														X								
ICV	1.00	1222														X								
ICB	1.00	1223														X								
PBW	1.00	1225														X								
LCSW	1.00	1226														X								
ZZZZZZ	1.00	1227																						
RB-021303	1.00	1229														X								
PBS	1.00	1230														X								
LCSS	1.00	1231														X								
ZZZZZZ	1.00	1233																						
ZZZZZZ	1.00	1234																						
CCV	1.00	1235														X								
CCB	1.00	1237														X								
WOD-SS-121	1.00	1238														X								
SV1211012	1.00	1239														X								
WOD-SS-122	1.00	1240														X								
SV1221012	1.00	1242														X								
SVDUP07	1.00	1243														X								
WOD-SS-123	1.00	1244														X								
SV1231012	1.00	1246														X								
SV1231012D	1.00	1247														X								
CCV	1.00	1248														X								
CCB	1.00	1250														X								
SV1231012S	1.00	1251														X								
WOD-SS-124	1.00	1252														X								
SV1240203	1.00	1254														X								
WOD-SS-125	1.00	1255														X								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0262

Instrument ID Number: COMM_FIMS Method: CV

Start Date: 02/18/03 End Date: 02/18/03

EPA Sample No.	D/F	Time	% R	Analytes: ALBS ASAE BBCD CDAR CCOU CUEB FPGN MMGI HNG NKI SSE ANGL TAL VZN CN
SV1250203	1.00	1256		X
ZZZZZZ	1.00	1258		
ZZZZZZ	1.00	1259		
ZZZZZZ	1.00	1300		
CCV	1.00	1302		X
CCB	1.00	1303		X

FIELD DUPLICATE PRECISION

ANALYTE	WOD-SU-DUP07	WOD-SU-122-1012	RPD	DIFFERENCE
Aluminum	8280	11400	31.71	3120
Antimony	0.14	0.16	13.33	0.02
Arsenic	1.6	3.2	66.67 OK	1.6
Barium	30.4	46.8	42.49	16.4
Beryllium	0.23	0.35	41.38	0.12
Cadmium	0.034U	0.038U	#VALUE!	#VALUE!
Calcium	27.4	26	5.24	1.4
Chromium	7.9	9.8	21.47	1.9
Cobalt	0.86	1.1	24.49	0.24
Copper	1.3	2	42.42	0.7
Iron	3110	5270	51.55	2160
Lead	2.1	2.6	21.28	0.5
Magnesium	389	603	43.15	214
Manganese	47.9	85.8	56.69	37.9
Mercury	0.017U	0.018U	#VALUE!	#VALUE!
Nickel	1.7	2.6	41.86	0.9
Potassium	347	515	38.98	168
Selenium	0.43U	0.49U	#VALUE!	#VALUE!
Silver	0.18	0.33	58.82 OK	0.15
Sodium	12.9	17.6	30.82	4.7
Thallium	0.14U	0.16U	#VALUE!	#VALUE!
Vanadium	7.7	12.6	48.28	4.9
Zinc	3.5	5.6	46.15	2.1

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Ag 328.068	45.7	0.0003	mg/L	0.00055	0.0003	mg/L	0.00055	193.28%
Al 308.215	-42.7	-0.0015	mg/L	0.00375	-0.0015	mg/L	0.00375	250.12%
As 188.979	0.5	0.0004	mg/L	0.00027	0.0004	mg/L	0.00027	77.39%
Ba 233.527	12.0	0.0003	mg/L	0.00015	0.0003	mg/L	0.00015	56.76%
Be 313.107	-60.4	0.0000	mg/L	0.00001	0.0000	mg/L	0.00001	44.85%
Co 228.616	-1.7	-0.0001	mg/L	0.00017	-0.0001	mg/L	0.00017	143.34%
Cr 267.716	3.4	0.0001	mg/L	0.00007	0.0001	mg/L	0.00007	105.94%
Cu 324.752	-90.4	-0.0005	mg/L	0.00032	-0.0005	mg/L	0.00032	69.99%
Fe 273.955	141.7	0.0044	mg/L	0.00028	0.0044	mg/L	0.00028	6.31%
Mg 279.077	38.9	0.0025	mg/L	0.00129	0.0025	mg/L	0.00129	51.28%
Mn 257.610	38.4	0.0001	mg/L	0.00005	0.0001	mg/L	0.00005	49.18%
Ni 231.604	0.8	0.0001	mg/L	0.00031	0.0001	mg/L	0.00031	379.11%
Pb 220.353	-0.6	-0.0003	mg/L	0.00008	-0.0003	mg/L	0.00008	24.74%
Sb 206.836	0.7	0.0008	mg/L	0.00015	0.0008	mg/L	0.00015	18.73%
Se 196.026	-1.0	-0.0015	mg/L	0.00032	-0.0015	mg/L	0.00032	21.59%
Tl 190.801	0.9	0.0005	mg/L	0.00119	0.0005	mg/L	0.00119	237.25%
V 292.402	2.8	0.0000	mg/L	0.00014	0.0000	mg/L	0.00014	448.33%
Zn 206.200	-0.9	-0.0001	mg/L	0.00022	-0.0001	mg/L	0.00022	287.95%
Na 330.237	52.2	0.0431	mg/L	0.09580	0.0431	mg/L	0.09580	222.43%
Cd 226.502	-1.1	-0.0001	mg/L	0.00009	-0.0001	mg/L	0.00009	158.05%
Ti 334.940	-63.0	-0.0001	mg/L	0.00007	-0.0001	mg/L	0.00007	59.32%
Ca 227.546	12.1	0.1317	mg/L	0.03407	0.1317	mg/L	0.03407	25.87%

Sequence No.: 23
Sample ID: B0262-03A,5662
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 54
Date Collected: 2/18/03 6:39:14 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0262-03A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-452.4	0.0052	mg/L	0.00021	0.0052	mg/L	0.00021	4.12%
Al 308.215	3534789.2	122.85	mg/L	0.334	122.85	mg/L	0.334	0.27%
As 188.979	52.0	0.0300	mg/L	0.00021	0.0300	mg/L	0.00021	0.71%
Ba 233.527	17292.8	0.3753	mg/L	0.00001	0.3753	mg/L	0.00001	0.00%
Be 313.107	1262.0	0.0038	mg/L	0.00001	0.0038	mg/L	0.00001	0.25%
Co 228.616	198.9	0.0112	mg/L	0.00026	0.0112	mg/L	0.00026	2.31%
Cr 267.716	4556.5	0.0904	mg/L	0.00029	0.0904	mg/L	0.00029	0.32%
Cu 324.752	3945.5	0.0236	mg/L	0.00083	0.0236	mg/L	0.00083	3.54%
Fe 273.955	1749024.6	54.408	mg/L	0.1290	54.408	mg/L	0.1290	0.24%
Mg 279.077	87163.7	5.6327	mg/L	0.01777	5.6327	mg/L	0.01777	0.32%
Mn 257.610	173513.5	0.4317	mg/L	0.00018	0.4317	mg/L	0.00018	0.04%
Ni 231.604	11.3	0.0275	mg/L	0.00045	0.0275	mg/L	0.00045	1.64%
Pb 220.353	194.8	0.0316	mg/L	0.00096	0.0316	mg/L	0.00096	3.04%
Sb 206.836	-2.5	-0.0051	mg/L	0.00147	-0.0051	mg/L	0.00147	29.05%
Se 196.026	-13.9	-0.0051	mg/L	0.00131	-0.0051	mg/L	0.00131	25.77%
Tl 190.801	-32.3	-0.0074	mg/L	0.00347	-0.0074	mg/L	0.00347	47.11%
V 292.402	11717.9	0.1274	mg/L	0.00038	0.1274	mg/L	0.00038	0.30%
Zn 206.200	830.7	0.0674	mg/L	0.00031	0.0674	mg/L	0.00031	0.46%
Na 330.237	1.1	0.1306	mg/L	0.16757	0.1306	mg/L	0.16757	128.34%
Cd 226.502	15.8	-0.0020	mg/L	0.00015	-0.0020	mg/L	0.00015	7.22%
Ti 334.940	1156737.8	2.1441	mg/L	0.00689	2.1441	mg/L	0.00689	0.32%
Ca 227.546	35.9	0.0908	mg/L	0.01875	0.0908	mg/L	0.01875	20.64%

Sequence No.: 24
Sample ID: B0262-04A,5662
Analyst:
Sample Wt: Sample: WOD-55-122
Dilution:

Autosampler Location: 55
Date Collected: 2/18/03 6:43:22 PM

Sample Prep Volume:
Data Type: Original

85% Solid
1.16 g
50 mL

Mean Data: B0262-04A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	-1548.9	0.0066	mg/L	0.00066	0.0066	mg/L	0.00066	10.00%
Al 308.215	3916919.1	136.13	mg/L	0.941	136.13	mg/L	0.941	0.69%

0.2107 mg/L x 50 mL / 1.169 = 9.08 / 0.85 = 10.7 mg/kg ✓

As 188.979	323.6	0.2107 mg/L	0.00006	0.2107 mg/L	0.00006	0.03%
Ba 233.527	22107.6	0.4810 mg/L	0.00114	0.4810 mg/L	0.00114	0.24%
Be 313.107	3546.1	0.0052 mg/L	0.00006	0.0052 mg/L	0.00006	1.10%
Co 228.616	585.8	0.0387 mg/L	0.00037	0.0387 mg/L	0.00037	0.95%
Cr 267.716	9585.4	0.1900 mg/L	0.00004	0.1900 mg/L	0.00004	0.02%
Cu 324.752	14126.0	0.0793 mg/L	0.00025	0.0793 mg/L	0.00025	0.32%
Fe 273.955	3471719.6	107.98 mg/L	0.715	107.98 mg/L	0.715	0.66%
Mg 279.077	152887.4	9.8834 mg/L	0.00429	9.8834 mg/L	0.00429	0.04%
Mn 257.610	746432.0	1.8556 mg/L	0.01408	1.8556 mg/L	0.01408	0.76%
Ni 231.604	185.1	0.0713 mg/L	0.00037	0.0713 mg/L	0.00037	0.51%
Pb 220.353	520.3	0.2114 mg/L	0.00164	0.2114 mg/L	0.00164	0.78%
Sb 206.836	-2.7	-0.0068 mg/L	0.00173	-0.0068 mg/L	0.00173	25.45%
Se 196.026	-17.4	-0.0018 mg/L	0.00535	-0.0018 mg/L	0.00535	305.72%
Tl 190.801	-41.2	-0.0090 mg/L	0.00212	-0.0090 mg/L	0.00212	23.64%
V 292.402	20139.8	0.2205 mg/L	0.00081	0.2205 mg/L	0.00081	0.37%
Zn 206.200	3292.0	0.2722 mg/L	0.00000	0.2722 mg/L	0.00000	0.00%
Na 330.237	496.3	0.6230 mg/L	0.04171	0.6230 mg/L	0.04171	6.70%
Cd 226.502	41.7	-0.0032 mg/L	0.00021	-0.0032 mg/L	0.00021	6.61%
Ti 334.940	1267536.0	2.3495 mg/L	0.01527	2.3495 mg/L	0.01527	0.65%
Ca 227.546	185.6	1.4399 mg/L	0.17015	1.4399 mg/L	0.17015	11.82%

Sequence No.: 25 **Autosampler Location: 56**
Sample ID: B0262-05A,5662 **Date Collected: 2/18/03 6:47:31 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0262-05A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1268.5	0.0060	mg/L	0.00077	0.0060	mg/L	0.00077	12.87%
Al 308.215	5978919.3	207.80	mg/L	0.228	207.80	mg/L	0.228	0.11%
As 188.979	100.9	0.0591	mg/L	0.00124	0.0591	mg/L	0.00124	2.11%
Ba 233.527	39279.6	0.8517	mg/L	0.00185	0.8517	mg/L	0.00185	0.22%
Be 313.107	1297.7	0.0063	mg/L	0.00010	0.0063	mg/L	0.00010	1.50%
Co 228.616	360.9	0.0203	mg/L	0.00033	0.0203	mg/L	0.00033	1.61%
Cr 267.716	9025.6	0.1788	mg/L	0.00048	0.1788	mg/L	0.00048	0.27%
Cu 324.752	6140.6	0.0368	mg/L	0.00037	0.0368	mg/L	0.00037	1.02%
Fe 273.955	3081870.3	95.876	mg/L	0.1607	95.876	mg/L	0.1607	0.17%
Mg 279.077	169615.1	10.971	mg/L	0.0051	10.971	mg/L	0.0051	0.05%
Mn 257.610	627778.3	1.5601	mg/L	0.00382	1.5601	mg/L	0.00382	0.24%
Ni 231.604	8.6	0.0472	mg/L	0.00031	0.0472	mg/L	0.00031	0.65%
Pb 220.353	319.6	0.0473	mg/L	0.00251	0.0473	mg/L	0.00251	5.30%
Sb 206.836	-3.6	-0.0081	mg/L	0.00197	-0.0081	mg/L	0.00197	24.26%
Se 196.026	-16.8	0.0020	mg/L	0.00545	0.0020	mg/L	0.00545	277.63%
Tl 190.801	-60.2	-0.0152	mg/L	0.00116	-0.0152	mg/L	0.00116	7.68%
V 292.402	21110.9	0.2294	mg/L	0.00167	0.2294	mg/L	0.00167	0.73%
Zn 206.200	1263.0	0.1019	mg/L	0.00011	0.1019	mg/L	0.00011	0.11%
Na 330.237	-502.2	-0.1840	mg/L	0.05792	-0.1840	mg/L	0.05792	31.47%
Cd 226.502	29.0	-0.0035	mg/L	0.00014	-0.0035	mg/L	0.00014	4.15%
Ti 334.940	2078179.5	3.8521	mg/L	0.00232	3.8521	mg/L	0.00232	0.06%
Ca 227.546	92.6	0.4735	mg/L	0.09612	0.4735	mg/L	0.09612	20.30%

Sequence No.: 26 **Autosampler Location: 57**
Sample ID: B0262-06A,5662 **Date Collected: 2/18/03 6:51:42 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0262-06A,5662

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-819.6	0.0038	mg/L	0.00041	0.0038	mg/L	0.00041	10.59%
Al 308.215	4942342.2	171.77	mg/L	1.105	171.77	mg/L	1.105	0.64%
As 188.979	62.6	0.0339	mg/L	0.00516	0.0339	mg/L	0.00516	15.23%
Ba 233.527	29106.0	0.6308	mg/L	0.00046	0.6308	mg/L	0.00046	0.07%
Be 313.107	-1567.0	0.0047	mg/L	0.00007	0.0047	mg/L	0.00007	1.42%

TETRA TECH NUS

PHIL-17023

TO: G. GLENN **DATE:** APRIL 7, 2003

FROM: RUSSELL SLOBODA **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOLATILES, SEMIVOLATILES, AND PESTICIDES/PCBS
CTO 847, BACKGROUND STUDY – NASA WALLOPS ISLAND, VIRGINIA
SDG B0279

SAMPLES: 6/Aqueous

14-GW1	GW-DUP08	WFF10-GW1
14-GW2	MW53S	TB-021803

OVERVIEW

The sample set for CTO 847 – Background Study, NASA Wallops Island, Virginia, SDG B0279, consists of five groundwater samples (designation incorporating "GW" or "MW") and one trip blank (designated TB). The trip blank was analyzed for TCL volatiles and all other samples were analyzed for TCL volatiles and semivolatiles. Groundwater samples 14-GW1, MW53S, and WFF10-GW1 were also analyzed for pesticides. PCB analysis was performed on groundwater samples 14-GW2 and GW-DUP08. One field duplicate pair (samples 14-GW1/ GW-DUP08) were included in this SDG.

The samples were collected by Tetra Tech NUS on February 19, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, 8081A for pesticides, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

Volatiles

The volatile fraction aqueous LCS percent recovery was less than the lower QC limit for 1,2-dibromo-3-chloropropane. Associated aqueous sample results were nondetected and were qualified estimated, (UJ).

Positive results reported at concentrations less than the Contract Required Quantitation Limit (CRQL) were qualified estimated, (J).

Semivolatiles

The initial calibration % RSD in the response factor for 3-nitroaniline exceeded the 50 percent upper control limit on instrument S3. The associated results consisted of non-detected aqueous samples, which were qualified estimated, (UJ).

Positive results reported at concentrations less than the Contract Required Quantitation Limit (CRQL) were qualified estimated, (J).

NOTES

Methylene chloride was detected in a trip blank. This compound was not detected in aqueous environmental samples.

The percent recoveries for volatile compounds were less than the lower QC limits for 4 compounds in the MS and 4 compounds in the MSD performed on sample WFF10-GW1. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

The volatile fraction aqueous LCS percent recoveries were above the upper QC limit for chloromethane, vinyl chloride, and chloroethane. No positive results occurred for these compounds and no data validation actions were required.

The percent recoveries for semivolatile compounds were less than the lower QC limits for 2 compounds in the MS and 3 compounds in the MSD performed on sample WFF10-GW1. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

The percent recovery for the pesticide surrogate tetrachloro-meta-xylene (TCX) was less than the lower QC limit in sample MW53S. Associated results were non-detected and no action was required.

EXECUTIVE SUMMARY

Laboratory Performance: One semivolatile compound exceeded initial calibration percent RSD criteria. One volatile compound exhibited a low LCS recovery and three volatile compounds displayed high LCS recoveries.

Other Factors Affecting Data Quality: Methylene chloride was detected in a trip blank. One pesticide surrogate compound exceeded QC limits. Several compounds exceeded QC limits for percent recovery in the volatile and semivolatile MS/MSD analyses.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled “Navy IRCDQM” (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

Volatile Organic Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Sample ID:	14-GW1			14-GW2			GW-DUP08			MW53S			TB-021803			WFF10-GW1		
Laboratory ID:	B0279-10A			B0279-20A			B0279-17A			B0279-03A			B0279-01A			B0279-02A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/18/03			02/18/03		
Duplicate:	GW-DUP08						14-GW1											
Percent Moisture																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2-Trichlo-1,2,2-trifluoroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	UJ	E	1	UJ	E	1	UJ	E	1	UJ	E	1	UJ	E	1	UJ	E
1,2-Dibromoethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U		5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U		5	U		5	U		5	U	
Acetone	5	U		5	U		5	U		5	U		5	U		5	U	
Benzene	1	U		1	U		1	U		1	U		1	U		1	U	
Bromodichloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U		1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U		1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U		1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U		1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U		1	U		1	U		3		
Chloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U		1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Ethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
Isopropylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
m,p-xylene	1	U		1	U		1	U		1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U		1	U		1	U		1	U		1	U	
Methylcyclohexane	1	U		1	U		1	U		1	U		1	U		1	U	
Methylene Chloride	2	U		2	U		2	U		2	U		6			2	U	
o-xylene	1	U		1	U		1	U		1	U		1	U		1	U	
Styrene	1	U		1	U		1	U		1	U		1	U		1	U	
Tetrachloroethene	1	U		1	U		1	U		1	U		1	U		1	U	
Toluene	1	U		1	U		1	U		1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U		1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U		1	U		1	U		1	U	
Xylene (Total)	1	U		1	U		1	U		1	U		1	U		1	U	

Volatile Organic Analysis Results
SDG B0279
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Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAOV_B0279.DBF data retrieved on: 04/06/03

2

Semivolatile Organic Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Sample ID:	14-GW1			14-GW2			GW-DUP08			MW53S			WFF10-GW1		
Laboratory ID:	B0279-10C			B0279-20C			B0279-17C			B0279-03C			B0279-02C		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/18/03		
Duplicate:	GW-DUP08						14-GW1								
Percent Moisture															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
1,1-Biphenyl	NA			NA			NA			NA			NA		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U		5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U		20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U		5	U		5	U	
2,4-Dichlorophenol	5	U		5	U		5	U		5	U		5	U	
2,4-Dimethylphenol	5	U		5	U		5	U		5	U		5	U	
2,4-Dinitrophenol	20	U		20	U		20	U		20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U		5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U		5	U		5	U	
2-Chloronaphthalene	5	U		5	U		5	U		5	U		5	U	
2-Chlorophenol	5	U		5	U		5	U		5	U		5	U	
2-Methylnaphthalene	5	U		5	U		5	U		5	U		5	U	
2-Methylphenol	5	U		5	U		5	U		5	U		5	U	
2-Nitroaniline	20	U		20	U		20	U		20	U		20	U	
2-Nitrophenol	5	U		5	U		5	U		5	U		5	U	
3,3'-Dichlorobenzidine	5	U		5	U		5	U		5	U		5	U	
3-Nitroaniline	20	UJ	C	20	UJ	C	20	UJ	C	20	UJ	C	20	UJ	C
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U		20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U		5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U		5	U		5	U	
4-Chloroaniline	5	U		5	U		5	U		5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U		5	U		5	U	
4-Methylphenol	5	U		5	U		5	U		5	U		5	U	
4-Nitroaniline	20	U		20	U		20	U		20	U		20	U	
4-Nitrophenol	20	U		20	U		20	U		20	U		20	U	
Acenaphthene	5	U		5	U		5	U		5	U		5	U	
Acenaphthylene	5	U		5	U		5	U		5	U		5	U	
Acetophenone	NA			NA			NA			NA			NA		
Anthracene	5	U		5	U		5	U		5	U		5	U	
Atrazine	NA			NA			NA			NA			NA		
Benz(a)anthracene	5	U		5	U		5	U		5	U		5	U	
Benzaldehyde	NA			NA			NA			NA			NA		
Benzo(a)pyrene	5	U		5	U		5	U		5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U		5	U		5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U		5	U		5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U		5	U		5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U		5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U		5	U		5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U		5	U		5	U		5	U	
Butylbenzylphthalate	5	U		5	U		5	U		5	U		5	U	
Caprolactum	NA			NA			NA			NA			NA		
Carbazole	NA			NA			NA			NA			NA		
Chrysene	5	U		5	U		5	U		5	U		5	U	
Di-n-butylphthalate	5	U		5	U		5	U		5	U		5	U	
Di-n-octylphthalate	5	U		5	U		5	U		5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U		5	U		5	U		5	U	
Dibenzofuran	5	U		5	U		5	U		5	U		5	U	
Diethylphthalate	5	U		5	U		5	U		5	U		5	U	
Dimethylphthalate	5	U		5	U		5	U		5	U		5	U	
Fluoranthene	5	U		5	U		5	U		5	U		5	U	
Fluorene	5	U		5	U		5	U		5	U		5	U	
Hexachlorobenzene	5	U		5	U		5	U		5	U		5	U	
Hexachlorobutadiene	5	U		5	U		5	U		5	U		5	U	
Hexachlorocyclopentadiene	5	U		5	U		5	U		5	U		5	U	
Hexachloroethane	5	U		5	U		5	U		5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U		5	U		5	U		5	U	
Isophorone	5	U		5	U		5	U		5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U		5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U		5	U		5	U	
Naphthalene	5	U		5	U		5	U		5	U		5	U	
Nitrobenzene	5	U		5	U		5	U		5	U		5	U	
Pentachlorophenol	20	U		20	U		20	U		20	U		20	U	
Phenanthrene	5	U		5	U		5	U		5	U		5	U	
Phenol	5	U		5	U		5	U		5	U		5	U	
Pyrene	5	U		5	U		5	U		5	U		5	U	

Semivolatile Organic Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAOS_B0279.DBF data retrieved on: 04/06/03

2

Pesticide Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Sample ID:	14-GW1			MW53S			WFF10-GW1			
Laboratory ID:	B0279-10C			B0279-03C			B0279-02C			
Sample Date:	02/19/03			02/19/03			02/18/03			
Duplicate:	GW-DUP08									
Percent Moisture										
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	
PESTICIDES/PCBS	ug/L			ug/L			ug/L			
4,4'-DDD	0.1	U		0.1	U		0.1	U		
4,4'-DDE	0.1	U		0.1	U		0.1	U		
4,4'-DDT	0.1	U		0.1	U		0.1	U		
Aldrin	0.05	U		0.05	U		0.05	U		
Alpha-BHC	0.05	U		0.05	U		0.05	U		
Alpha-Chlordane	0.05	U		0.05	U		0.05	U		
Beta-BHC	0.05	U		0.05	U		0.05	U		
Delta-BHC	0.05	U		0.05	U		0.05	U		
Dieldrin	0.1	U		0.1	U		0.1	U		
Endosulfan I	0.05	U		0.05	U		0.05	U		
Endosulfan II	0.1	U		0.1	U		0.1	U		
Endosulfan Sulfate	0.1	U		0.1	U		0.1	U		
Endrin	0.1	U		0.1	U		0.1	U		
Endrin Aldehyde	0.1	U		0.1	U		0.1	U		
Endrin Ketone	0.1	U		0.1	U		0.1	U		
Gamma-BHC (Lindane)	0.05	U		0.05	U		0.05	U		
Gamma-Chlordane	0.05	U		0.05	U		0.05	U		
Heptachlor	0.05	U		0.05	U		0.05	U		
Heptachlor Epoxide	0.05	U		0.05	U		0.05	U		
Methoxychlor	0.5	U		0.5	U		0.5	U		
Toxaphene	5	U		5	U		5	U		
Data Qualifiers:										
U -- Value is a non-detected result as reported by the laboratory.										
Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAPEST_B0279.DBF data retrieved on: 04/06/03										

PCB Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Sample ID:	14-GW2			GW-DUP08		
Laboratory ID:	B0279-20C			B0279-17C		
Sample Date:	02/19/03			02/19/03		
Duplicate:				14-GW1		
Percent Moisture						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBS	ug/L			ug/L		
Aroclor-1016	1	U		1	U	
Aroclor-1221	1	U		1	U	
Aroclor-1232	1	U		1	U	
Aroclor-1242	1	U		1	U	
Aroclor-1248	1	U		1	U	
Aroclor-1254	1	U		1	U	
Aroclor-1260	1	U		1	U	

PCB Analysis Results
SDG B0279
CTO 847
NASA Wallops Island

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAPCB_B0279.DBF data retrieved on: 04/06/03

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5127

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5127

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5127

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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9.					
10.					
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18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5130

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5130

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5130

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5128

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5128

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5128

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5126

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5126

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5126

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5124

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	3	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

000046

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5124

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5124

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2303

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

000100

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2303

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

14-GW1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2303

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.66	5	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
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30.					

000102

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2306

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

000103

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2306

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

14-GW2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2306

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.66	5	J
2.	314-40-9	BROMACIL	18.24	6	NJ
3.		UNKNOWN	20.74	4	J
4.					
5.					
6.					
7.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2304

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2304

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

000107

1F

EPA SAMPLE NO.

GW-DUP08

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2304

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
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30.					

000108

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2302

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

000109

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2302

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

000110

1F

EPA SAMPLE NO.

MW53S

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2302

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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000117

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2299

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2299

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

000116

1F

EPA SAMPLE NO.

WFF10-GW1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2299

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

14-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-10C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E3D9338F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U

000157

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-03C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E3D9337F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U

000150

FORM 1
PESTICIDE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF10-GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-02C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: E3D9334F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.050	U
319-85-7	beta-BHC	0.050	U
319-86-8	delta-BHC	0.050	U
58-89-9	gamma-BHC (Lindane)	0.050	U
76-44-8	Heptachlor	0.050	U
309-00-2	Aldrin	0.050	U
1024-57-3	Heptachlor epoxide	0.050	U
959-98-8	Endosulfan I	0.050	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
7421-36-3	Endrin aldehyde	0.10	U
5103-71-9	alpha-Chlordane	0.050	U
5103-74-2	gamma-Chlordane	0.050	U
8001-35-2	Toxaphene	5.0	U

000159

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

14-GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-20C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E2D4828F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000163

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

GW-DUP08

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-17C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E2D4826F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000164

APPENDIX C

Support Documentation

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0279

Mitkem Project ID: B0279

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous and nine soil samples that were collected on February 19, 2003, and received at Mitkem on February 20, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples WOD-SS-131RE, WOD-SS-132, WOD-SS-129MS and WOD-SS-129MSD. Matrix interference on surrogate confirmed with re-analysis of sample WOD-SS-132 with similar findings. Surrogate recoveries were within the QC limits in the initial analysis for sample WOD-SS-131

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of chloromethane, vinyl chloride and chloroethane in V6KLCSD and low recovery of 1,2-dibromo-3-chloropropane in V6LLCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1 for aqueous samples and on sample WOD-SS-129 for soil samples. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike duplicate for samples WFF10-GW1 and WOD-SS-129. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of phenol-d5 and 2-fluorophenol in method blanks, SBLK2S and SBLK3T, and lab control sample S2SLCS.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of phenol, N-nitroso-di-n-propylamine and isophorone in S2SLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1 for aqueous samples and on sample WOD-SS-129 for soil samples. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate for sample WFF10-GW1 and WOD-SS-129. Replicate RPDs were within the QC limits with the exception of 2-methylphenol and 3,3'-dichlorobenzidine for sample WFF10-GW1 and 4-nitroaniline and 3,3'-dichlorobenzidine in sample EOD-SS-129.

Sample analysis: no other unusual observation was made for the analysis.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in one column for sample MW-53S.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King OF Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA vial HCl	1 Liter Amber glass TCL VOC + MTBE	1 Liter Amber glass TCL SVOC	500ml Poly HNO3 TCL Pest	8 gram Encore sampler TAL Metals	40z Amber glass wide mouth TCL VOC	40z Amber glass wide mouth TCL SVOC + PCB	40z Amber glass wide mouth TAL Metals + Fe	40z Amber glass wide mouth TAL s/a Mercury	80z Amber glass wide mouth Perchlorate					COMMENTS
TB-021803	2/18/03 1030		X	X			01	2	2														Trip Blank
WFF10-GW1	2/18/03 1355		X	X			02	15	6	3	3	3											DO MS/MSD
MW53S	2/19/03 1010		X	X			03	6	2	1	1	1											
WOD-SS-129	2/19/03 1040		X		X		04	16					9	2	2	2	1						DO MS/MSD
WOD-SS-130	2/19/03 1105		X		X		05	7					3	1	1	1	1						
WOD-SS-131	2/19/03 1116		X		X		06	7					3	1	1	1	1						
WOD-SS-132	2/19/03 1130		X		X		07	7					3	1	1	1	1						
WOD-SS-133	2/19/03 1142		X		X		08	7					3	1	1	1	1						
WOD-SS-137	2/19/03 1217		X		X		09	7					3	1	1	1	1						
14-GW1	2/19/03 1230		X	X			10	5	2	1	1	1											
WOD-SS-136	2/19/03 1234		X		X		11	7					3	1	1	1	1						
WOD-SS-Dup09	2/19/03 1242		X		X		12	7					3	1	1	1	1						

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	2/19/03 1700		2-20-03 0900	Trip Blanks and Blank water were provided by the Laboratory. The samples were shipped under Federal Express Airbill No 8286 8464 5289	4C
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza 7, 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: $ Gram Encore sampler	TCL VOC	40z Amber Glass Widmouth	TCL SVOC PCB	40z Amber Glass Widmouth	TAL Metals Pb	40z Amber Glass Widmouth	TOC o/a Moisture	80z Amber Glass Widmouth	Grain Size	500 ml Poly HNO3	Dissolved Metals	40 ml VOA Vial HCl	TCL VOA	1 Liter Amber Glass	TCL SVOC	1 Liter Amber Glass	TCL PCB	500 ml Poly HNO3	TAL Metals	40 ml VOA Vial HCl	TOC	500 ml Poly HNO3	Dissolved Metals	COMMENTS
WOD-SS-138	2/19/03 1249		X		X		13	7	3	1	1	1	1																		
WFF10-GW1-F	2/19/03 1355		X	X			14	3						3																	DO MS/MSD
MW53S-F	2/19/03 1010		X	X			15	1						1																	
14-GW1-F	2/19/03 1230		X	X			16	1						1																	
GW-Dup 08	2/19/03 1305		X	X			17	5											2	1	1	1									
RB-021903	2/19/03 1545		X	X			18	7											2	1	1	1	2								Rinsate Blank
GW-Dup 08-F	2/19/03 1305		X	X			19	1																				1			
14-GW2	2/19/03 1440		X	X			20	5											2	1	1	1									
14-GW2-F	2/19/03 1440		X	X			21	1																				1			
	/																														
	/																														
	/																														

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Mayer	2/19/03 1700	Beth Rood	2-20-03 0800
		/		/
		/		/

ADDITIONAL REMARKS: Laboratory supplied Blank Water and Trip Blanks shipped under Federal Express Airbill NO 8286 8464 5284

COOLER TEMP: 3C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - Sample No.: V6KLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	60	120	2	40	48-135
Chloromethane	50	60	120*	3	40	60-118
Vinyl Chloride	50	59	118*	5	40	65-113
Bromomethane	50	59	118	7	40	73-122
Chloroethane	50	61	122*	7	40	72-118
Trichlorofluoromethane	50	58	116	7	40	68-129
1,1-Dichloroethene	50	54	108	2	40	67-121
Acetone	50	40	80	12	40	38-161
Carbon Disulfide	50	60	120	7	40	53-137
Methylene Chloride	50	50	100	4	40	59-132
trans-1,2-Dichloroethen	50	54	108	2	40	71-124
Methyl tert-butyl ether	50	45	90	4	40	75-123
1,1-Dichloroethane	50	54	108	2	40	83-116
2-Butanone	50	44	88	9	40	64-139
cis-1,2-Dichloroethene	50	53	106	4	40	83-120
Chloroform	50	56	112	2	40	89-118
1,1,1-Trichloroethane	50	57	114	0	40	81-122
Carbon Tetrachloride	50	55	110	2	40	79-125
1,2-Dichloroethane	50	52	104	7	40	83-123
Benzene	50	57	114	2	40	81-120
Trichloroethene	50	54	108	4	40	77-121
1,2-Dichloropropane	50	56	112	2	40	81-116
Bromodichloromethane	50	53	106	2	40	90-114
cis-1,3-Dichloropropene	50	51	102	0	40	78-119
4-Methyl-2-pentanone	50	44	88	11	40	57-138
Toluene	50	57	114	4	40	81-121
trans-1,3-Dichloroprope	50	50	100	4	40	85-118
1,1,2-Trichloroethane	50	50	100	8	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000220

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - Sample No.: V6LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		53	106	73-121
2-Hexanone	50		34	68	53-145
Dibromochloromethane	50		46	92	80-124
1,2-Dibromoethane	50		43	86	80-124
Chlorobenzene	50		53	106	82-118
Ethylbenzene	50		54	108	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		54	108	77-128
Bromoform	50		42	84	77-130
Isopropylbenzene	50		57	114	58-148
1,1,2,2-Tetrachloroetha	50		42	84	76-125
1,3,5-Trimethylbenzene	50		56	112	76-116
1,2,4-Trimethylbenzene	50		55	110	77-117
1,3-Dichlorobenzene	50		53	106	80-116
1,4-Dichlorobenzene	50		53	106	80-114
1,2-Dichlorobenzene	50		52	104	81-116
1,2-Dibromo-3-chloropro	50		33	66*	71-126
1,2,4-Trichlorobenzene	50		42	84	67-114
1,1,2-Trichlo-1,2,2-tri	50		55	110	70-130
Methyl Acetate	50		37	74	70-130
Cyclohexane	50		58	116	70-130
Methylcyclohexane	50		57	114	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

000223

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	50	0.0	52	104	73-121
2-Hexanone	50	0.0	36	72	53-145
Dibromochloromethane	50	0.0	46	92	80-124
1,2-Dibromoethane	50	0.0	43	86	80-124
Chlorobenzene	50	0.0	53	106	82-118
Ethylbenzene	50	0.0	53	106	80-122
Xylene (Total)	150	0.0	160	107	81-121
Styrene	50	0.0	54	108	77-128
Bromoform	50	0.0	42	84	77-130
Isopropylbenzene	50	0.0	55	110	58-148
1,1,2,2-Tetrachloroetha	50	0.0	42	84	76-125
1,3,5-Trimethylbenzene	50	0.0	55	110	76-116
1,2,4-Trimethylbenzene	50	0.0	55	110	77-117
1,3-Dichlorobenzene	50	0.0	53	106	80-116
1,4-Dichlorobenzene	50	0.0	52	104	80-114
1,2-Dichlorobenzene	50	0.0	52	104	81-116
1,2-Dibromo-3-chloropro	50	0.0	32	64*	71-126
1,2,4-Trichlorobenzene	50	0.0	44	88	67-114
1,1,2-Trichlo-1,2,2-tri	50	0.0	56	112	70-130
Methyl Acetate	50	0.0	37	74	70-130
Cyclohexane	50	0.0	56	112	70-130
Methylcyclohexane	50	0.0	55	110	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000207

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	56	112	2	40	48-135
Chloromethane	50	50	100	2	40	60-118
Vinyl Chloride	50	55	110	0	40	65-113
Bromomethane	50	52	104	7	40	73-122
Chloroethane	50	54	108	4	40	72-118
Trichlorofluoromethane	50	54	108	6	40	68-129
1,1-Dichloroethene	50	49	98	4	40	67-121
Acetone	50	29	58	22	40	38-161
Carbon Disulfide	50	55	110	2	40	53-137
Methylene Chloride	50	45	90	12	40	59-132
trans-1,2-Dichloroethen	50	49	98	8	40	71-124
Methyl tert-butyl ether	50	35	70*	13	40	75-123
1,1-Dichloroethane	50	50	100	8	40	83-116
2-Butanone	50	31	62*	20	40	64-139
cis-1,2-Dichloroethene	50	48	96	8	40	83-120
Chloroform	50	53	100	2	40	89-118
1,1,1-Trichloroethane	50	55	110	2	40	81-122
Carbon Tetrachloride	50	53	106	4	40	79-125
1,2-Dichloroethane	50	44	88	13	40	83-123
Benzene	50	51	102	8	40	81-120
Trichloroethene	50	50	100	6	40	77-121
1,2-Dichloropropane	50	49	98	10	40	81-116
Bromodichloromethane	50	47	94	12	40	90-114
cis-1,3-Dichloropropene	50	44	88	13	40	78-119
4-Methyl-2-pentanone	50	32	64	12	40	57-138
Toluene	50	52	104	6	40	81-121
trans-1,3-Dichloroprope	50	41	82*	14	40	85-118
1,1,2-Trichloroethane	50	41	82	14	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000208

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	52	104	0	40	73-121
2-Hexanone	50	28	56	25	40	53-145
Dibromochloromethane	50	41	82	11	40	80-124
1,2-Dibromoethane	50	39	78	10	40	80-124
Chlorobenzene	50	50	100	6	40	82-118
Ethylbenzene	50	51	102	4	40	80-122
Xylene (Total)	150	150	100	7	40	81-121
Styrene	50	50	100	8	40	77-128
Bromoform	50	36	72*	15	40	77-130
Isopropylbenzene	50	53	106	4	40	58-148
1,1,2,2-Tetrachloroetha	50	38	76	10	40	76-125
1,3,5-Trimethylbenzene	50	53	106	4	40	76-116
1,2,4-Trimethylbenzene	50	53	106	4	40	77-117
1,3-Dichlorobenzene	50	50	100	6	40	80-116
1,4-Dichlorobenzene	50	51	102	2	40	80-114
1,2-Dichlorobenzene	50	49	98	6	40	81-116
1,2-Dibromo-3-chloropro	50	28	56*	13	40	71-126
1,2,4-Trichlorobenzene	50	38	76	15	40	67-114
1,1,2-Trichlo-1,2,2-tri	50	57	114	2	40	70-130
Methyl Acetate	50	33	66*	11	40	70-130
Cyclohexane	50	58	116	4	40	70-130
Methylcyclohexane	50	56	112	2	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 8 out of 100 outside limits

COMMENTS: _____

000209

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	25	0.0	21	84	0-127
bis(2-Chloroethyl)Ether	25	0.0	21	84	46-109
2-Chlorophenol	25	0.0	19	76	22-117
2-Methylphenol	25	0.0	12	48	40-104
2,2'-oxybis(1-Chloropro	25	0.0	22	88	10-134
4-Methylphenol	25	0.0	16	64	35-106
N-Nitroso-di-n-prop.(1)	25	0.0	21	84	44-122
Hexachloroethane	25	0.0	16	64	24-104
Nitrobenzene	25	0.0	21	84	47-112
Isophorone	25	0.0	26	104	48-118
2-Nitrophenol	25	0.0	20	80	29-122
2,4-Dimethylphenol	25	0.0	1	4*	14-109
2,4-Dichlorophenol	25	0.0	16	64	31-122
Naphthalene	25	0.0	18	72	38-117
4-Chloroaniline	25	0.0	9	36	0-152
bis(2-Chloroethoxy)meth	25	0.0	21	84	49-112
Hexachlorobutadiene	25	0.0	16	64	28-109
4-Chloro-3-Methylphenol	25	0.0	18	72	48-117
2-Methylnaphthalene	25	0.0	14	56	43-113
Hexachlorocyclopentadie	25	0.0	13	52	34-103
2,4,6-Trichlorophenol	25	0.0	18	72	34-127
2,4,5-Trichlorophenol	25	0.0	18	72	32-131
2-Chloronaphthalene	25	0.0	19	76	47-116
2-Nitroaniline	25	0.0	16	64	51-120
Dimethylphthalate	25	0.0	21	84	53-124
Acenaphthylene	25	0.0	20	80	50-119
2,6-Dinitrotoluene	25	0.0	21	84	52-122
3-Nitroaniline	25	0.0	14	56	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000224

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	25	0.0	19	76	50-121
2,4-Dinitrophenol	25	0.0	14	56	0-144
4-Nitrophenol	25	0.0	20	80	0-160
Dibenzofuran	25	0.0	14	56	51-122
2,4-Dinitrotoluene	25	0.0	20	80	52-126
Diethylphthalate	25	0.0	21	84	53-126
4-Chlorophenyl-phenylet	25	0.0	20	80	50-124
Fluorene	25	0.0	19	76	52-125
4-Nitroaniline	25	0.0	17	68	47-117
4,6-Dinitro-2-methylphe	25	0.0	16	64	3-151
N-Nitrosodiphenylamine	25	0.0	24	96	50-150
4-Bromophenyl-phenyleth	25	0.0	19	76	51-124
Hexachlorobenzene	25	0.0	19	76	52-124
Pentachlorophenol	25	0.0	17	68	5-125
Phenanthrene	25	0.0	19	76	52-128
Anthracene	25	0.0	18	72	52-127
Di-n-butylphthalate	25	0.0	22	88	56-132
Fluoranthene	25	0.0	19	76	53-130
Pyrene	25	0.0	21	84	53-131
Butylbenzylphthalate	25	0.0	22	88	54-128
3,3'-Dichlorobenzidine	25	0.0	4	16*	41-117
Benzo(a)anthracene	25	0.0	20	80	56-124
Chrysene	25	0.0	21	84	53-123
bis(2-Ethylhexyl)phthal	25	0.0	22	88	56-127
Di-n-octylphthalate	25	0.0	18	72	59-138
Benzo(b)fluoranthene	25	0.0	19	76	58-126
Benzo(k)fluoranthene	25	0.0	19	76	60-124
Benzo(a)pyrene	25	0.0	18	72	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000225

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	22	88	5	40	0-127
bis(2-Chloroethyl)Ether	25	22	88	5	40	46-109
2-Chlorophenol	25	20	80	5	40	22-117
2-Methylphenol	25	6	24*	67*	40	40-104
2,2'-oxybis(1-Chloropro	25	24	96	9	40	10-134
4-Methylphenol	25	12	48	28	40	35-106
N-Nitroso-di-n-prop.(1)	25	22	88	5	40	44-122
Hexachloroethane	25	19	76	17	40	24-104
Nitrobenzene	25	22	88	5	40	47-112
Isophorone	25	28	112	7	40	48-118
2-Nitrophenol	25	20	80	0	40	29-122
2,4-Dimethylphenol	25	1	4*	0	40	14-109
2,4-Dichlorophenol	25	17	68	6	40	31-122
Naphthalene	25	20	80	10	40	38-117
4-Chloroaniline	25	6	24	40	40	0-152
bis(2-Chloroethoxy)meth	25	23	92	9	40	49-112
Hexachlorobutadiene	25	18	72	12	40	28-109
4-Chloro-3-Methylphenol	25	18	72	0	40	48-117
2-Methylnaphthalene	25	14	56	0	40	43-113
Hexachlorocyclopentadie	25	14	56	7	40	34-103
2,4,6-Trichlorophenol	25	17	68	6	40	34-127
2,4,5-Trichlorophenol	25	19	76	5	40	32-131
2-Chloronaphthalene	25	20	80	5	40	47-116
2-Nitroaniline	25	17	68	6	40	51-120
Dimethylphthalate	25	22	88	5	40	53-124
Acenaphthylene	25	21	84	5	40	50-119
2,6-Dinitrotoluene	25	22	88	5	40	52-122
3-Nitroaniline	25	16	64	13	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000227

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WFF10-GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	20	80	5	40	50-121
2,4-Dinitrophenol	25	15	60	7	40	0-144
4-Nitrophenol	25	19	76	5	40	0-160
Dibenzofuran	25	15	60	7	40	51-122
2,4-Dinitrotoluene	25	21	84	5	40	52-126
Diethylphthalate	25	22	88	5	40	53-126
4-Chlorophenyl-phenylet	25	21	84	5	40	50-124
Fluorene	25	20	80	5	40	52-125
4-Nitroaniline	25	16	64	6	40	47-117
4,6-Dinitro-2-methylphe	25	18	72	12	40	3-151
N-Nitrosodiphenylamine	25	20	80	18	40	50-150
4-Bromophenyl-phenyleth	25	20	80	5	40	51-124
Hexachlorobenzene	25	20	80	5	40	52-124
Pentachlorophenol	25	17	68	0	40	5-125
Phenanthrene	25	20	80	5	40	52-128
Anthracene	25	18	72	0	40	52-127
Di-n-butylphthalate	25	23	92	4	40	56-132
Fluoranthene	25	21	84	10	40	53-130
Pyrene	25	22	88	5	40	53-131
Butylbenzylphthalate	25	24	96	9	40	54-128
3,3'-Dichlorobenzidine	25	0.9	4*	120*	40	41-117
Benzo(a)anthracene	25	21	84	5	40	56-124
Chrysene	25	22	88	5	40	53-123
bis(2-Ethylhexyl)phthal	25	23	92	4	40	56-127
Di-n-octylphthalate	25	19	76	5	40	59-138
Benzo(b)fluoranthene	25	20	80	5	40	58-126
Benzo(k)fluoranthene	25	21	84	10	40	60-124
Benzo(a)pyrene	25	18	72	0	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000228

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

& Affects all water samples

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD	
Phenol	* 1.390					1.399	3.2*	
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*	
2-Chlorophenol	* 1.371					1.295	3.5*	
2-Methylphenol	* 1.198					1.130	3.8*	
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*	
4-Methylphenol	* 1.129					1.108	1.6*	
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*	
Hexachloroethane	* 0.627					0.609	2.4*	
Nitrobenzene	* 0.406					0.416	4.6*	
Isophorone	* 0.535					0.541	2.3*	
2-Nitrophenol	* 0.219					0.207	5.1*	
2,4-Dimethylphenol	* 0.383					0.349	7.8*	
2,4-Dichlorophenol	* 0.356					0.321	8.1*	
Naphthalene	* 1.196					1.127	4.2*	
4-Chloroaniline	* 0.251					0.255	31.9*	No fit to
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*	
Hexachlorobutadiene	* 0.220					0.214	4.2*	
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*	
2-Methylnaphthalene	* 1.032					0.959	7.5*	
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*	
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*	
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*	
2-Chloronaphthalene	* 1.346					1.224	7.1*	
2-Nitroaniline	* 0.518					0.527	2.8*	
Dimethylphthalate	* 1.415					1.385	1.7*	
Acenaphthylene	* 1.879					1.819	2.1*	
2,6-Dinitrotoluene	* 0.318					0.308	2.6*	
3-Nitroaniline	* 0.274					0.181	52.2*	W
Acenaphthene	* 1.311					1.218	5.3*	
2,4-Dinitrophenol	* 0.201					0.167	17.9*	
4-Nitrophenol	* 0.265					0.267	6.2*	
Dibenzofuran	* 2.250					2.192	5.6*	
2,4-Dinitrotoluene	* 0.456					0.427	7.5*	
Diethylphthalate	* 1.413					1.367	3.2*	
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*	
Fluorene	* 1.325					1.349	7.0*	
4-Nitroaniline	* 0.111					0.150	18.7*	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 2
WATER PESTICIDE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

GC Column(1): DB-608 ID: 0.53 (mm) GC Column(2): DB-1701 ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	P3XLCS	90	80	123	109			0
02	WFF10-GW1	111	113	73	64			0
03	WFF10-GW1MS	108	103	76	67			0
04	WFF10-GW1MSD	110	101	76	66			0
05	MW53S	117	109	59	51*			1
06	14-GW1	104	91	65	58			0
07	PBLK3X	106	88	116	101			0
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

all nondetect

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (52-129)
S2 (DCB) = Decachlorobiphenyl (54-130)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

000203

TETRA TECH NUS

PHIL-17024

TO: G. GLENN **DATE:** APRIL 7, 2003

FROM: RUSSELL SLOBODA **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOLATILES, SEMIVOLATILES, AND PCBS
CTO 848, WASTE OIL DUMP SITE – NASA WALLOPS ISLAND, VIRGINIA
SDG B0279

SAMPLES:

9/Solid/

WOD-SS-129	WOD-SS-132	WOD-SS-137
WOD-SS-130	WOD-SS-133	WOD-SS-138
WOD-SS-131	WOD-SS-136	WOD-SS-DUP09

2/Aqueous

RB-021903	TB-021803

OVERVIEW

The sample set for CTO 848 – Waste Oil Dump Site, NASA Wallops Island, Virginia, SDG B0279, consists of 9 solid environmental samples (designated WOD-SS-), one trip blank (designated TB-), and one rinsate blank (designated RB-). The trip blank was analyzed for TCL volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and PCBs. One field duplicate pair (samples WOD-SS-133/ WOD-SS-DUP09) were included in this SDG.

The samples were collected by Tetra Tech NUS on February 19, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

Volatiles

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field quality control blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Acetone*	6 ug/L	60 ug/kg
Methylene Chloride*	26 ug/L	260 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The soil action levels apply to all soil environmental samples. No aqueous action level applies because there were no aqueous environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone and methylene chloride in soil samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

Three volatile fraction IS areas were below the 50% lower QC limit in sample WOD-SS-131. This sample was reanalyzed and performance was improved, so all results were reported from the rerun. In the reanalysis the first two IS recoveries were acceptable and the third IS exhibited improved performance but still below the lower QC limit. Detection limits for compounds associated with the third IS were qualified estimated, (UJ), in this sample.

The volatile fraction reanalysis of sample WOD-SS-131 displayed a percent recovery for one surrogate compound that slightly exceeded the upper QC limit. Positive results for volatile fraction compounds in sample WOD-SS-131 were qualified estimated, (J).

Two volatile fraction IS areas were below the 50% lower QC limit in samples WOD-SS-132 and WOD-SS-133. In the reanalysis of each sample, two IS recoveries were acceptable and the third IS exhibited improved performance but still below the lower QC limit. Detection limits for compounds associated with the third IS were qualified estimated, (UJ), in the two samples.

The volatile fraction initial analysis and reanalysis of sample WOD-SS-132 displayed a percent recovery for one surrogate compound that slightly exceeded the upper QC limit. Positive results for volatile fraction compounds in sample WOD-SS-132 were qualified estimated, (J).

The volatile fraction third IS area was below the 50% lower QC limit in samples WOD-SS-129, WOD-SS-130, WOD-SS-136, WOD-SS-137, WOD-SS-138, and WOD-SS-DUP09. No reanalyses of these samples were performed. Detection limits for compounds associated with the third IS were qualified estimated, (UJ), in these samples.

The volatile fraction aqueous LCS percent recovery was less than the lower QC limit for 1,2-dibromo-3-chloropropane. Associated aqueous sample results were nondetected and were qualified estimated, (UJ).

The initial calibration percent relative standard deviation (% RSD) in the response factor for acetone exceeded the 30 percent upper control limit on instrument V6. The associated positive result for acetone in sample RB-021903 was qualified estimated, (J).

Positive results reported at concentrations less than the Contract Required Quantitation Limit (CRQL) were qualified estimated, (J).

Semivolatiles

The semivolatile fraction sixth IS area was below the 50% lower QC limit in samples WOD-SS-132, WOD-SS-133, WOD-SS-137, and WOD-SS-DUP09. No reanalyses of these samples were performed. Detection limits for compounds associated with the sixth IS were qualified estimated, (UJ), in these samples.

The semivolatile fraction soil LCS percent recoveries were less than the lower QC limits for isophorone and N-nitroso-di-n-propylamine. Associated soil sample results were nondetected and were qualified biased low, (UL).

The initial calibration % RSD in the response factor for 4-chloroaniline exceeded the 50 percent upper control limit on instrument S2. The associated results consisted of non-detected soil samples, which were qualified estimated, (UJ).

The initial calibration % RSD in the response factor for 3-nitroaniline exceeded the 50 percent upper control limit on instrument S3. The associated result consisted of a non-detected aqueous sample, which was qualified estimated, (UJ).

The continuing calibration percent difference (%D) in the response factors for hexachlorocyclopentadiene, 3-nitroaniline, and 4-nitroaniline exceeded the 50 percent upper control limit. Associated results were non-detected in soil sample WOD-SS-136 and were qualified estimated, (UJ).

Positive results reported at concentrations less than the Contract Required Quantitation Limit (CRQL) were qualified estimated, (J).

PCBs

The %D in the continuing calibration response of one peak for Aroclor-1260 exceeded the 15 percent upper control limit on both GC columns. The associated positive result in sample WOD-SS-136 and the nondetected Aroclor-1260 results in other soil samples were qualified estimated, (J/UJ), respectively.

NOTES

The volatile fraction percent recoveries were greater than the upper QC limits for 12 compounds in the MS and 9 compounds in the MSD performed on sample WOD-SS-129. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

The volatile fraction aqueous LCS percent recoveries were above the upper QC limit for chloromethane, vinyl chloride, and chloroethane. No positive results occurred for these compounds and no data validation actions were required.

The semivolatile fraction percent recoveries were less than the lower QC limits for 2 compounds in the MS and 1 compound in the MSD performed on sample WOD-SS-129. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

Field duplicate results exhibited acceptable precision among all positive results detected.

A potential major analytical problem was eliminated by reanalyzing the volatile fraction of sample WOD-SS-131. The initial analysis of this sample was plagued with low surrogate recoveries and was also affected by a more serious problem – false positives from instrument carryover effects illustrated by the detection of low instrument levels of heavy VOCs which were part of the matrix spike analysis performed in the previous two runs. The initial analysis results for WOD-SS-131 were discarded by the data validator and the reanalysis was reported on the data summary. Detection of carryover compounds did not occur in the reanalysis, confirming the initial judgement and preventing the need for qualification for this problem. In the first analysis, carryover effects were observed with quantitation ion areas of about one percent of the preceding run's areas for the compounds 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,3,5-trimethylbenzene, chlorobenzene, toluene, ethylbenzene, xylenes, styrene, isopropylbenzene, and areas in the 3 percent range for 2-hexanone (the latter compound displaying enhanced carryover potential due to water solubility).

EXECUTIVE SUMMARY

Laboratory Performance: Instrument carryover was observed for late-eluting compounds in one sample analyzed after a volatile matrix spike duplicate. Acetone was detected in a laboratory blank. One volatile compound and two semivolatile compounds exceeded initial calibration percent RSD criteria. One volatile compound and two semivolatile compounds exhibited low LCS recoveries. Three semivolatile compounds displayed continuing calibration %Ds exceeding QC limits.

Other Factors Affecting Data Quality: Methylene chloride and acetone were detected in field QC blanks. Two soil samples displayed volatile surrogate recoveries outside control limits. Nine soil samples displayed volatile fraction IS areas less than the lower QC limit and four soil samples displayed semivolatile fraction IS areas less than the lower QC limit. The %D in the continuing calibration response for Aroclor-1260 exceeded the upper QC limit. Several compounds exceeded QC limits for percent recovery in the volatile and semivolatile MS/MSD analyses.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."



Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

Volatile Organic Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Sample ID:	RB-021903			TB-021803			WOD-SS-129			WOD-SS-130			WOD-SS-131		
Laboratory ID:	B0279-18A			B0279-01A			B0279-04C			B0279-05C			B0279-06CRE		
Sample Date:	02/19/03			02/18/03			02/19/03			02/19/03			02/19/03		
Duplicate:															
Percent Moisture							22.0			20.0			67.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	1	U		1	U		12	U		14	U		43	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,1,2-Trichlo-1,2,2-trifluoroethane	1	U		1	U		12	U		14	U		43	U	
1,1,2-Trichloroethane	1	U		1	U		12	U		14	U		43	U	
1,1-Dichloroethane	1	U		1	U		12	U		14	U		43	U	
1,1-Dichloroethene	1	U		1	U		12	U		14	U		43	U	
1,2,4-Trichlorobenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,2,4-Trimethylbenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,2-Dibromo-3-chloropropane	1	UJ	E	1	UJ	E	12	UJ	N	14	UJ	N	43	UJ	N
1,2-Dibromoethane	1	U		1	U		12	U		14	U		43	U	
1,2-Dichlorobenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,2-Dichloroethane	1	U		1	U		12	U		14	U		43	U	
1,2-Dichloroethene (cis)	1	U		1	U		12	U		14	U		43	U	
1,2-Dichloroethene (trans)	1	U		1	U		12	U		14	U		43	U	
1,2-Dichloropropane	1	U		1	U		12	U		14	U		43	U	
1,3,5-Trimethylbenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,3-Dichlorobenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
1,4-Dichlorobenzene	1	U		1	U		12	UJ	N	14	UJ	N	43	UJ	N
2-Butanone	5	U		5	U		12	U		28			43	U	
2-Hexanone	5	U		5	U		12	U		14	U		20	J	PR
4-Methyl-2-pentanone	5	U		5	U		12	U		14	U		43	U	
Acetone	6	J	C	5	U		30	B	B	200			79	B	B
Benzene	1	U		1	U		12	U		14	U		43	U	
Bromodichloromethane	1	U		1	U		12	U		14	U		43	U	
Bromoform	1	U		1	U		12	U		14	U		43	U	
Bromomethane	1	U		1	U		12	U		14	U		43	U	
Carbon Disulfide	1	U		1	U		12	U		6	J	P	43	U	
Carbon Tetrachloride	1	U		1	U		12	U		14	U		43	U	
Chlorobenzene	1	U		1	U		12	U		14	U		43	U	
Chloroethane	1	U		1	U		12	U		14	U		43	U	
Chloroform	1	U		1	U		12	U		14	U		43	U	
Chloromethane	1	U		1	U		12	U		14	U		43	U	
cis-1,3-Dichloropropene	1	U		1	U		12	U		14	U		43	U	
Cyclohexane	1	U		1	U		12	U		14	U		43	U	
Dibromochloromethane	1	U		1	U		12	U		14	U		43	U	
Dichlorodifluoromethane	1	U		1	U		12	U		14	U		43	U	
Ethylbenzene	1	U		1	U		12	U		14	U		43	U	
Isopropylbenzene	1	U		1	U		12	U		14	U		43	U	
m,p-xylene	1	U		1	U		12	U		14	U		43	U	
Methyl Acetate	1	U		1	U		6	J	P	26			43	U	
Methyl Tert-butyl Ether	1	U		1	U		12	U		14	U		43	U	
Methylcyclohexane	1	U		1	U		12	U		14	U		43	U	
Methylene Chloride	26			6			4	B	B	6	B	B	12	B	B
o-xylene	1	U		1	U		12	U		14	U		43	U	
Styrene	1	U		1	U		12	U		14	U		43	U	
Tetrachloroethene	1	U		1	U		12	U		14	U		43	U	
Toluene	1	U		1	U		12	U		14	U		43	U	
trans-1,3-Dichloropropene	1	U		1	U		12	U		14	U		43	U	
Trichloroethene	1	U		1	U		12	U		14	U		43	U	
Trichlorofluoromethane	1	U		1	U		12	U		14	U		43	U	
Vinyl Chloride	1	U		1	U		12	U		14	U		43	U	
Xylene (Total)	1	U		1	U		12	U		14	U		43	U	

Volatile Organic Analysis Results
SDG B0279
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Sample ID:	WOD-SS-132			WOD-SS-133			WOD-SS-136			WOD-SS-137			WOD-SS-138			WOD-SS-DUP09		
Laboratory ID:	B0279-07CRE			B0279-08C			B0279-11C			B0279-09C			B0279-13C			B0279-12C		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:				WOD-SS-DUP09												WOD-SS-133		
Percent Moisture	41.0			49.0			75.0			66.0			41.0			39.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	20	U		26	U		64	U		43	U		21	U		25	U	
1,1,2,2-Tetrachloroethane	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,1,2-Trichlo-1,2,2-trifluoroethane	20	U		26	U		64	U		43	U		21	U		25	U	
1,1,2-Trichloroethane	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
1,1-Dichloroethane	20	U		26	U		64	U		43	U		21	U		25	U	
1,1-Dichloroethene	20	U		26	U		64	U		43	U		21	U		25	U	
1,2,4-Trichlorobenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,2,4-Trimethylbenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,2-Dibromo-3-chloropropane	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,2-Dibromoethane	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
1,2-Dichlorobenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,2-Dichloroethane	20	U		26	U		64	U		43	U		21	U		25	U	
1,2-Dichloroethene (cis)	20	U		26	U		64	U		43	U		21	U		25	U	
1,2-Dichloroethene (trans)	20	U		26	U		64	U		43	U		21	U		25	U	
1,2-Dichloropropane	20	U		26	U		64	U		43	U		21	U		25	U	
1,3,5-Trimethylbenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,3-Dichlorobenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
1,4-Dichlorobenzene	20	UJ	N	26	UJ	N	64	UJ	N	43	UJ	N	21	UJ	N	25	UJ	N
2-Butanone	20	U		26	U		100			43	U		21	U		22	J	P
2-Hexanone	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
4-Methyl-2-pentanone	20	U		26	U		64	U		43	U		21	U		25	U	
Acetone	36	B	B	140	B	B	920			270			160			210		
Benzene	20	U		26	U		64	U		43	U		21	U		25	U	
Bromodichloromethane	20	U		26	U		64	U		43	U		21	U		25	U	
Bromoform	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Bromomethane	20	U		26	U		64	U		43	U		21	U		25	U	
Carbon Disulfide	20	U		26	U		64	U		43	U		21	U		25	U	
Carbon Tetrachloride	20	U		26	U		64	U		43	U		21	U		25	U	
Chlorobenzene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Chloroethane	20	U		26	U		64	U		43	U		21	U		25	U	
Chloroform	20	U		26	U		64	U		43	U		21	U		25	U	
Chloromethane	20	U		26	U		64	U		43	U		21	U		25	U	
cis-1,3-Dichloropropene	20	U		26	U		64	U		43	U		21	U		25	U	
Cyclohexane	20	U		26	U		64	U		43	U		21	U		25	U	
Dibromochloromethane	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Dichlorodifluoromethane	20	U		26	U		64	U		43	U		21	U		25	U	
Ethylbenzene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Isopropylbenzene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
m,p-xylene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Methyl Acetate	4	J	PR	19	J	P	210			36	J	P	39			38		
Methyl Tert-butyl Ether	20	U		26	U		64	U		43	U		21	U		25	U	
Methylcyclohexane	20	U		26	U		64	U		43	U		21	U		25	U	
Methylene Chloride	6	B	B	6	B	B	19	B	B	12	B	B	13	B	B	13	B	B
o-xylene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Styrene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Tetrachloroethene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Toluene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
trans-1,3-Dichloropropene	20	U		26	UJ	N	64	U		43	U		21	U		25	U	
Trichloroethene	20	U		26	U		64	U		43	U		21	U		25	U	
Trichlorofluoromethane	20	U		26	U		64	U		43	U		21	U		25	U	
Vinyl Chloride	20	U		26	U		64	U		43	U		21	U		25	U	
Xylene (Total)	20	U		26	UJ	N	64	U		43	U		21	U		25	U	

Volatile Organic Analysis Results
SDG B0279
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Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAOV_B0279.DBF data retrieved on: 04/06/03

3

Semivolatile Organic Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Sample ID:	RB-021903			WOD-SS-129			WOD-SS-130			WOD-SS-131			WOD-SS-132		
Laboratory ID:	B0279-18D			B0279-04A			B0279-05A			B0279-06A			B0279-07A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:															
Percent Moisture				22.0			20.0			67.0			41.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/kg			ug/kg			ug/kg			ug/kg		
1,1-Biphenyl	NA			420	U		410	U		1000	U		550	U	
2,2-Oxybis(1-chloropropane)	5	U		420	U		410	U		1000	U		550	U	
2,4,5-Trichlorophenol	20	U		1000	U		1000	U		2500	U		1400	U	
2,4,6-Trichlorophenol	5	U		420	U		410	U		1000	U		550	U	
2,4-Dichlorophenol	5	U		420	U		410	U		1000	U		550	U	
2,4-Dimethylphenol	5	U		420	U		410	U		1000	U		550	U	
2,4-Dinitrophenol	20	U		1000	U		1000	U		2500	U		1400	U	
2,4-Dinitrotoluene	5	U		420	U		410	U		1000	U		550	U	
2,6-Dinitrotoluene	5	U		420	U		410	U		1000	U		550	U	
2-Chloronaphthalene	5	U		420	U		410	U		1000	U		550	U	
2-Chlorophenol	5	U		420	U		410	U		1000	U		550	U	
2-Methylnaphthalene	5	U		420	U		410	U		1000	U		550	U	
2-Methylphenol	5	U		420	U		410	U		1000	U		550	U	
2-Nitroaniline	20	U		1000	U		1000	U		2500	U		1400	U	
2-Nitrophenol	5	U		420	U		410	U		1000	U		550	U	
3,3'-Dichlorobenzidine	5	U		420	U		410	U		1000	U		550	U	
3-Nitroaniline	20	UJ	C	1000	U		1000	U		2500	U		1400	U	
4,6-Dinitro-2-methylphenol	20	U		1000	U		1000	U		2500	U		1400	U	
4-Bromophenyl Phenyl Ether	5	U		420	U		410	U		1000	U		550	U	
4-Chloro-3-methylphenol	5	U		420	U		410	U		1000	U		550	U	
4-Chloroaniline	5	U		420	UJ	C	410	UJ	C	1000	UJ	C	550	UJ	C
4-Chlorophenyl Phenyl Ether	5	U		420	U		410	U		1000	U		550	U	
4-Methylphenol	5	U		420	U		410	U		1000	U		550	U	
4-Nitroaniline	20	U		1000	U		1000	U		2500	U		1400	U	
4-Nitrophenol	20	U		1000	U		1000	U		2500	U		1400	U	
Acenaphthene	5	U		420	U		410	U		1000	U		550	U	
Acenaphthylene	5	U		420	U		410	U		1000	U		550	U	
Acetophenone	NA			420	U		410	U		1000	U		550	U	
Anthracene	5	U		420	U		410	U		1000	U		550	U	
Atrazine	NA			420	U		410	U		1000	U		550	U	
Benz(a)anthracene	5	U		420	U		410	U		1000	U		550	U	
Benzaldehyde	NA			88	J	P	300	J	P	850	J	P	79	J	P
Benzo(a)pyrene	5	U		420	U		410	U		1000	U		550	UJ	N
Benzo(b)fluoranthene	5	U		420	U		410	U		1000	U		550	UJ	N
Benzo(g,h,i)perylene	5	U		420	U		410	U		1000	U		550	UJ	N
Benzo(k)fluoranthene	5	U		420	U		410	U		1000	U		550	UJ	N
Bis(2-chloroethoxy)methane	5	U		420	U		410	U		1000	U		550	U	
Bis(2-chloroethyl)ether	5	U		420	U		410	U		1000	U		550	U	
Bis(2-ethylhexyl)phthalate	5	U		420	U		410	U		100	J	P	550	U	
Butylbenzylphthalate	5	U		420	U		410	U		1000	U		550	U	
Caprolactum	NA			420	U		410	U		1000	U		550	U	
Carbazole	NA			420	U		410	U		1000	U		550	U	
Chrysene	5	U		420	U		410	U		1000	U		550	U	
Di-n-butylphthalate	5	U		420	U		410	U		1000	U		550	U	
Di-n-octylphthalate	5	U		420	U		410	U		1000	U		550	UJ	N
Dibenz(a,h)anthracene	5	U		420	U		410	U		1000	U		550	UJ	N
Dibenzofuran	5	U		420	U		410	U		1000	U		550	U	
Diethylphthalate	5	U		420	U		410	U		1000	U		550	U	
Dimethylphthalate	5	U		420	U		410	U		1000	U		550	U	
Fluoranthene	5	U		420	U		410	U		1000	U		550	U	
Fluorene	5	U		420	U		410	U		1000	U		550	U	
Hexachlorobenzene	5	U		420	U		410	U		1000	U		550	U	
Hexachlorobutadiene	5	U		420	U		410	U		1000	U		550	U	
Hexachlorocyclopentadiene	5	U		420	U		410	U		1000	U		550	U	
Hexachloroethane	5	U		420	U		410	U		1000	U		550	U	
Indeno(1,2,3-cd)pyrene	5	U		420	U		410	U		1000	U		550	UJ	N
Isophorone	5	U		420	UL	E	410	UL	E	1000	UL	E	550	UL	E
N-Nitroso-di-n-propylamine	5	U		420	UL	E	410	UL	E	1000	UL	E	550	UL	E
N-Nitrosodiphenylamine (1)	5	U		420	U		410	U		1000	U		550	U	
Naphthalene	5	U		420	U		410	U		1000	U		550	U	
Nitrobenzene	5	U		420	U		410	U		1000	U		550	U	
Pentachlorophenol	20	U		1000	U		1000	U		2500	U		1400	U	
Phenanthrene	5	U		420	U		410	U		1000	U		550	U	
Phenol	5	U		420	U		410	U		1000	U		550	U	
Pyrene	5	U		420	U		410	U		1000	U		550	U	

Semivolatile Organic Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Sample ID:	WOD-SS-133			WOD-SS-136			WOD-SS-137			WOD-SS-138			WOD-SS-DUP09		
Laboratory ID:	B0279-08A			B0279-11A			B0279-09A			B0279-13A			B0279-12A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:	WOD-SS-DUP09												WOD-SS-133		
Percent Moisture	49.0			75.0			66.0			41.0			39.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1-Biphenyl	640	U		1300	U		970	U		550	U		540	U	
2,2-Oxybis(1-chloropropane)	640	U		1300	U		970	U		550	U		540	U	
2,4,5-Trichlorophenol	1600	U		3300	U		2400	U		1400	U		1400	U	
2,4,6-Trichlorophenol	640	U		1300	U		970	U		550	U		540	U	
2,4-Dichlorophenol	640	U		1300	U		970	U		550	U		540	U	
2,4-Dimethylphenol	640	U		1300	U		970	U		550	U		540	U	
2,4-Dinitrophenol	1600	U		3300	U		2400	U		1400	U		1400	U	
2,4-Dinitrotoluene	640	U		1300	U		970	U		550	U		540	U	
2,6-Dinitrotoluene	640	U		1300	U		970	U		550	U		540	U	
2-Chloronaphthalene	640	U		1300	U		970	U		550	U		540	U	
2-Chlorophenol	640	U		1300	U		970	U		550	U		540	U	
2-Methylnaphthalene	640	U		1300	U		970	U		550	U		540	U	
2-Methylphenol	640	U		1300	U		970	U		550	U		540	U	
2-Nitroaniline	1600	U		3300	U		2400	U		1400	U		1400	U	
2-Nitrophenol	640	U		1300	U		970	U		550	U		540	U	
3,3'-Dichlorobenzidine	640	U		1300	U		970	U		550	U		540	U	
3-Nitroaniline	1600	U		3300	UJ	C	2400	U		1400	U		1400	U	
4,6-Dinitro-2-methylphenol	1600	U		3300	U		2400	U		1400	U		1400	U	
4-Bromophenyl Phenyl Ether	640	U		1300	U		970	U		550	U		540	U	
4-Chloro-3-methylphenol	640	U		1300	U		970	U		550	U		540	U	
4-Chloroaniline	640	UJ	C	1300	U		970	UJ	C	550	UJ	C	540	UJ	C
4-Chlorophenyl Phenyl Ether	640	U		1300	U		970	U		550	U		540	U	
4-Methylphenol	640	U		1300	U		970	U		550	U		540	U	
4-Nitroaniline	1600	U		3300	UJ	C	2400	U		1400	U		1400	U	
4-Nitrophenol	1600	U		3300	U		2400	U		1400	U		1400	U	
Acenaphthene	640	U		1300	U		970	U		550	U		540	U	
Acenaphthylene	640	U		1300	U		970	U		550	U		540	U	
Acetophenone	640	U		1300	U		970	U		550	U		540	U	
Anthracene	640	U		1300	U		970	U		550	U		540	U	
Atrazine	640	U		1300	U		970	U		550	U		540	U	
Benz(a)anthracene	640	U		1300	U		970	U		550	U		540	U	
Benzaldehyde	250	J	P	710	J	P	810	J	P	110	J	P	140	J	P
Benzo(a)pyrene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Benzo(b)fluoranthene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Benzo(g,h,i)perylene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Benzo(k)fluoranthene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Bis(2-chloroethoxy)methane	640	U		1300	U		970	U		550	U		540	U	
Bis(2-chloroethyl)ether	640	U		1300	U		970	U		550	U		540	U	
Bis(2-ethylhexyl)phthalate	640	U		1300	U		970	U		550	U		540	U	
Butylbenzylphthalate	640	U		1300	U		970	U		550	U		540	U	
Caprolactum	640	U		1300	U		970	U		550	U		540	U	
Carbazole	640	U		1300	U		970	U		550	U		540	U	
Chrysene	640	U		1300	U		970	U		550	U		540	U	
Di-n-butylphthalate	640	U		1300	U		970	U		550	U		540	U	
Di-n-octylphthalate	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Dibenz(a,h)anthracene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Dibenzofuran	640	U		1300	U		970	U		550	U		540	U	
Diethylphthalate	640	U		1300	U		970	U		550	U		540	U	
Dimethylphthalate	640	U		1300	U		970	U		550	U		540	U	
Fluoranthene	640	U		1300	U		970	U		550	U		540	U	
Fluorene	640	U		1300	U		970	U		550	U		540	U	
Hexachlorobenzene	640	U		1300	U		970	U		550	U		540	U	
Hexachlorobutadiene	640	U		1300	U		970	U		550	U		540	U	
Hexachlorocyclopentadiene	640	U		1300	UJ	C	970	U		550	U		540	U	
Hexachloroethane	640	U		1300	U		970	U		550	U		540	U	
Indeno(1,2,3-cd)pyrene	640	UJ	N	1300	U		970	UJ	N	550	U		540	UJ	N
Isophorone	640	UL	E	1300	UL	E	970	UL	E	550	UL	E	540	UL	E
N-Nitroso-di-n-propylamine	640	UL	E	1300	UL	E	970	UL	E	550	UL	E	540	UL	E
N-Nitrosodiphenylamine (1)	640	U		1300	U		970	U		550	U		540	U	
Naphthalene	640	U		1300	U		970	U		550	U		540	U	
Nitrobenzene	640	U		1300	U		970	U		550	U		540	U	
Pentachlorophenol	1600	U		3300	U		2400	U		1400	U		1400	U	
Phenanthrene	640	U		1300	U		970	U		550	U		540	U	
Phenol	640	U		1300	U		970	U		550	U		540	U	
Pyrene	640	U		1300	U		970	U		550	U		540	U	

Semivolatile Organic Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAOS_B0279.DBF data retrieved on: 04/06/03

3

PCB Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Sample ID:	RB-021903			WOD-SS-129			WOD-SS-130			WOD-SS-131			WOD-SS-132		
Laboratory ID:	B0279-18D			B0279-04A			B0279-05A			B0279-06A			B0279-07A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:															
Percent Moisture				22.0			20.0			67.0			41.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBS	ug/L			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	1	U		42	U		41	U		100	U		56	U	
Aroclor-1221	1	U		42	U		41	U		100	U		56	U	
Aroclor-1232	1	U		42	U		41	U		100	U		56	U	
Aroclor-1242	1	U		42	U		41	U		100	U		56	U	
Aroclor-1248	1	U		42	U		41	U		100	U		56	U	
Aroclor-1254	1	U		42	U		41	U		100	U		56	U	
Aroclor-1260	1	U		42	UJ	C	41	UJ	C	100	UJ	C	56	UJ	C

PCB Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Sample ID:	WOD-SS-133			WOD-SS-136			WOD-SS-137			WOD-SS-138			WOD-SS-DUP09		
Laboratory ID:	B0279-08A			B0279-11A			B0279-09A			B0279-13A			B0279-12A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:	WOD-SS-DUP09												WOD-SS-133		
Percent Moisture	49.0			75.0			66.0			41.0			39.0		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PESTICIDES/PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	65	U		130	U		96	U		56	U		54	U	
Aroclor-1221	65	U		130	U		96	U		56	U		54	U	
Aroclor-1232	65	U		130	U		96	U		56	U		54	U	
Aroclor-1242	65	U		130	U		96	U		56	U		54	U	
Aroclor-1248	65	U		130	U		96	U		56	U		54	U	
Aroclor-1254	65	U		130	U		96	U		56	U		54	U	
Aroclor-1260	65	UJ	C	180	J	C	96	UJ	C	56	UJ	C	54	UJ	C

PCB Analysis Results
SDG B0279
CTO 848
NASA Wallops Island

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: C:\NASAWALLOPS\CTO847_BACKGROUND_STUDY_DATA_VALIDATION_SOIL\ORGANICS_GW\WAPCB_B0279.DBF data retrieved on: 04/06/03

APPENDIX B

Results as Reported by the Laboratory

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

000043

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5129

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	6	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	26	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5129

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5129

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4033

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 22 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
67-64-1	Acetone	30	
75-15-0	Carbon Disulfide	12	U
75-09-2	Methylene Chloride	4	J
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
78-93-3	2-Butanone	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
107-06-2	1,2-Dichloroethane	12	U
71-43-2	Benzene	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	12	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-Hexanone	12	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U

000053

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4033

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 22 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	12	U
95-47-6	o-Xylene	12	U
1330-20-7	Xylene (Total)	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropylbenzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
108-67-8	1,3,5-Trimethylbenzene	12	U
95-63-6	1,2,4-Trimethylbenzene	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	12	U
79-20-9	Methyl Acetate	6	J
110-81-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04C

Sample wt/vol: 5.1 (g/mL) G Lab File ID: V5E4033

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 22 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	10	NJ
2.		UNKNOWN	11.78	6	J
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E4043

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 20 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	200	
75-15-0	Carbon Disulfide	6	J
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	28	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	14	U
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	14	U
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	14	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E4043

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 20 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	14	U
95-47-6	o-Xylene	14	U
1330-20-7	Xylene (Total)	14	U
100-42-5	Styrene	14	U
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	14	U
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	14	U
95-63-6	1,2,4-Trimethylbenzene	14	U
541-73-1	1,3-Dichlorobenzene	14	U
106-46-7	1,4-Dichlorobenzene	14	U
95-50-1	1,2-Dichlorobenzene	14	U
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	26	
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05C

Sample wt/vol: 4.6 (g/mL) G Lab File ID: V5E4043

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 20 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	67-63-0	ISOPROPYL ALCOHOL	3.56	18	NJ
2.	66-25-1	HEXANAL	8.75	10	NJ
3.	470-82-6	EUCALYPTOL	12.33	20	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4036

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	37	U
74-87-3	Chloromethane	37	U
75-01-4	Vinyl Chloride	37	U
74-83-9	Bromomethane	37	U
75-00-3	Chloroethane	37	U
75-69-4	Trichlorofluoromethane	37	U
75-35-4	1,1-Dichloroethene	37	U
67-64-1	Acetone	170	
75-15-0	Carbon Disulfide	37	U
75-09-2	Methylene Chloride	15	J
156-60-5	trans-1,2-Dichloroethene	37	U
1634-04-4	Methyl tert-butyl ether	37	U
75-34-3	1,1-Dichloroethane	37	U
78-93-3	2-Butanone	37	U
156-59-2	cis-1,2-Dichloroethene	37	U
67-66-3	Chloroform	37	U
71-55-6	1,1,1-Trichloroethane	37	U
56-23-5	Carbon Tetrachloride	37	U
107-06-2	1,2-Dichloroethane	37	U
71-43-2	Benzene	37	U
79-01-6	Trichloroethene	37	U
78-87-5	1,2-Dichloropropane	37	U
75-27-4	Bromodichloromethane	37	U
10061-01-5	cis-1,3-Dichloropropene	37	U
108-10-1	4-Methyl-2-pentanone	37	U
108-88-3	Toluene	6	J
10061-02-6	trans-1,3-Dichloropropene	37	U
79-00-5	1,1,2-Trichloroethane	37	U
127-18-4	Tetrachloroethene	37	U
591-78-6	2-Hexanone	55	
124-48-1	Dibromochloromethane	37	U
106-93-4	1,2-Dibromoethane	37	U
108-90-7	Chlorobenzene	10	J
100-41-4	Ethylbenzene	11	J

000063

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4036

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	28	J
95-47-6	o-Xylene	12	J
1330-20-7	Xylene (Total)	40	
100-42-5	Styrene	11	J
75-25-2	Bromoform	37	U
98-82-8	Isopropylbenzene	11	J
79-34-5	1,1,2,2-Tetrachloroethane	37	U
108-67-8	1,3,5-Trimethylbenzene	29	J
95-63-6	1,2,4-Trimethylbenzene	27	J
541-73-1	1,3-Dichlorobenzene	20	J
106-46-7	1,4-Dichlorobenzene	20	J
95-50-1	1,2-Dichlorobenzene	22	J
96-12-8	1,2-Dibromo-3-chloropropane	37	U
120-82-1	1,2,4-Trichlorobenzene	37	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	37	U
79-20-9	Methyl Acetate	37	U
110-81-7	Cyclohexane	37	U
108-87-2	Methylcyclohexane	37	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4036

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	103-65-1	BENZENE, PROPYL-	11.13	28	NJ
2.	95-49-8	BENZENE, 1-CHLORO-2-METHYL-	11.24	20	NJ
3.	98-06-6	BENZENE, TERT-BUTYL-	11.74	25	NJ
4.	135-98-8	BENZENE, (1-METHYLPROPYL)-	12.01	22	NJ
5.	91-20-3	NAPHTHALENE	14.97	37	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06CRE

Sample wt/vol: 3.5 (g/mL) G Lab File ID: V5E4058

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	43	U
74-87-3	Chloromethane	43	U
75-01-4	Vinyl Chloride	43	U
74-83-9	Bromomethane	43	U
75-00-3	Chloroethane	43	U
75-69-4	Trichlorofluoromethane	43	U
75-35-4	1,1-Dichloroethene	43	U
67-64-1	Acetone	79	B
75-15-0	Carbon Disulfide	43	U
75-09-2	Methylene Chloride	12	J
156-60-5	trans-1,2-Dichloroethene	43	U
1634-04-4	Methyl tert-butyl ether	43	U
75-34-3	1,1-Dichloroethane	43	U
78-93-3	2-Butanone	43	U
156-59-2	cis-1,2-Dichloroethene	43	U
67-66-3	Chloroform	43	U
71-55-6	1,1,1-Trichloroethane	43	U
56-23-5	Carbon Tetrachloride	43	U
107-06-2	1,2-Dichloroethane	43	U
71-43-2	Benzene	43	U
79-01-6	Trichloroethene	43	U
78-87-5	1,2-Dichloropropane	43	U
75-27-4	Bromodichloromethane	43	U
10061-01-5	cis-1,3-Dichloropropene	43	U
108-10-1	4-Methyl-2-pentanone	43	U
108-88-3	Toluene	43	U
10061-02-6	trans-1,3-Dichloropropene	43	U
79-00-5	1,1,2-Trichloroethane	43	U
127-18-4	Tetrachloroethene	43	U
591-78-6	2-Hexanone	20	J
124-48-1	Dibromochloromethane	43	U
106-93-4	1,2-Dibromoethane	43	U
108-90-7	Chlorobenzene	43	U
100-41-4	Ethylbenzene	43	U

000066

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06CRE

Sample wt/vol: 3.5 (g/mL) G Lab File ID: V5E4058

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	43	U
95-47-6	o-Xylene	43	U
1330-20-7	Xylene (Total)	43	U
100-42-5	Styrene	43	U
75-25-2	Bromoform	43	U
98-82-8	Isopropylbenzene	43	U
79-34-5	1,1,2,2-Tetrachloroethane	43	U
108-67-8	1,3,5-Trimethylbenzene	43	U
95-63-6	1,2,4-Trimethylbenzene	43	U
541-73-1	1,3-Dichlorobenzene	43	U
106-46-7	1,4-Dichlorobenzene	43	U
95-50-1	1,2-Dichlorobenzene	43	U
96-12-8	1,2-Dibromo-3-chloropropane	43	U
120-82-1	1,2,4-Trichlorobenzene	43	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	43	U
79-20-9	Methyl Acetate	43	U
110-81-7	Cyclohexane	43	U
108-87-2	Methylcyclohexane	43	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-131RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06CRE

Sample wt/vol: 3.5 (g/mL) G Lab File ID: V5E4058

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 67 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.75	18	NJ
2.	91-20-3	NAPHTHALENE	14.98	47	NJ
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4037

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	21	U
74-87-3	Chloromethane	21	U
75-01-4	Vinyl Chloride	21	U
74-83-9	Bromomethane	21	U
75-00-3	Chloroethane	21	U
75-69-4	Trichlorofluoromethane	21	U
75-35-4	1,1-Dichloroethene	21	U
67-64-1	Acetone	100	
75-15-0	Carbon Disulfide	21	U
75-09-2	Methylene Chloride	18	J
156-60-5	trans-1,2-Dichloroethene	21	U
1634-04-4	Methyl tert-butyl ether	21	U
75-34-3	1,1-Dichloroethane	21	U
78-93-3	2-Butanone	21	U
156-59-2	cis-1,2-Dichloroethene	21	U
67-66-3	Chloroform	21	U
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
107-06-2	1,2-Dichloroethane	21	U
71-43-2	Benzene	21	U
79-01-6	Trichloroethene	21	U
78-87-5	1,2-Dichloropropane	21	U
75-27-4	Bromodichloromethane	21	U
10061-01-5	cis-1,3-Dichloropropene	21	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	4	J
10061-02-6	trans-1,3-Dichloropropene	21	U
79-00-5	1,1,2-Trichloroethane	21	U
127-18-4	Tetrachloroethene	21	U
591-78-6	2-Hexanone	21	U
124-48-1	Dibromochloromethane	21	U
106-93-4	1,2-Dibromoethane	21	U
108-90-7	Chlorobenzene	21	U
100-41-4	Ethylbenzene	21	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4037

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	21	U
95-47-6	o-Xylene	21	U
1330-20-7	Xylene (Total)	21	U
100-42-5	Styrene	21	U
75-25-2	Bromoform	21	U
98-82-8	Isopropylbenzene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	21	U
108-67-8	1,3,5-Trimethylbenzene	21	U
95-63-6	1,2,4-Trimethylbenzene	21	U
541-73-1	1,3-Dichlorobenzene	21	U
106-46-7	1,4-Dichlorobenzene	21	U
95-50-1	1,2-Dichlorobenzene	21	U
96-12-8	1,2-Dibromo-3-chloropropane	21	U
120-82-1	1,2,4-Trichlorobenzene	21	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	21	U
79-20-9	Methyl Acetate	20	J
110-81-7	Cyclohexane	21	U
108-87-2	Methylcyclohexane	21	U

000070

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07C

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4037

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	40	NJ
2.		UNKNOWN	11.07	11	J
3.		UNKNOWN	16.79	13	J
4.					
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E4059

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	20	U
74-87-3	Chloromethane	20	U
75-01-4	Vinyl Chloride	20	U
74-83-9	Bromomethane	20	U
75-00-3	Chloroethane	20	U
75-69-4	Trichlorofluoromethane	20	U
75-35-4	1,1-Dichloroethene	20	U
67-64-1	Acetone	36	B
75-15-0	Carbon Disulfide	20	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	20	U
1634-04-4	Methyl tert-butyl ether	20	U
75-34-3	1,1-Dichloroethane	20	U
78-93-3	2-Butanone	20	U
156-59-2	cis-1,2-Dichloroethene	20	U
67-66-3	Chloroform	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
107-06-2	1,2-Dichloroethane	20	U
71-43-2	Benzene	20	U
79-01-6	Trichloroethene	20	U
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
108-10-1	4-Methyl-2-pentanone	20	U
108-88-3	Toluene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
127-18-4	Tetrachloroethene	20	U
591-78-6	2-Hexanone	20	U
124-48-1	Dibromochloromethane	20	U
106-93-4	1,2-Dibromoethane	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U

000072

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E4059

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	20	U
95-47-6	o-Xylene	20	U
1330-20-7	Xylene (Total)	20	U
100-42-5	Styrene	20	U
75-25-2	Bromoform	20	U
98-82-8	Isopropylbenzene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
108-67-8	1,3,5-Trimethylbenzene	20	U
95-63-6	1,2,4-Trimethylbenzene	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
96-12-8	1,2-Dibromo-3-chloropropane	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	20	U
79-20-9	Methyl Acetate	4	J
110-81-7	Cyclohexane	20	U
108-87-2	Methylcyclohexane	20	U

000073

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-132RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07CRE

Sample wt/vol: 4.3 (g/mL) G Lab File ID: V5E4059

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	8	NJ
2.		UNKNOWN	11.07	13	J
3.					
4.					
5.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E4038

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 49 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	26	U
74-87-3	Chloromethane	26	U
75-01-4	Vinyl Chloride	26	U
74-83-9	Bromomethane	26	U
75-00-3	Chloroethane	26	U
75-69-4	Trichlorofluoromethane	26	U
75-35-4	1,1-Dichloroethene	26	U
67-64-1	Acetone	140	
75-15-0	Carbon Disulfide	26	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	26	U
1634-04-4	Methyl tert-butyl ether	26	U
75-34-3	1,1-Dichloroethane	26	U
78-93-3	2-Butanone	26	U
156-59-2	cis-1,2-Dichloroethene	26	U
67-66-3	Chloroform	26	U
71-55-6	1,1,1-Trichloroethane	26	U
56-23-5	Carbon Tetrachloride	26	U
107-06-2	1,2-Dichloroethane	26	U
71-43-2	Benzene	26	U
79-01-6	Trichloroethene	26	U
78-87-5	1,2-Dichloropropane	26	U
75-27-4	Bromodichloromethane	26	U
10061-01-5	cis-1,3-Dichloropropene	26	U
108-10-1	4-Methyl-2-pentanone	26	U
108-88-3	Toluene	26	U
10061-02-6	trans-1,3-Dichloropropene	26	U
79-00-5	1,1,2-Trichloroethane	26	U
127-18-4	Tetrachloroethene	26	U
591-78-6	2-Hexanone	26	U
124-48-1	Dibromochloromethane	26	U
106-93-4	1,2-Dibromoethane	26	U
108-90-7	Chlorobenzene	26	U
100-41-4	Ethylbenzene	26	U

000075

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E4038

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 49 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	26	U
95-47-6	o-Xylene	26	U
1330-20-7	Xylene (Total)	26	U
100-42-5	Styrene	26	U
75-25-2	Bromoform	26	U
98-82-8	Isopropylbenzene	26	U
79-34-5	1,1,2,2-Tetrachloroethane	26	U
108-67-8	1,3,5-Trimethylbenzene	26	U
95-63-6	1,2,4-Trimethylbenzene	26	U
541-73-1	1,3-Dichlorobenzene	26	U
106-46-7	1,4-Dichlorobenzene	26	U
95-50-1	1,2-Dichlorobenzene	26	U
96-12-8	1,2-Dibromo-3-chloropropane	26	U
120-82-1	1,2,4-Trichlorobenzene	26	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	26	U
79-20-9	Methyl Acetate	19	J
110-81-7	Cyclohexane	26	U
108-87-2	Methylcyclohexane	26	U

000076

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08C

Sample wt/vol: 3.8 (g/mL) G Lab File ID: V5E4038

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 49 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	38	NJ
2.					
3.					
4.					
5.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11C

Sample wt/vol: 3.1 (g/mL) G Lab File ID: V5E4040

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 75 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	64	U
74-87-3	Chloromethane	64	U
75-01-4	Vinyl Chloride	64	U
74-83-9	Bromomethane	64	U
75-00-3	Chloroethane	64	U
75-69-4	Trichlorofluoromethane	64	U
75-35-4	1,1-Dichloroethene	64	U
67-64-1	Acetone	920	
75-15-0	Carbon Disulfide	64	U
75-09-2	Methylene Chloride	19	J
156-60-5	trans-1,2-Dichloroethene	64	U
1634-04-4	Methyl tert-butyl ether	64	U
75-34-3	1,1-Dichloroethane	64	U
78-93-3	2-Butanone	100	
156-59-2	cis-1,2-Dichloroethene	64	U
67-66-3	Chloroform	64	U
71-55-6	1,1,1-Trichloroethane	64	U
56-23-5	Carbon Tetrachloride	64	U
107-06-2	1,2-Dichloroethane	64	U
71-43-2	Benzene	64	U
79-01-6	Trichloroethene	64	U
78-87-5	1,2-Dichloropropane	64	U
75-27-4	Bromodichloromethane	64	U
10061-01-5	cis-1,3-Dichloropropene	64	U
108-10-1	4-Methyl-2-pentanone	64	U
108-88-3	Toluene	64	U
10061-02-6	trans-1,3-Dichloropropene	64	U
79-00-5	1,1,2-Trichloroethane	64	U
127-18-4	Tetrachloroethene	64	U
591-78-6	2-Hexanone	64	U
124-48-1	Dibromochloromethane	64	U
106-93-4	1,2-Dibromoethane	64	U
108-90-7	Chlorobenzene	64	U
100-41-4	Ethylbenzene	64	U

000070

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11C

Sample wt/vol: 3.1 (g/mL) G Lab File ID: V5E4040

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 75 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	64	U
95-47-6	o-Xylene	64	U
1330-20-7	Xylene (Total)	64	U
100-42-5	Styrene	64	U
75-25-2	Bromoform	64	U
98-82-8	Isopropylbenzene	64	U
79-34-5	1,1,2,2-Tetrachloroethane	64	U
108-67-8	1,3,5-Trimethylbenzene	64	U
95-63-6	1,2,4-Trimethylbenzene	64	U
541-73-1	1,3-Dichlorobenzene	64	U
106-46-7	1,4-Dichlorobenzene	64	U
95-50-1	1,2-Dichlorobenzene	64	U
96-12-8	1,2-Dibromo-3-chloropropane	64	U
120-82-1	1,2,4-Trichlorobenzene	64	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	64	U
79-20-9	Methyl Acetate	210	
110-81-7	Cyclohexane	64	U
108-87-2	Methylcyclohexane	64	U

000079

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11C

Sample wt/vol: 3.1 (g/mL) G Lab File ID: V5E4040

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 75 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	64-17-5	ETHANOL	3.02	100	NJ
2.		UNKNOWN	3.55	50	J
3.	66-25-1	HEXANAL	8.75	67	NJ
4.	110-43-0	2-HEPTANONE	10.34	140	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09C

Sample wt/vol: 3.4 (g/mL) G Lab File ID: V5E4039

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 66 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	43	U
74-87-3	Chloromethane	43	U
75-01-4	Vinyl Chloride	43	U
74-83-9	Bromomethane	43	U
75-00-3	Chloroethane	43	U
75-69-4	Trichlorofluoromethane	43	U
75-35-4	1,1-Dichloroethene	43	U
67-64-1	Acetone	270	
75-15-0	Carbon Disulfide	43	U
75-09-2	Methylene Chloride	12	J
156-60-5	trans-1,2-Dichloroethene	43	U
1634-04-4	Methyl tert-butyl ether	43	U
75-34-3	1,1-Dichloroethane	43	U
78-93-3	2-Butanone	43	U
156-59-2	cis-1,2-Dichloroethene	43	U
67-66-3	Chloroform	43	U
71-55-6	1,1,1-Trichloroethane	43	U
56-23-5	Carbon Tetrachloride	43	U
107-06-2	1,2-Dichloroethane	43	U
71-43-2	Benzene	43	U
79-01-6	Trichloroethene	43	U
78-87-5	1,2-Dichloropropane	43	U
75-27-4	Bromodichloromethane	43	U
10061-01-5	cis-1,3-Dichloropropene	43	U
108-10-1	4-Methyl-2-pentanone	43	U
108-88-3	Toluene	43	U
10061-02-6	trans-1,3-Dichloropropene	43	U
79-00-5	1,1,2-Trichloroethane	43	U
127-18-4	Tetrachloroethene	43	U
591-78-6	2-Hexanone	43	U
124-48-1	Dibromochloromethane	43	U
106-93-4	1,2-Dibromoethane	43	U
108-90-7	Chlorobenzene	43	U
100-41-4	Ethylbenzene	43	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09C

Sample wt/vol: 3.4 (g/mL) G Lab File ID: V5E4039

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 66 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	43	U
95-47-6	o-Xylene	43	U
1330-20-7	Xylene (Total)	43	U
100-42-5	Styrene	43	U
75-25-2	Bromoform	43	U
98-82-8	Isopropylbenzene	43	U
79-34-5	1,1,2,2-Tetrachloroethane	43	U
108-67-8	1,3,5-Trimethylbenzene	43	U
95-63-6	1,2,4-Trimethylbenzene	43	U
541-73-1	1,3-Dichlorobenzene	43	U
106-46-7	1,4-Dichlorobenzene	43	U
95-50-1	1,2-Dichlorobenzene	43	U
96-12-8	1,2-Dibromo-3-chloropropane	43	U
120-82-1	1,2,4-Trichlorobenzene	43	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	43	U
79-20-9	Methyl Acetate	36	J
110-81-7	Cyclohexane	43	U
108-87-2	Methylcyclohexane	43	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09C

Sample wt/vol: 3.4 (g/mL) G Lab File ID: V5E4039

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 66 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 15 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	47	NJ
2.	80-56-8	.ALPHA.-PINENE	10.64	55	NJ
3.	79-92-5	CAMPHENE	10.97	24	NJ
4.	470-82-6	EUCALYPTOL	12.33	31	NJ
5.	61193-78-0	1,3,5-CYCLONONATRIENE, HEXAM	16.78	200	NJ
6.		UNKNOWN	17.01	22	J
7.		UNKNOWN	17.18	31	J
8.		UNKNOWN	17.31	130	J
9.	87-44-5	CARYOPHYLLENE	17.37	340	NJ
10.		UNKNOWN	17.51	28	J
11.	0-00-0	ISOCARYOPHYLLENE	17.56	92	NJ
12.		UNKNOWN	17.69	24	J
13.		UNKNOWN	17.73	40	J
14.	30021-74-0	NAPHTHALENE, 1,2,3,4,4A,5,6,	17.90	47	NJ
15.	483-76-1	NAPHTHALENE, 1,2,3,5,6,8A-HE	18.09	66	NJ
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17.					
18.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13C

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V5E4042

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	21	U
74-87-3	Chloromethane	21	U
75-01-4	Vinyl Chloride	21	U
74-83-9	Bromomethane	21	U
75-00-3	Chloroethane	21	U
75-69-4	Trichlorofluoromethane	21	U
75-35-4	1,1-Dichloroethene	21	U
67-64-1	Acetone	160	
75-15-0	Carbon Disulfide	21	U
75-09-2	Methylene Chloride	13	J
156-60-5	trans-1,2-Dichloroethene	21	U
1634-04-4	Methyl tert-butyl ether	21	U
75-34-3	1,1-Dichloroethane	21	U
78-93-3	2-Butanone	21	U
156-59-2	cis-1,2-Dichloroethene	21	U
67-66-3	Chloroform	21	U
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
107-06-2	1,2-Dichloroethane	21	U
71-43-2	Benzene	21	U
79-01-6	Trichloroethene	21	U
78-87-5	1,2-Dichloropropane	21	U
75-27-4	Bromodichloromethane	21	U
10061-01-5	cis-1,3-Dichloropropene	21	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	21	U
10061-02-6	trans-1,3-Dichloropropene	21	U
79-00-5	1,1,2-Trichloroethane	21	U
127-18-4	Tetrachloroethene	21	U
591-78-6	2-Hexanone	21	U
124-48-1	Dibromochloromethane	21	U
106-93-4	1,2-Dibromoethane	21	U
108-90-7	Chlorobenzene	21	U
100-41-4	Ethylbenzene	21	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13C

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V5E4042

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	21	U
95-47-6	o-Xylene	21	U
1330-20-7	Xylene (Total)	21	U
100-42-5	Styrene	21	U
75-25-2	Bromoform	21	U
98-82-8	Isopropylbenzene	21	U
79-34-5	1,1,2,2-Tetrachloroethane	21	U
108-67-8	1,3,5-Trimethylbenzene	21	U
95-63-6	1,2,4-Trimethylbenzene	21	U
541-73-1	1,3-Dichlorobenzene	21	U
106-46-7	1,4-Dichlorobenzene	21	U
95-50-1	1,2-Dichlorobenzene	21	U
96-12-8	1,2-Dibromo-3-chloropropane	21	U
120-82-1	1,2,4-Trichlorobenzene	21	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	21	U
79-20-9	Methyl Acetate	39	
110-81-7	Cyclohexane	21	U
108-87-2	Methylcyclohexane	21	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13C

Sample wt/vol: 4.0 (g/mL) G Lab File ID: V5E4042

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 41 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.02	15	J
2.	66-25-1	HEXANAL	8.75	10	NJ
3.	138-86-3	LIMONENE	12.13	12	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12C

Sample wt/vol: 3.3 (g/mL) G Lab File ID: V5E4041

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 39 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	25	U
74-87-3	Chloromethane	25	U
75-01-4	Vinyl Chloride	25	U
74-83-9	Bromomethane	25	U
75-00-3	Chloroethane	25	U
75-69-4	Trichlorofluoromethane	25	U
75-35-4	1,1-Dichloroethene	25	U
67-64-1	Acetone	210	
75-15-0	Carbon Disulfide	25	U
75-09-2	Methylene Chloride	13	J
156-60-5	trans-1,2-Dichloroethene	25	U
1634-04-4	Methyl tert-butyl ether	25	U
75-34-3	1,1-Dichloroethane	25	U
78-93-3	2-Butanone	22	J
156-59-2	cis-1,2-Dichloroethene	25	U
67-66-3	Chloroform	25	U
71-55-6	1,1,1-Trichloroethane	25	U
56-23-5	Carbon Tetrachloride	25	U
107-06-2	1,2-Dichloroethane	25	U
71-43-2	Benzene	25	U
79-01-6	Trichloroethene	25	U
78-87-5	1,2-Dichloropropane	25	U
75-27-4	Bromodichloromethane	25	U
10061-01-5	cis-1,3-Dichloropropene	25	U
108-10-1	4-Methyl-2-pentanone	25	U
108-88-3	Toluene	25	U
10061-02-6	trans-1,3-Dichloropropene	25	U
79-00-5	1,1,2-Trichloroethane	25	U
127-18-4	Tetrachloroethene	25	U
591-78-6	2-Hexanone	25	U
124-48-1	Dibromochloromethane	25	U
106-93-4	1,2-Dibromoethane	25	U
108-90-7	Chlorobenzene	25	U
100-41-4	Ethylbenzene	25	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12C

Sample wt/vol: 3.3 (g/mL) G Lab File ID: V5E4041

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 39 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	25	U
95-47-6	o-Xylene	25	U
1330-20-7	Xylene (Total)	25	U
100-42-5	Styrene	25	U
75-25-2	Bromoform	25	U
98-82-8	Isopropylbenzene	25	U
79-34-5	1,1,2,2-Tetrachloroethane	25	U
108-67-8	1,3,5-Trimethylbenzene	25	U
95-63-6	1,2,4-Trimethylbenzene	25	U
541-73-1	1,3-Dichlorobenzene	25	U
106-46-7	1,4-Dichlorobenzene	25	U
95-50-1	1,2-Dichlorobenzene	25	U
96-12-8	1,2-Dibromo-3-chloropropane	25	U
120-82-1	1,2,4-Trichlorobenzene	25	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	25	U
79-20-9	Methyl Acetate	38	
110-81-7	Cyclohexane	25	U
108-87-2	Methylcyclohexane	25	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12C

Sample wt/vol: 3.3 (g/mL) G Lab File ID: V5E4041

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. 39 Date Analyzed: 02/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	66-25-1	HEXANAL	8.76	85	NJ
2.	110-43-0	2-HEPTANONE	10.33	18	NJ
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2305

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2305

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18D

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2305

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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00114

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2585

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 22 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)Ether	420	U
95-57-8	2-Chlorophenol	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitroso-di-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
120-83-2	2,4-Dichlorophenol	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-Methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	420	U
208-96-8	Acenaphthylene	420	U
606-20-2	2,6-Dinitrotoluene	420	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2585

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 22 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl-phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	420	U
101-55-3	4-Bromophenyl-phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	420	U
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butylphthalate	420	U
206-44-0	Fluoranthene	420	U
129-00-0	Pyrene	420	U
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	420	U
218-01-9	Chrysene	420	U
117-81-7	bis(2-Ethylhexyl)phthalate	420	U
117-84-0	Di-n-octylphthalate	420	U
205-99-2	Benzo(b)fluoranthene	420	U
207-08-9	Benzo(k)fluoranthene	420	U
50-32-8	Benzo(a)pyrene	420	U
193-39-5	Indeno(1,2,3-cd)pyrene	420	U
53-70-3	Dibenzo(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U
92-52-4	1,1'-Biphenyl	420	U
98-86-2	Acetophenone	420	U
1912-24-9	Atrazine	420	U
100-52-7	Benzaldehyde	88	J
105-60-2	Caprolactum	420	U

(1) - Cannot be separated from Diphenylamine

000123

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S2D2585

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 22 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	18.67	200	J
2.		UNKNOWN	21.37	200	J
3.	1454-85-9	1-HEPTADECANOL	22.66	420	NJ
4.		UNKNOWN	23.16	310	J
5.		UNKNOWN	25.15	410	J
6.	59-02-9	VITAMIN E	25.35	230	NJ
7.		UNKNOWN	25.47	240	J
8.		UNKNOWN	25.79	240	J
9.		UNKNOWN	26.34	320	J
10.		UNKNOWN	26.49	7500	J
11.		UNKNOWN	26.63	670	J
12.		UNKNOWN	27.13	1700	J
13.		UNKNOWN	27.51	1400	J
14.	1058-61-3	STIGMAST-4-EN-3-ONE	28.56	370	NJ
15.		UNKNOWN	28.70	260	J
16.		UNKNOWN	29.72	2200	J
17.		UNKNOWN	29.94	1100	J
18.					
19.					
20.					
21.					
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23.					
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000124

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2589

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 20 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)Ether	410	U
95-57-8	2-Chlorophenol	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitroso-di-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
120-83-2	2,4-Dichlorophenol	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-Methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	1000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	1000	U
131-11-3	Dimethylphthalate	410	U
208-96-8	Acenaphthylene	410	U
606-20-2	2,6-Dinitrotoluene	410	U
99-09-2	3-Nitroaniline	1000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	1000	U
100-02-7	4-Nitrophenol	1000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U

000129

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2589

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 20 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl-phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	1000	U
534-52-1	4,6-Dinitro-2-methylphenol	1000	U
86-30-6	N-Nitrosodiphenylamine (1)	410	U
101-55-3	4-Bromophenyl-phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	1000	U
85-01-8	Phenanthrene	410	U
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butylphthalate	410	U
206-44-0	Fluoranthene	410	U
129-00-0	Pyrene	410	U
85-68-7	Butylbenzylphthalate	410	U
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	410	U
218-01-9	Chrysene	410	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	U
117-84-0	Di-n-octylphthalate	410	U
205-99-2	Benzo(b)fluoranthene	410	U
207-08-9	Benzo(k)fluoranthene	410	U
50-32-8	Benzo(a)pyrene	410	U
193-39-5	Indeno(1,2,3-cd)pyrene	410	U
53-70-3	Dibenzo(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	410	U
92-52-4	1,1'-Biphenyl	410	U
98-86-2	Acetophenone	410	U
1912-24-9	Atrazine	410	U
100-52-7	Benzaldehyde	300	J
105-60-2	Caprolactum	410	U

(1) - Cannot be separated from Diphenylamine

000130

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S2D2589

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 20 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.66	1400	J
2.	1599-67-3	1-DOCOSENE	21.34	550	NJ
3.		UNKNOWN	21.77	710	J
4.		UNKNOWN	22.43	630	J
5.	1599-67-3	1-DOCOSENE	22.65	1100	NJ
6.		UNKNOWN	23.16	790	J
7.	112-92-5	1-OCTADECANOL	23.87	730	NJ
8.		UNKNOWN	24.83	700	J
9.	1599-67-3	1-DOCOSENE	25.13	680	NJ
10.		UNKNOWN	26.55	18000	J
11.		UNKNOWN	26.66	1100	J
12.		UNKNOWN	26.94	780	J
13.		UNKNOWN	27.14	2600	J
14.		UNKNOWN	27.51	2600	J
15.	511-61-5	9,19-CYCLOLANOST-25-EN-3-OL,	28.72	770	NJ
16.		UNKNOWN	29.73	4600	J
17.		UNKNOWN	29.97	2200	J
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19.					
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000131

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2588

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 67 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)Ether	1000	U
95-57-8	2-Chlorophenol	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-Methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	2500	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	2500	U
131-11-3	Dimethylphthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
99-09-2	3-Nitroaniline	2500	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	2500	U
100-02-7	4-Nitrophenol	2500	U
132-64-9	Dibenzofuran	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U

000132

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2588

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 67 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	1000	U
100-01-6	4-Nitroaniline	2500	U
534-52-1	4,6-Dinitro-2-methylphenol	2500	U
86-30-6	N-Nitrosodiphenylamine (1)	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	2500	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
86-74-8	Carbazole	1000	U
84-74-2	Di-n-butylphthalate	1000	U
206-44-0	Fluoranthene	1000	U
129-00-0	Pyrene	1000	U
85-68-7	Butylbenzylphthalate	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
56-55-3	Benzo(a)anthracene	1000	U
218-01-9	Chrysene	1000	U
117-81-7	bis(2-Ethylhexyl)phthalate	100	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo(b)fluoranthene	1000	U
207-08-9	Benzo(k)fluoranthene	1000	U
50-32-8	Benzo(a)pyrene	1000	U
193-39-5	Indeno(1,2,3-cd)pyrene	1000	U
53-70-3	Dibenzo(a,h)anthracene	1000	U
191-24-2	Benzo(g,h,i)perylene	1000	U
92-52-4	1,1'-Biphenyl	1000	U
98-86-2	Acetophenone	1000	U
1912-24-9	Atrazine	1000	U
100-52-7	Benzaldehyde	850	J
105-60-2	Caprolactum	1000	U

(1) - Cannot be separated from Diphenylamine

000133

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2588

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 67 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.65	3400	J
2.		UNKNOWN	19.15	1500	J
3.	123-95-5	OCTADECANOIC ACID, BUTYL EST	20.60	1400	NJ
4.	1599-67-3	1-DOCOSENE	21.34	2600	NJ
5.		UNKNOWN	21.76	1900	J
6.		UNKNOWN	22.43	1400	J
7.	1599-67-3	1-DOCOSENE	22.65	3900	NJ
8.		UNKNOWN	23.17	2400	J
9.	112-92-5	1-OCTADECANOL	23.87	2400	NJ
10.	0-00-0	2-HEPTACOSANONE	23.94	2100	NJ
11.	7616-22-0	.GAMMA.-TOCOPHEROL	24.80	2000	NJ
12.		UNKNOWN	25.13	2500	J
13.		UNKNOWN	26.54	38000	J
14.		UNKNOWN	27.14	6300	J
15.		UNKNOWN	27.52	6300	J
16.		UNKNOWN	29.73	8000	J
17.		UNKNOWN	29.96	4400	J
18.					
19.					
20.					
21.					
22.					
23.					
24.					
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000134

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2594

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	550	U
111-44-4	bis(2-Chloroethyl)Ether	550	U
95-57-8	2-Chlorophenol	550	U
95-48-7	2-Methylphenol	550	U
108-60-1	2,2'-oxybis(1-Chloropropane)	550	U
106-44-5	4-Methylphenol	550	U
621-64-7	N-Nitroso-di-n-propylamine	550	U
67-72-1	Hexachloroethane	550	U
98-95-3	Nitrobenzene	550	U
78-59-1	Isophorone	550	U
88-75-5	2-Nitrophenol	550	U
105-67-9	2,4-Dimethylphenol	550	U
120-83-2	2,4-Dichlorophenol	550	U
91-20-3	Naphthalene	550	U
106-47-8	4-Chloroaniline	550	U
111-91-1	bis(2-Chloroethoxy)methane	550	U
87-68-3	Hexachlorobutadiene	550	U
59-50-7	4-Chloro-3-Methylphenol	550	U
91-57-6	2-Methylnaphthalene	550	U
77-47-4	Hexachlorocyclopentadiene	550	U
88-06-2	2,4,6-Trichlorophenol	550	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	550	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	550	U
208-96-8	Acenaphthylene	550	U
606-20-2	2,6-Dinitrotoluene	550	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	550	U
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	550	U
121-14-2	2,4-Dinitrotoluene	550	U

000135

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2594

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	550	U
7005-72-3	4-Chlorophenyl-phenylether	550	U
86-73-7	Fluorene	550	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	550	U
101-55-3	4-Bromophenyl-phenylether	550	U
118-74-1	Hexachlorobenzene	550	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	550	U
120-12-7	Anthracene	550	U
86-74-8	Carbazole	550	U
84-74-2	Di-n-butylphthalate	550	U
206-44-0	Fluoranthene	550	U
129-00-0	Pyrene	550	U
85-68-7	Butylbenzylphthalate	550	U
91-94-1	3,3'-Dichlorobenzidine	550	U
56-55-3	Benzo(a)anthracene	550	U
218-01-9	Chrysene	550	U
117-81-7	bis(2-Ethylhexyl)phthalate	550	U
117-84-0	Di-n-octylphthalate	550	U
205-99-2	Benzo(b)fluoranthene	550	U
207-08-9	Benzo(k)fluoranthene	550	U
50-32-8	Benzo(a)pyrene	550	U
193-39-5	Indeno(1,2,3-cd)pyrene	550	U
53-70-3	Dibenzo(a,h)anthracene	550	U
191-24-2	Benzo(g,h,i)perylene	550	U
92-52-4	1,1'-Biphenyl	550	U
98-86-2	Acetophenone	550	U
1912-24-9	Atrazine	550	U
100-52-7	Benzaldehyde	79	J
105-60-2	Caprolactum	550	U

(1) - Cannot be separated from Diphenylamine

000136

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2594

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	501-92-8	PHENOL, 4-(2-PROPENYL)-	10.35	3600	NJ
2.	39029-41-9	NAPHTHALENE, 1,2,3,4,4A,5,6,	13.39	1300	NJ
3.		UNKNOWN	18.57	1700	J
4.		UNKNOWN	19.42	16000	J
5.	6475-05-4	AKUAMMILAN-17-OIC ACID, METH	19.44	3300	NJ
6.		UNKNOWN	19.66	2400	J
7.	3907-67-3	ESTRA-1,3,5,7,9-PENTAEN-17-O	19.89	920	NJ
8.		UNKNOWN	20.01	890	J
9.		UNKNOWN	20.08	3300	J
10.		UNKNOWN	21.23	920	J
11.		UNKNOWN	21.35	970	J
12.		UNKNOWN	22.37	850	J
13.	77899-03-7	1-HENEICOSYL FORMATE	22.65	970	NJ
14.		UNKNOWN	23.35	1600	J
15.		UNKNOWN	23.50	1900	J
16.		UNKNOWN	25.07	1400	J
17.	35060-26-5	D:B-FRIEDO-18,19-SECOLUP-19-	26.47	2200	NJ
18.		UNKNOWN	26.56	2400	J
19.	83-47-6	.GAMMA.-SITOSTEROL	27.14	1700	NJ
20.					
21.					
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24.					
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000137

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2593

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 49 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	640	U
111-44-4	bis(2-Chloroethyl)Ether	640	U
95-57-8	2-Chlorophenol	640	U
95-48-7	2-Methylphenol	640	U
108-60-1	2,2'-oxybis(1-Chloropropane)	640	U
106-44-5	4-Methylphenol	640	U
621-64-7	N-Nitroso-di-n-propylamine	640	U
67-72-1	Hexachloroethane	640	U
98-95-3	Nitrobenzene	640	U
78-59-1	Isophorone	640	U
88-75-5	2-Nitrophenol	640	U
105-67-9	2,4-Dimethylphenol	640	U
120-83-2	2,4-Dichlorophenol	640	U
91-20-3	Naphthalene	640	U
106-47-8	4-Chloroaniline	640	U
111-91-1	bis(2-Chloroethoxy)methane	640	U
87-68-3	Hexachlorobutadiene	640	U
59-50-7	4-Chloro-3-Methylphenol	640	U
91-57-6	2-Methylnaphthalene	640	U
77-47-4	Hexachlorocyclopentadiene	640	U
88-06-2	2,4,6-Trichlorophenol	640	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	640	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	640	U
208-96-8	Acenaphthylene	640	U
606-20-2	2,6-Dinitrotoluene	640	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	640	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	640	U
121-14-2	2,4-Dinitrotoluene	640	U

000138

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2593

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 49 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	640	U
7005-72-3	4-Chlorophenyl-phenylether	640	U
86-73-7	Fluorene	640	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	640	U
101-55-3	4-Bromophenyl-phenylether	640	U
118-74-1	Hexachlorobenzene	640	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	640	U
120-12-7	Anthracene	640	U
86-74-8	Carbazole	640	U
84-74-2	Di-n-butylphthalate	640	U
206-44-0	Fluoranthene	640	U
129-00-0	Pyrene	640	U
85-68-7	Butylbenzylphthalate	640	U
91-94-1	3,3'-Dichlorobenzidine	640	U
56-55-3	Benzo(a)anthracene	640	U
218-01-9	Chrysene	640	U
117-81-7	bis(2-Ethylhexyl)phthalate	640	U
117-84-0	Di-n-octylphthalate	640	U
205-99-2	Benzo(b)fluoranthene	640	U
207-08-9	Benzo(k)fluoranthene	640	U
50-32-8	Benzo(a)pyrene	640	U
193-39-5	Indeno(1,2,3-cd)pyrene	640	U
53-70-3	Dibenzo(a,h)anthracene	640	U
191-24-2	Benzo(g,h,i)perylene	640	U
92-52-4	1,1'-Biphenyl	640	U
98-86-2	Acetophenone	640	U
1912-24-9	Atrazine	640	U
100-52-7	Benzaldehyde	250	J
105-60-2	Caprolactum	640	U

(1) - Cannot be separated from Diphenylamine

000139

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S2D2593

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 49 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	18.67	1100	J
2.	56554-87-1	16-OCTADECENAL	20.91	1200	NJ
3.	1599-67-3	1-DOCOSENE	21.34	880	NJ
4.	56554-89-3	14-OCTADECENAL	22.24	920	NJ
5.	3386-33-2	OCTADECANE, 1-CHLORO-	22.64	1600	NJ
6.	638-66-4	OCTADECANAL	23.48	1000	NJ
7.		UNKNOWN	23.83	1600	J
8.	629-66-3	2-NONADECANONE	23.94	1100	NJ
9.		UNKNOWN	25.12	1400	J
10.	59-02-9	VITAMIN E	25.35	1100	NJ
11.		UNKNOWN	26.54	25000	J
12.		UNKNOWN	26.65	1200	J
13.		UNKNOWN	26.71	1400	J
14.		UNKNOWN	27.14	4000	J
15.		UNKNOWN	27.50	2500	J
16.	22611-26-3	D:C-FRIEDOOLEAN-8-EN-3-ONE	27.83	1200	NJ
17.		UNKNOWN	29.72	5300	J
18.		UNKNOWN	29.96	2200	J
19.					
20.					
21.					
22.					
23.					
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000140

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2371

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 75 decanted: (Y/N) N Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1300	U
111-44-4	bis(2-Chloroethyl)Ether	1300	U
95-57-8	2-Chlorophenol	1300	U
95-48-7	2-Methylphenol	1300	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1300	U
106-44-5	4-Methylphenol	1300	U
621-64-7	N-Nitroso-di-n-propylamine	1300	U
67-72-1	Hexachloroethane	1300	U
98-95-3	Nitrobenzene	1300	U
78-59-1	Isophorone	1300	U
88-75-5	2-Nitrophenol	1300	U
105-67-9	2,4-Dimethylphenol	1300	U
120-83-2	2,4-Dichlorophenol	1300	U
91-20-3	Naphthalene	1300	U
106-47-8	4-Chloroaniline	1300	U
111-91-1	bis(2-Chloroethoxy)methane	1300	U
87-68-3	Hexachlorobutadiene	1300	U
59-50-7	4-Chloro-3-Methylphenol	1300	U
91-57-6	2-Methylnaphthalene	1300	U
77-47-4	Hexachlorocyclopentadiene	1300	U
88-06-2	2,4,6-Trichlorophenol	1300	U
95-95-4	2,4,5-Trichlorophenol	3300	U
91-58-7	2-Chloronaphthalene	1300	U
88-74-4	2-Nitroaniline	3300	U
131-11-3	Dimethylphthalate	1300	U
208-96-8	Acenaphthylene	1300	U
606-20-2	2,6-Dinitrotoluene	1300	U
99-09-2	3-Nitroaniline	3300	U
83-32-9	Acenaphthene	1300	U
51-28-5	2,4-Dinitrophenol	3300	U
100-02-7	4-Nitrophenol	3300	U
132-64-9	Dibenzofuran	1300	U
121-14-2	2,4-Dinitrotoluene	1300	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2371

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 75 decanted: (Y/N) N Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1300	U
7005-72-3	4-Chlorophenyl-phenylether	1300	U
86-73-7	Fluorene	1300	U
100-01-6	4-Nitroaniline	3300	U
534-52-1	4,6-Dinitro-2-methylphenol	3300	U
86-30-6	N-Nitrosodiphenylamine (1)	1300	U
101-55-3	4-Bromophenyl-phenylether	1300	U
118-74-1	Hexachlorobenzene	1300	U
87-86-5	Pentachlorophenol	3300	U
85-01-8	Phenanthrene	1300	U
120-12-7	Anthracene	1300	U
86-74-8	Carbazole	1300	U
84-74-2	Di-n-butylphthalate	1300	U
206-44-0	Fluoranthene	1300	U
129-00-0	Pyrene	1300	U
85-68-7	Butylbenzylphthalate	1300	U
91-94-1	3,3'-Dichlorobenzidine	1300	U
56-55-3	Benzo(a)anthracene	1300	U
218-01-9	Chrysene	1300	U
117-81-7	bis(2-Ethylhexyl)phthalate	1300	U
117-84-0	Di-n-octylphthalate	1300	U
205-99-2	Benzo(b)fluoranthene	1300	U
207-08-9	Benzo(k)fluoranthene	1300	U
50-32-8	Benzo(a)pyrene	1300	U
193-39-5	Indeno(1,2,3-cd)pyrene	1300	U
53-70-3	Dibenzo(a,h)anthracene	1300	U
191-24-2	Benzo(g,h,i)perylene	1300	U
92-52-4	1,1'-Biphenyl	1300	U
98-86-2	Acetophenone	1300	U
1912-24-9	Atrazine	1300	U
100-52-7	Benzaldehyde	710	J
105-60-2	Caprolactum	1300	U

(1) - Cannot be separated from Diphenylamine

000142

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2371

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 75 decanted: (Y/N) N Date Extracted: 02/21/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	124-07-2	OCTANOIC ACID	9.86	1500	NJ
2.	334-48-5	DECANOIC ACID	12.23	3900	NJ
3.		UNKNOWN	13.02	760	J
4.	57-10-3	HEXADECANOIC ACID	17.99	2800	NJ
5.		UNKNOWN	19.44	810	J
6.		UNKNOWN	21.97	3000	J
7.		UNKNOWN	23.29	1500	J
8.		UNKNOWN	23.85	2200	J
9.	7616-22-0	.GAMMA.-TOCOPHEROL	25.69	1600	NJ
10.		UNKNOWN	26.04	2400	J
11.		UNKNOWN	26.42	14000	J
12.		UNKNOWN	26.81	10000	J
13.		UNKNOWN	28.02	2400	J
14.		UNKNOWN	28.66	12000	J
15.	127-22-0	TARAXEROL	29.15	11000	NJ
16.	1058-61-3	STIGMAST-4-EN-3-ONE	30.42	6100	NJ
17.					
18.					
19.					
20.					
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23.					
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29.					
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000143

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2592

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 66 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	970	U
111-44-4	bis(2-Chloroethyl)Ether	970	U
95-57-8	2-Chlorophenol	970	U
95-48-7	2-Methylphenol	970	U
108-60-1	2,2'-oxybis(1-Chloropropane)	970	U
106-44-5	4-Methylphenol	970	U
621-64-7	N-Nitroso-di-n-propylamine	970	U
67-72-1	Hexachloroethane	970	U
98-95-3	Nitrobenzene	970	U
78-59-1	Isophorone	970	U
88-75-5	2-Nitrophenol	970	U
105-67-9	2,4-Dimethylphenol	970	U
120-83-2	2,4-Dichlorophenol	970	U
91-20-3	Naphthalene	970	U
106-47-8	4-Chloroaniline	970	U
111-91-1	bis(2-Chloroethoxy)methane	970	U
87-68-3	Hexachlorobutadiene	970	U
59-50-7	4-Chloro-3-Methylphenol	970	U
91-57-6	2-Methylnaphthalene	970	U
77-47-4	Hexachlorocyclopentadiene	970	U
88-06-2	2,4,6-Trichlorophenol	970	U
95-95-4	2,4,5-Trichlorophenol	2400	U
91-58-7	2-Chloronaphthalene	970	U
88-74-4	2-Nitroaniline	2400	U
131-11-3	Dimethylphthalate	970	U
208-96-8	Acenaphthylene	970	U
606-20-2	2,6-Dinitrotoluene	970	U
99-09-2	3-Nitroaniline	2400	U
83-32-9	Acenaphthene	970	U
51-28-5	2,4-Dinitrophenol	2400	U
100-02-7	4-Nitrophenol	2400	U
132-64-9	Dibenzofuran	970	U
121-14-2	2,4-Dinitrotoluene	970	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2592

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 66 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	970	U
7005-72-3	4-Chlorophenyl-phenylether	970	U
86-73-7	Fluorene	970	U
100-01-6	4-Nitroaniline	2400	U
534-52-1	4,6-Dinitro-2-methylphenol	2400	U
86-30-6	N-Nitrosodiphenylamine (1)	970	U
101-55-3	4-Bromophenyl-phenylether	970	U
118-74-1	Hexachlorobenzene	970	U
87-86-5	Pentachlorophenol	2400	U
85-01-8	Phenanthrene	970	U
120-12-7	Anthracene	970	U
86-74-8	Carbazole	970	U
84-74-2	Di-n-butylphthalate	970	U
206-44-0	Fluoranthene	970	U
129-00-0	Pyrene	970	U
85-68-7	Butylbenzylphthalate	970	U
91-94-1	3,3'-Dichlorobenzidine	970	U
56-55-3	Benzo(a)anthracene	970	U
218-01-9	Chrysene	970	U
117-81-7	bis(2-Ethylhexyl)phthalate	970	U
117-84-0	Di-n-octylphthalate	970	U
205-99-2	Benzo(b)fluoranthene	970	U
207-08-9	Benzo(k)fluoranthene	970	U
50-32-8	Benzo(a)pyrene	970	U
193-39-5	Indeno(1,2,3-cd)pyrene	970	U
53-70-3	Dibenzo(a,h)anthracene	970	U
191-24-2	Benzo(g,h,i)perylene	970	U
92-52-4	1,1'-Biphenyl	970	U
98-86-2	Acetophenone	970	U
1912-24-9	Atrazine	970	U
100-52-7	Benzaldehyde	810	J
105-60-2	Caprolactum	970	U

(1) - Cannot be separated from Diphenylamine

000145

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2592

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 66 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	65-85-0	BENZOIC ACID	9.38	3200	NJ
2.	87-44-5	CARYOPHYLLENE	12.42	7100	NJ
3.	122-69-0	CINNAMYL CINNAMATE	21.00	9100	NJ
4.	112-92-5	1-OCTADECANOL	21.34	2700	NJ
5.	18956-15-5	2-PROPEN-1-ONE, 1-(2,6-DIHYD	21.77	2300	NJ
6.	0-00-0	METHYL 3-(1-FORMYL-3,4-METHY	21.98	3100	NJ
7.	6624-79-9	1-DOTRIACONTANOL	22.65	7000	NJ
8.	4292-19-7	DODECANE, 1-IODO-	23.84	8200	NJ
9.	7390-81-0	OXIRANE, HEXADECYL-	24.68	1600	NJ
10.	0-00-0	3,4-DIHYDRO-2,5,8-TRIMETHYL-	24.80	1600	NJ
11.	36653-82-4	1-HEXADECANOL	25.12	2700	NJ
12.		UNKNOWN	25.21	2500	J
13.	59-02-9	VITAMIN E	25.35	1600	NJ
14.	0-00-0	2-PENTACOSANONE	26.91	1700	NJ
15.	83-47-6	.GAMMA.-SITOSTEROL	27.14	3700	NJ
16.	127-22-0	TARAXEROL	27.51	2400	NJ
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2591

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	550	U
111-44-4	bis(2-Chloroethyl)Ether	550	U
95-57-8	2-Chlorophenol	550	U
95-48-7	2-Methylphenol	550	U
108-60-1	2,2'-oxybis(1-Chloropropane)	550	U
106-44-5	4-Methylphenol	550	U
621-64-7	N-Nitroso-di-n-propylamine	550	U
67-72-1	Hexachloroethane	550	U
98-95-3	Nitrobenzene	550	U
78-59-1	Isophorone	550	U
88-75-5	2-Nitrophenol	550	U
105-67-9	2,4-Dimethylphenol	550	U
120-83-2	2,4-Dichlorophenol	550	U
91-20-3	Naphthalene	550	U
106-47-8	4-Chloroaniline	550	U
111-91-1	bis(2-Chloroethoxy)methane	550	U
87-68-3	Hexachlorobutadiene	550	U
59-50-7	4-Chloro-3-Methylphenol	550	U
91-57-6	2-Methylnaphthalene	550	U
77-47-4	Hexachlorocyclopentadiene	550	U
88-06-2	2,4,6-Trichlorophenol	550	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	550	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	550	U
208-96-8	Acenaphthylene	550	U
606-20-2	2,6-Dinitrotoluene	550	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	550	U
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	550	U
121-14-2	2,4-Dinitrotoluene	550	U

000147

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2591

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	550	U
7005-72-3	4-Chlorophenyl-phenylether	550	U
86-73-7	Fluorene	550	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	550	U
101-55-3	4-Bromophenyl-phenylether	550	U
118-74-1	Hexachlorobenzene	550	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	550	U
120-12-7	Anthracene	550	U
86-74-8	Carbazole	550	U
84-74-2	Di-n-butylphthalate	550	U
206-44-0	Fluoranthene	550	U
129-00-0	Pyrene	550	U
85-68-7	Butylbenzylphthalate	550	U
91-94-1	3,3'-Dichlorobenzidine	550	U
56-55-3	Benzo(a)anthracene	550	U
218-01-9	Chrysene	550	U
117-81-7	bis(2-Ethylhexyl)phthalate	550	U
117-84-0	Di-n-octylphthalate	550	U
205-99-2	Benzo(b)fluoranthene	550	U
207-08-9	Benzo(k)fluoranthene	550	U
50-32-8	Benzo(a)pyrene	550	U
193-39-5	Indeno(1,2,3-cd)pyrene	550	U
53-70-3	Dibenzo(a,h)anthracene	550	U
191-24-2	Benzo(g,h,i)perylene	550	U
92-52-4	1,1'-Biphenyl	550	U
98-86-2	Acetophenone	550	U
1912-24-9	Atrazine	550	U
100-52-7	Benzaldehyde	110	J
105-60-2	Caprolactum	550	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13A

Sample wt/vol: 30.4 (g/mL) G Lab File ID: S2D2591

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	65-85-0	BENZOIC ACID	9.46	3700	NJ
2.	17699-14-8	.ALPHA.-CUBEBENE	11.53	470	NJ
3.	483-76-1	NAPHTHALENE, 1,2,3,5,6,8A-HE	13.20	450	NJ
4.	483-76-1	NAPHTHALENE, 1,2,3,5,6,8A-HE	13.40	570	NJ
5.	3856-25-5	COPAENE	14.71	1000	NJ
6.		UNKNOWN	19.60	670	J
7.		UNKNOWN	20.23	950	J
8.	122-69-0	CINNAMYL CINNAMATE	21.02	12000	NJ
9.	629-96-9	1-EICOSANOL	21.34	1800	NJ
10.	18435-45-5	1-NONADECENE	22.65	4200	NJ
11.		UNKNOWN	25.12	2200	J
12.	0-00-0	2-NONACOSANONE	25.21	970	NJ
13.	83-48-7	STIGMASTEROL	26.54	1300	NJ
14.	83-47-6	.GAMMA.-SITOSTEROL	27.14	2700	NJ
15.	55887-94-0	OLEAN-18-EN-28-OIC ACID, 3-O	29.78	3100	NJ
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000149

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2595

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 39 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	540	U
111-44-4	bis(2-Chloroethyl)Ether	540	U
95-57-8	2-Chlorophenol	540	U
95-48-7	2-Methylphenol	540	U
108-60-1	2,2'-oxybis(1-Chloropropane)	540	U
106-44-5	4-Methylphenol	540	U
621-64-7	N-Nitroso-di-n-propylamine	540	U
67-72-1	Hexachloroethane	540	U
98-95-3	Nitrobenzene	540	U
78-59-1	Isophorone	540	U
88-75-5	2-Nitrophenol	540	U
105-67-9	2,4-Dimethylphenol	540	U
120-83-2	2,4-Dichlorophenol	540	U
91-20-3	Naphthalene	540	U
106-47-8	4-Chloroaniline	540	U
111-91-1	bis(2-Chloroethoxy)methane	540	U
87-68-3	Hexachlorobutadiene	540	U
59-50-7	4-Chloro-3-Methylphenol	540	U
91-57-6	2-Methylnaphthalene	540	U
77-47-4	Hexachlorocyclopentadiene	540	U
88-06-2	2,4,6-Trichlorophenol	540	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	540	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	540	U
208-96-8	Acenaphthylene	540	U
606-20-2	2,6-Dinitrotoluene	540	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	540	U
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	540	U
121-14-2	2,4-Dinitrotoluene	540	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2595

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 39 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	540	U
7005-72-3	4-Chlorophenyl-phenylether	540	U
86-73-7	Fluorene	540	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	540	U
101-55-3	4-Bromophenyl-phenylether	540	U
118-74-1	Hexachlorobenzene	540	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	540	U
120-12-7	Anthracene	540	U
86-74-8	Carbazole	540	U
84-74-2	Di-n-butylphthalate	540	U
206-44-0	Fluoranthene	540	U
129-00-0	Pyrene	540	U
85-68-7	Butylbenzylphthalate	540	U
91-94-1	3,3'-Dichlorobenzidine	540	U
56-55-3	Benzo(a)anthracene	540	U
218-01-9	Chrysene	540	U
117-81-7	bis(2-Ethylhexyl)phthalate	540	U
117-84-0	Di-n-octylphthalate	540	U
205-99-2	Benzo(b)fluoranthene	540	U
207-08-9	Benzo(k)fluoranthene	540	U
50-32-8	Benzo(a)pyrene	540	U
193-39-5	Indeno(1,2,3-cd)pyrene	540	U
53-70-3	Dibenzo(a,h)anthracene	540	U
191-24-2	Benzo(g,h,i)perylene	540	U
92-52-4	1,1'-Biphenyl	540	U
98-86-2	Acetophenone	540	U
1912-24-9	Atrazine	540	U
100-52-7	Benzaldehyde	140	J
105-60-2	Caprolactum	540	U

(1) - Cannot be separated from Diphenylamine

000151

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: S2D2595

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: 39 decanted: (Y/N) N Date Extracted: 02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	18.66	700	J
2.	124-25-4	TETRADECANAL	20.91	1000	NJ
3.	2136-70-1	ETHANOL, 2-(TETRADECYLOXY)-	22.65	1200	NJ
4.		UNKNOWN	23.17	1200	J
5.	1599-67-3	1-DOCOSENE	23.87	1200	NJ
6.		UNKNOWN	24.82	1100	J
7.		UNKNOWN	25.13	1400	J
8.		UNKNOWN	25.22	1400	J
9.		UNKNOWN	25.36	1000	J
10.	35060-26-5	D:B-FRIEDO-18,19-SECOLUP-19-	26.56	28000	NJ
11.		UNKNOWN	26.66	1500	J
12.		UNKNOWN	26.73	1200	J
13.	83-47-6	.GAMMA.-SITOSTEROL	27.15	4000	NJ
14.	127-22-0	TARAXEROL	27.51	1900	NJ
15.		UNKNOWN	27.84	970	J
16.		UNKNOWN	29.74	5600	J
17.		UNKNOWN	29.97	2100	J
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18D

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E2D4827F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 02/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000165

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E2D4796F

% Moisture: 22 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	42	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U

000166

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-05A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2D4797F

% Moisture: 20 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	41	U
11104-28-2	Aroclor-1221	41	U
11141-16-5	Aroclor-1232	41	U
53469-21-9	Aroclor-1242	41	U
12672-29-6	Aroclor-1248	41	U
11097-69-1	Aroclor-1254	41	U
11096-82-5	Aroclor-1260	41	U

000167

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-06A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4798F

% Moisture: 67 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	100	U
11104-28-2	Aroclor-1221	100	U
11141-16-5	Aroclor-1232	100	U
53469-21-9	Aroclor-1242	100	U
12672-29-6	Aroclor-1248	100	U
11097-69-1	Aroclor-1254	100	U
11096-82-5	Aroclor-1260	100	U

000168

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-07A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4799F

% Moisture: 41 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	56	U
11104-28-2	Aroclor-1221	56	U
11141-16-5	Aroclor-1232	56	U
53469-21-9	Aroclor-1242	56	U
12672-29-6	Aroclor-1248	56	U
11097-69-1	Aroclor-1254	56	U
11096-82-5	Aroclor-1260	56	U

000169

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-08A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E2D4800F

% Moisture: 49 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	65	U
11104-28-2	Aroclor-1221	65	U
11141-16-5	Aroclor-1232	65	U
53469-21-9	Aroclor-1242	65	U
12672-29-6	Aroclor-1248	65	U
11097-69-1	Aroclor-1254	65	U
11096-82-5	Aroclor-1260	65	U

000170

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-11A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2D4802F

% Moisture: 75 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	130	U
11104-28-2	Aroclor-1221	130	U
11141-16-5	Aroclor-1232	130	U
53469-21-9	Aroclor-1242	130	U
12672-29-6	Aroclor-1248	130	U
11097-69-1	Aroclor-1254	130	U
11096-82-5	Aroclor-1260	180	

000171

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-09A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E2D4801F

% Moisture: 66 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	96	U
11104-28-2	Aroclor-1221	96	U
11141-16-5	Aroclor-1232	96	U
53469-21-9	Aroclor-1242	96	U
12672-29-6	Aroclor-1248	96	U
11097-69-1	Aroclor-1254	96	U
11096-82-5	Aroclor-1260	96	U

000172

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-13A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: E2D4810F

% Moisture: 41 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	56	U
11104-28-2	Aroclor-1221	56	U
11141-16-5	Aroclor-1232	56	U
53469-21-9	Aroclor-1242	56	U
12672-29-6	Aroclor-1248	56	U
11097-69-1	Aroclor-1254	56	U
11096-82-5	Aroclor-1260	56	U

000173

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: B0279-12A

Sample wt/vol: 30.1 (g/mL) G Lab File ID: E2D4803F

% Moisture: 39 decanted: (Y/N) N Date Received: 02/19/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	54	U
11104-28-2	Aroclor-1221	54	U
11141-16-5	Aroclor-1232	54	U
53469-21-9	Aroclor-1242	54	U
12672-29-6	Aroclor-1248	54	U
11097-69-1	Aroclor-1254	54	U
11096-82-5	Aroclor-1260	54	U

000174

ALKANE NARRATIVE REPORT
Report date : 03/21/2003
SDG: B0279

Client Sample ID: WOD-SS-129 Lab Sample ID: B0279-04A File ID: S2D2585

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.83	310	J
Straight-chained Alkane	25.05	770	J

Client Sample ID: WOD-SS-131 Lab Sample ID: B0279-06A File ID: S2D2588

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.83	2200	J
Straight-chained Alkane	25.05	4300	J

Client Sample ID: WOD-SS-130 Lab Sample ID: B0279-05A File ID: S2D2589

Compound	RT	Est. Conc.	Q
Branched Alkane	23.83	850	J
Straight-chained Alkane	25.05	1900	J

Client Sample ID: WOD-SS-138 Lab Sample ID: B0279-13A File ID: S2D2591

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.84	7200	J
Branched Alkane	25.04	5700	J
Straight-chained Alkane	26.66	1400	J

Client Sample ID: WOD-SS-137 Lab Sample ID: B0279-09A File ID: S2D2592

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	24.40	1900	J
Straight-chained Alkane	25.05	7100	J
Straight-chained Alkane	26.67	1800	J

Client Sample ID: WOD-SS-133 Lab Sample ID: B0279-08A File ID: S2D2593

Compound	RT	Est. Conc.	Q
Branched Alkane	25.05	2100	J

Client Sample ID: WOD-SS-DUP09 Lab Sample ID: B0279-12A File ID: S2D25

Compound	RT	Est. Conc.	Q
Straight-chained Alkane	23.83	1400	J
Branched Alkane	25.05	2200	J

Client Sample ID: WOD-SS-136 Lab Sample ID: B0279-11A File ID: S3C2371

Compound	RT	Est. Conc.	Q

Straight-chained Alkane	23.24	1800	J
Straight-chained Alkane	24.45	8900	J
Straight-chained Alkane	25.89	10000	J

APPENDIX C

Support Documentation

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0279

Mitkem Project ID: B0279

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous and nine soil samples that were collected on February 19, 2003, and received at Mitkem on February 20, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of 1,2-dichloroethane-d4 in samples WOD-SS-131RE, WOD-SS-132, WOD-SS-129MS and WOD-SS-129MSD. Matrix interference on surrogate confirmed with re-analysis of sample WOD-SS-132 with similar findings. Surrogate recoveries were within the QC limits in the initial analysis for sample WOD-SS-131

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of chloromethane, vinyl chloride and chloroethane in V6KLCSD and low recovery of 1,2-dibromo-3-chloropropane in V6LLCS. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1 for aqueous samples and on sample WOD-SS-129 for soil samples. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike duplicate for samples WFF10-GW1 and WOD-SS-129. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of phenol-d5 and 2-fluorophenol in method blanks, SBLK2S and SBLK3T, and lab control sample S2SLCS.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of phenol, N-nitroso-di-n-propylamine and isophorone in S2SLCS.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1 for aqueous samples and on sample WOD-SS-129 for soil samples. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate for sample WFF10-GW1 and WOD-SS-129. Replicate RPDs were within the QC limits with the exception of 2-methylphenol and 3,3'-dichlorobenzidine for sample WFF10-GW1 and 4-nitroaniline and 3,3'-dichlorobenzidine in sample EOD-SS-129.

Sample analysis: no other unusual observation was made for the analysis.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in one column for sample MW-53S.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King OF Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA vial HCl	TCL VOC + MTBE 1 liter Amber glass	TCL Semi 1 liter Amber glass	TCL Pest 500ml poly HNO3	TAL metals 5gram Encore sampler	TCL VOC 40z Amber glass widemouth	TCL SVOC PCB 40z Amber glass widemouth	TAL Metals + Hg 40z Amber glass widemouth	TCL Alkalinity 8oz Amber glass widemouth Teflon Sleeve	COMMENTS
TB-021803	2/18/03 1030		X	X			01	2	2									Trip Blank
WFF10-GW1	2/19/03 1355		X	X			02	15	6	3	3	3						Do MS/MSD
MW53S	2/19/03 1010		X	X			03	6	2	1	1	1						
WOD-SS-129	2/19/03 1040		X		X		04	16					9	2	2	2	1	Do MS/MSD
WOD-SS-130	2/19/03 1105		X		X		05	7					3	1	1	1	1	
WOD-SS-131	2/19/03 1116		X		X		06	7					3	1	1	1	1	
WOD-SS-132	2/19/03 1130		X		X		07	7					3	1	1	1	1	
WOD-SS-133	2/19/03 1142		X		X		08	7					3	1	1	1	1	
WOD-SS-137	2/19/03 1217		X		X		09	7					3	1	1	1	1	
14-GW1	2/19/03 1230		X	X			10	5	2	1	1	1						
WOD-SS-136	2/19/03 1234		X		X		11	7					3	1	1	1	1	
WOD-SS-Dup 09	2/19/03 1242		X		X		12	7					3	1	1	1	1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Mayer	2/19/03 1700		2-20-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blanks and Blank water were provided by the Laboratory. The samples were shipped under Federal Express Airbill No 8286 8464 5289

COOLER TEMP: 4C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza 7 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 5 gram Encore sampler	TCL VOC 40z Amber glass widemouth	TCL SVOC 40z Amber glass widemouth PCB	TAL Metals 4oz Amber glass widemouth	TOC 8oz Amber glass widemouth Moisture	Grain Size 500 ml poly HNO3	Dissolved Metals 40 ml VOA vial HCl	TCL VOA 1 Liter Amber glass	TCL SVOC 1 Liter Amber glass	TCL PCB 500 ml poly HNO3	TAL Metals 40 ml VOA vial HCl	TOC 500 ml poly HNO3	Dissolved Metals	COMMENTS
WOD-SS-138	2/19/03 1249		X		X		13	7	3	1	1	1	1									
WFF10-GW1-F	2/19/03 1355		X	X			14	3						3								00 MS/MSD
MW53S-F	2/19/03 1010		X	X			15	1						1								
14-GW1-F	2/19/03 1230		X	X			16	1						1								
GW-Dup 08	2/19/03 1305		X	X			17	5							2	1	1	1				
RB-021903	2/19/03 1545		X	X			18	7							2	1	1	1	2			Rinsate Blank
GW-Dup 08-F	2/19/03 1305		X	X			19	1												1		
14-GW2	2/19/03 1440		X	X			20	5							2	1	1	1				
14-GW2-F	2/19/03 1440		X	X			21	1												1		
	/																					
	/																					
	/																					

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	2/19/03 1700	[signature]	2-20-03 0900
		/		/
		/		/

ADDITIONAL REMARKS:
Laboratory Supplied Blank Water and Trip Blanks
Shipped under Federal Express
Airbill NO 8286 8464 5284

COOLER TEMP: 3°

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-021803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5125

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) WATER Lab Sample ID: B0279-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5129

Level: (low/med) LOW Date Received: 02/19/03

% Moisture: not dec. _____ Date Analyzed: 02/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	6	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	26	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix: (soil/water) SOIL Lab Sample ID: V5B0223A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4053

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 02/23/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

000259

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - Sample No.: V6KLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	60	120	2	40	48-135
Chloromethane	50	60	120*	3	40	60-118
Vinyl Chloride	50	59	118*	5	40	65-113
Bromomethane	50	59	118	7	40	73-122
Chloroethane	50	61	122*	7	40	72-118
Trichlorofluoromethane	50	58	116	7	40	68-129
1,1-Dichloroethene	50	54	108	2	40	67-121
Acetone	50	40	80	12	40	38-161
Carbon Disulfide	50	60	120	7	40	53-137
Methylene Chloride	50	50	100	4	40	59-132
trans-1,2-Dichloroethen	50	54	108	2	40	71-124
Methyl tert-butyl ether	50	45	90	4	40	75-123
1,1-Dichloroethane	50	54	108	2	40	83-116
2-Butanone	50	44	88	9	40	64-139
cis-1,2-Dichloroethene	50	53	106	4	40	83-120
Chloroform	50	56	112	2	40	89-118
1,1,1-Trichloroethane	50	57	114	0	40	81-122
Carbon Tetrachloride	50	55	110	2	40	79-125
1,2-Dichloroethane	50	52	104	7	40	83-123
Benzene	50	57	114	2	40	81-120
Trichloroethene	50	54	108	4	40	77-121
1,2-Dichloropropane	50	56	112	2	40	81-116
Bromodichloromethane	50	53	106	2	40	90-114
cis-1,3-Dichloropropene	50	51	102	0	40	78-119
4-Methyl-2-pentanone	50	44	88	11	40	57-138
Toluene	50	57	114	4	40	81-121
trans-1,3-Dichloroprope	50	50	100	4	40	85-118
1,1,2-Trichloroethane	50	50	100	8	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - Sample No.: V6LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		53	106	73-121
2-Hexanone	50		34	68	53-145
Dibromochloromethane	50		46	92	80-124
1,2-Dibromoethane	50		43	86	80-124
Chlorobenzene	50		53	106	82-118
Ethylbenzene	50		54	108	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		54	108	77-128
Bromoform	50		42	84	77-130
Isopropylbenzene	50		57	114	58-148
1,1,2,2-Tetrachloroetha	50		42	84	76-125
1,3,5-Trimethylbenzene	50		56	112	76-116
1,2,4-Trimethylbenzene	50		55	110	77-117
1,3-Dichlorobenzene	50		53	106	80-116
1,4-Dichlorobenzene	50		53	106	80-114
1,2-Dichlorobenzene	50		52	104	81-116
1,2-Dibromo-3-chloropro	50		33	66*	71-126
1,2,4-Trichlorobenzene	50		42	84	67-114
1,1,2-Trichlo-1,2,2-tri	50		55	110	70-130
Methyl Acetate	50		37	74	70-130
Cyclohexane	50		58	116	70-130
Methylcyclohexane	50		57	114	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5A	95	101	100	92	0
02	V5ALCS	96	101	99	96	0
03	WOD-SS-129	110	126	113	84	0
04	WOD-SS-129MS	114	139*	108	97	1
05	WOD-SS-129MS	113	131*	110	93	1
06	WOD-SS-131	105	110	119	73	0
07	WOD-SS-132	121	143*	124	79	1
08	WOD-SS-133	104	104	125	80	0
09	WOD-SS-137	111	120	126	79	0
10	WOD-SS-136	110	118	127	75	0
11	WOD-SS-DUP09	112	121	124	76	0
12	WOD-SS-138	112	125	122	73	0
13	WOD-SS-130	113	124	119	78	0
14	VBLK5B	96	100	103	88	0
15	V5BLCS	97	100	102	99	0
16	WOD-SS-131RE	111	127*	115	82	1
17	WOD-SS-132RE	114	131*	119	72	1
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

000200

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Lab File ID (Standard): V5E4022 Date Analyzed: 02/21/03

Instrument ID: V5 Time Analyzed: 1151

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	911388	6.25	685065	9.47	336893	12.22
	UPPER LIMIT	1822776	6.75	1370130	9.97	673786	12.72
	LOWER LIMIT	455694	5.75	342533	8.97	168447	11.72
	EPA SAMPLE NO.						
01	VBLK5A	967172	6.25	725353	9.47	308853	12.22
02	V5ALCS	961812	6.25	726897	9.47	360910	12.22
03	WOD-SS-129	686295	6.25	471170	9.47	137685*	12.22
04	WOD-SS-129MS	609438	6.25	447953	9.47	185656	12.22
05	WOD-SS-129MS	640948	6.25	468437	9.47	173615	12.22
06	WOD-SS-131	190412*	6.26	119610*	9.48	27592*	12.22
07	WOD-SS-132	533441	6.25	327053*	9.47	78571*	12.21
08	WOD-SS-133	519959	6.26	318018*	9.48	84070*	12.22
09	WOD-SS-137	714024	6.26	437985	9.48	105803*	12.22
10	WOD-SS-136	711320	6.25	402147	9.47	90111*	12.22
11	WOD-SS-DUP09	693450	6.26	419438	9.48	98690*	12.21
12	WOD-SS-138	713296	6.25	432503	9.47	94788*	12.22
13	WOD-SS-130	695191	6.25	435984	9.47	102982*	12.22
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

#133 -2 IS out
others 1 IS

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Lab File ID (Standard): V5E4051 Date Analyzed: 02/23/03

Instrument ID: V5 Time Analyzed: 1132

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	897861	6.25	710539	9.47	349171	12.21
	UPPER LIMIT	1795722	6.75	1421078	9.97	698342	12.71
	LOWER LIMIT	448931	5.75	355270	8.97	174586	11.71
	EPA SAMPLE NO.						
01	VBLK5B	1041191	6.25	761180	9.47	285784	12.21
02	V5BLCS	900150	6.25	681956	9.48	334366	12.21
03	WOD-SS-131RE	750208	6.25	478237	9.47	139326*	12.22
04	WOD-SS-132RE	737330	6.25	442658	9.48	106959*	12.21
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4036.D
Report Date: 12-Mar-2003 12:08

carryover seen in VOCs SAMPLE WOD-SS-131

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4036.D
Lab Smp Id: B0279-06C Client Smp ID: WOD-SS-131
Inj Date : 21-FEB-2003 18:58
Operator : AN Inst ID: v5.i
Smp Info : TETRA,B0279-06C,WOD-SS-131,V5B0221A,,B0279
Misc Info : 19-FEB-03,,,,,,,4.1
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\v58260H.m
Meth Date : 12-Mar-2003 11:51 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

(Not seen later in Rerun)

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	4.100	Weight of sample (g)
M	67.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/Kg)	
	9 Acetone	43	3.400	3.403	(0.543)	20514	45.2040	170	
	14 Methylene Chloride	84	3.843	3.847	(0.614)	6041	4.12933	15	(a)
$	30 Dibromofluoromethane	113	5.577	5.570	(0.891)	57949	52.4132	190	
$	35 1,2-Dichloroethane-d4	102	5.912	5.905	(0.945)	12289	55.1428	200	
*	38 Fluorobenzene	96	6.256	6.250	(1.000)	190412	50.0000		
$	47 Toluene-d8	98	7.882	7.885	(0.832)	169595	59.6697	220	
*	48 Toluene	91	7.960	7.954	(1.272)	7236	1.57503	782822	6 (a)
≠	54 2-Hexanone	43	8.650	8.633	(0.913)	10552	14.8790	271040	55
*	57 Chlorobenzene-d5	117	9.477	9.471	(1.000)	119610	50.0000		
*	58 Chlorobenzene	112	9.507	9.500	(1.003)	6651	2.59449	511426	10 (a)
*	60 Ethylbenzene	106	9.625	9.628	(1.016)	3822	3.01665	251025	11 (aQ)
*	61 m,p-Xylene	106	9.763	9.756	(1.030)	11776	7.51120	615154	28 (a)
*	62 o-Xylene	106	10.216	10.219	(1.078)	5114	3.30673	302844	12 (a)
*	64 Styrene	104	10.236	10.229	(1.080)	8159	3.10121	461161	11 (a)
*	66 Isopropylbenzene	105	10.649	10.643	(1.124)	12046	3.10371	693059	11 (a)

0.92%
3.9%
1.3%
1.5%
1.9%
1.8%
1.8%
1.7%

% carryover = (area Ratio * 100)

Ratio

* carryover likely

≠ carryover ratio not consistent But Bias possible - use rerun.

raw area in previous MSD run V5E4035

0032.32

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4036.D
Report Date: 12-Mar-2003 12:08

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/Kg)
$ 68 Bromofluorobenzene	95	10.827	10.830	(1.142)	43049	36.7110	140
74 1,3,5-Trimethylbenzene	105	11.349	11.342	(0.929)	12135	7.80185	29(a)
77 1,2,4-Trimethylbenzene	105	11.802	11.795	(0.966)	11615	7.35140	27(a)
80 1,3-Dichlorobenzene	146	12.146	12.140	(0.994)	4968	5.41879	20(a)
* 81 1,4-Dichlorobenzene-d4	152	12.215	12.219	(1.000)	27592	50.0000	
82 1,4-Dichlorobenzene	146	12.245	12.238	(1.002)	4975	5.35769	20(a)
M 63 Xylene (Total)	106				16890	10.8179	40
84 1,2-Dichlorobenzene	146	12.698	12.692	(1.040)	5105	5.87568	22(a)

2.2%
2.1%
1.7%
1.7%
1.8%

% carryover = (area Ratio × 100)

Ratio

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

Raw area in previous MSDrun V5E4035

3/12/03

000133

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4035.D
Report Date: 13-Mar-2003 15:29

Source of carryover V5E4035 MSD

Mitkem Corporation
Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4035.D
Lab Smp Id: B0279-04CMSD Client Smp ID: WOD-SS-129MSD
Inj Date : 21-FEB-2003 18:28
Operator : AN Inst ID: v5.i
Smp Info : TT,B0279-04CMSD,WOD-SS-129MSD,V5B0221A,,B0279
Misc Info : 19-FEB-03,3,,MSD,,,,5.6
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\v58260H.m
Meth Date : 13-Mar-2003 15:29 mtl Quant Type: ISTD
Cal Date : 07-FEB-2003 15:09 Cal File: V5E3678.D ✓
Als bottle: 16 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	5.600	Weight of sample (g) ✓
M	22.000	% Moisture (not decanted) ✓

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/Kg)
1	Dichlorodifluoromethane	85	1.748	1.759	(0.280)	171104	48.1183	55
2	Chloromethane	50	1.955	1.956	(0.313)	289722	50.4016	58
3	Vinyl Chloride	62	2.073	2.084	(0.332)	277304	52.7855	60
4	Bromomethane	94	2.447	2.458	(0.392)	162777	53.8952	62
5	Chloroethane	64	2.565	2.576	(0.411)	142102	53.7770	62
6	Trichlorofluoromethane	101	2.831	2.832	(0.453)	241406	55.8244	64
8	1,1-Dichloroethene	96	3.373	3.364	(0.540)	191469	51.7598	59
111	1,1,2-Trichlo-1,2,2-trifluoro	101	3.383	3.384	(0.541)	164859	53.1590	61
9	Acetone	43	3.403	3.403	(0.544)	110892	72.5935	83
11	Carbon Disulfide	76	3.590	3.591	(0.574)	553614	53.7951	62
112	Methyl Acetate	43	3.737	3.738	(0.598)	298536	75.8245	87(R)
14	Methylene Chloride	84	3.856	3.847	(0.617)	283331	57.5356	66
16	trans-1,2-Dichloroethene	96	4.122	4.122	(0.660)	202798	52.9040	60
17	Methyl tert-butyl ether	73	4.132	4.132	(0.661)	786167	72.4991	83(R)
18	1,1-Dichloroethane	63	4.535	4.536	(0.726)	417960	55.1882	63

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030221.B\V5E4035.D
Report Date: 13-Mar-2003 15:29

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
	23 cis-1,2-Dichloroethene	96	5.107	5.107	(0.817)	219323	54.1988	62
	22 2-Butanone	43	5.116	5.107	(0.819)	193807	87.8172	100(R)
	28 Chloroform	83	5.422	5.413	(0.868)	364464	54.5987	62
$	30 Dibromofluoromethane	113	5.579	5.570	(0.893)	209936	56.4097	64
	31 1,1,1-Trichloroethane	97	5.609	5.610	(0.898)	231412	51.2053	59
	113 Cyclohexane	56	5.678	5.679	(0.909)	328408	51.6379	59
	33 Carbon Tetrachloride	117	5.786	5.787	(0.926)	223374	51.5571	59
$	35 1,2-Dichloroethane-d4	102	5.914	5.905	(0.946)	49058	65.3964	75(R)
	37 Benzene	78	5.983	5.984	(0.957)	849940	53.4405	61
	36 1,2-Dichloroethane	62	5.983	5.984	(0.957)	300350	60.3261	69
*	38 Fluorobenzene	96	6.249	6.250	(1.000)	640948	50.0000	
	39 Trichloroethene	130	6.623	6.624	(1.060)	207873	50.8683	58
	114 Methylcyclohexane	83	6.840	6.831	(1.095)	276674	44.2014	50
	40 1,2-Dichloropropane	63	6.850	6.841	(1.096)	244525	56.7440	65
	43 Bromodichloromethane	83	7.126	7.117	(1.140)	275185	54.8405	63
	45 cis-1,3-Dichloropropene	75	7.589	7.590	(1.214)	358263	53.8657	62
	46 4-Methyl-2-pentanone	43	7.736	7.737	(1.238)	390475	90.7772	100(R)
$	47 Toluene-d8	98	7.884	7.885	(0.833)	612851	55.0569	63
	48 Toluene	91	7.953	7.954	(1.273)	782822	50.6203	58
	49 trans-1,3-Dichloropropene	75	8.180	8.171	(1.309)	325876	54.5702	62
	51 1,1,2-Trichloroethane	97	8.377	8.377	(1.340)	190913	57.0828	65
	53 Tetrachloroethene	164	8.564	8.555	(0.904)	144010	47.6471	54
	54 2-Hexanone	43	8.643	8.633	(0.913)	271006	97.5737	110(R)
	55 Dibromochloromethane	129	8.820	8.811	(0.931)	224681	58.8379	67(R)
	56 1,2-Dibromoethane	107	8.948	8.949	(0.945)	220597	63.4872	73(R)
*	57 Chlorobenzene-d5	117	9.470	9.471	(1.000)	468437	50.0000	
	58 Chlorobenzene	112	9.509	9.500	(1.004)	511436	50.9416	58
	60 Ethylbenzene	106	9.627	9.628	(1.017)	251025	50.5903	58
	61 m,p-Xylene	106	9.765	9.756	(1.031)	615154	100.187	110
	62 o-Xylene	106	10.218	10.219	(1.079)	302849	50.0012	57
	64 Styrene	104	10.228	10.229	(1.080)	461161	44.7572	51
	65 Bromoform	173	10.445	10.446	(1.103)	149523	56.9694	65
	66 Isopropylbenzene	105	10.652	10.643	(1.125)	643059	45.5958	52
$	68 Bromofluorobenzene	95	10.829	10.830	(1.144)	213281	46.4410	53
	69 1,1,2,2-Tetrachloroethane	83	10.987	10.988	(0.899)	297887	81.4565	93(R)
	74 1,3,5-Trimethylbenzene	105	11.351	11.342	(0.929)	548533	56.0475	64
	77 1,2,4-Trimethylbenzene	105	11.794	11.795	(0.965)	561174	56.4475	65
	80 1,3-Dichlorobenzene	146	12.139	12.140	(0.994)	296420	51.3835	59
*	81 1,4-Dichlorobenzene-d4	152	12.218	12.219	(1.000)	173615	50.0000	
	82 1,4-Dichlorobenzene	146	12.247	12.238	(1.002)	298202	51.0377	58
M	63 Xylene (Total)	106				918003	150.188	170
	84 1,2-Dichlorobenzene	146	12.701	12.692	(1.040)	284077	51.9630	59
	86 1,2-Dibromo-3-chloropropane	75	13.636	13.637	(1.116)	41111	75.2082	86(R)
	87 1,2,4-Trichlorobenzene	180	14.680	14.671	(1.202)	89894	29.7974	34

KC

SB 3/13/03

000421

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Lab File ID (Standard): S2D2583 Date Analyzed: 03/14/03

Instrument ID: S2 Time Analyzed: 1607

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	902736	16.07	883351	21.44	609392	24.11
	UPPER LIMIT	1805472	16.57	1766702	21.94	1218784	24.61
	LOWER LIMIT	451368	15.57	441676	20.94	304696	23.61
	EPA SAMPLE NO.						
01	WOD-SS-129	701211	16.07	667429	21.42	433155	24.10
02	WOD-SS-129MS	682264	16.08	635399	21.43	417526	24.10
03	WOD-SS-129MS	724620	16.07	669948	21.43	428083	24.11
04	WOD-SS-131	721287	16.07	630308	21.43	344827	24.11
05	WOD-SS-130	770445	16.08	686306	21.43	363711	24.11
06	WOD-SS-138	824450	16.07	717256	21.43	370493	24.11
07	WOD-SS-137	751405	16.08	608526	21.43	283397*	24.11
08	WOD-SS-133	749913	16.08	622452	21.43	285202*	24.11
09	WOD-SS-132	794242	16.07	647887	21.44	277648*	24.12
10	WOD-SS-DUP09	700366	16.07	590430	21.43	245863*	24.12
11							
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22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

000298

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	59	0.0	62	105	58-131
Chloromethane	59	0.0	66	112	63-120
Vinyl Chloride	59	0.0	70	119	61-134
Bromomethane	59	0.0	69	117	10-215
Chloroethane	59	0.0	70	119	55-146
Trichlorofluoromethane	59	0.0	70	119	63-126
1,1-Dichloroethene	59	0.0	65	110	67-127
Acetone	59	30	92	105	0-154
Carbon Disulfide	59	0.0	68	115	63-126
Methylene Chloride	59	4	72	115	62-128
trans-1,2-Dichloroethen	59	0.0	67	114	76-120
Methyl tert-butyl ether	59	0.0	95	161*	52-130
1,1-Dichloroethane	59	0.0	69	117	74-118
2-Butanone	59	0.0	120	203*	14-154
cis-1,2-Dichloroethene	59	0.0	68	115	83-115
Chloroform	59	0.0	69	117	77-120
1,1,1-Trichloroethane	59	0.0	62	105	72-126
Carbon Tetrachloride	59	0.0	63	107	69-135
1,2-Dichloroethane	59	0.0	77	130*	65-126
Benzene	59	0.0	67	114	78-121
Trichloroethene	59	0.0	63	107	75-125
1,2-Dichloropropane	59	0.0	71	120*	78-117
Bromodichloromethane	59	0.0	69	117	75-118
cis-1,3-Dichloropropene	59	0.0	68	115	78-120
4-Methyl-2-pentanone	59	0.0	120	203*	45-141
Toluene	59	0.0	62	105	80-126
trans-1,3-Dichloroprope	59	0.0	68	115	73-123
1,1,2-Trichloroethane	59	0.0	74	125	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

WOD210

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	59	0.0	58	98	65-134
2-Hexanone	59	0.0	130	220*	37-136
Dibromochloromethane	59	0.0	75	127*	76-115
1,2-Dibromoethane	59	0.0	81	137*	72-117
Chlorobenzene	59	0.0	62	105	78-117
Ethylbenzene	59	0.0	63	107	79-129
Xylene (Total)	180	0.0	180	100	83-125
Styrene	59	0.0	58	98	83-122
Bromoform	59	0.0	75	127*	67-126
Isopropylbenzene	59	0.0	57	97	80-135
1,1,2,2-Tetrachloroetha	59	0.0	99	168*	70-117
1,3,5-Trimethylbenzene	59	0.0	64	108	72-133
1,2,4-Trimethylbenzene	59	0.0	65	110	73-126
1,3-Dichlorobenzene	59	0.0	61	103	75-115
1,4-Dichlorobenzene	59	0.0	62	105	72-110
1,2-Dichlorobenzene	59	0.0	62	105	78-113
1,2-Dibromo-3-chloropro	59	0.0	98	166*	52-128
1,2,4-Trichlorobenzene	59	0.0	38	64	49-126
1,1,2-Trichlo-1,2,2-tri	59	0.0	66	112	70-130
Methyl Acetate	59	6	97	154*	70-130
Cyclohexane	59	0.0	64	108	70-130
Methylcyclohexane	59	0.0	56	95	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	57	55	96	9	40	58-131
Chloromethane	57	58	102	9	40	63-120
Vinyl Chloride	57	60	105	12	40	61-134
Bromomethane	57	62	109	7	40	10-215
Chloroethane	57	62	109	9	40	55-146
Trichlorofluoromethane	57	64	112	6	40	63-126
1,1-Dichloroethene	57	59	104	6	40	67-127
Acetone	57	83	93	12	40	0-154
Carbon Disulfide	57	62	109	5	40	63-126
Methylene Chloride	57	66	109	5	40	62-128
trans-1,2-Dichloroethen	57	60	105	8	40	76-120
Methyl tert-butyl ether	57	83	146*	10	40	52-130
1,1-Dichloroethane	57	63	110	6	40	74-118
2-Butanone	57	100	175*	15	40	14-154
cis-1,2-Dichloroethene	57	62	109	5	40	83-115
Chloroform	57	62	109	7	40	77-120
1,1,1-Trichloroethane	57	59	104	1	40	72-126
Carbon Tetrachloride	57	59	104	3	40	69-135
1,2-Dichloroethane	57	69	121	7	40	65-126
Benzene	57	61	107	6	40	78-121
Trichloroethene	57	58	102	5	40	75-125
1,2-Dichloropropane	57	65	114	5	40	78-117
Bromodichloromethane	57	63	110	6	40	75-118
cis-1,3-Dichloropropene	57	62	109	5	40	78-120
4-Methyl-2-pentanone	57	100	175*	15	40	45-141
Toluene	57	58	102	3	40	80-126
trans-1,3-Dichloroprope	57	62	109	5	40	73-123
1,1,2-Trichloroethane	57	65	114	9	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000412

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	57	54	95	3	40	65-134
2-Hexanone	57	110	193*	13	40	37-136
Dibromochloromethane	57	67	118*	7	40	76-115
1,2-Dibromoethane	57	73	128*	7	40	72-117
Chlorobenzene	57	58	102	3	40	78-117
Ethylbenzene	57	58	102	5	40	79-129
Xylene (Total)	170	170	100	0	40	83-125
Styrene	57	51	89	10	40	83-122
Bromoform	57	65	114	11	40	67-126
Isopropylbenzene	57	52	91	6	40	80-135
1,1,2,2-Tetrachloroetha	57	93	163*	3	40	70-117
1,3,5-Trimethylbenzene	57	64	112	4	40	72-133
1,2,4-Trimethylbenzene	57	65	114	4	40	73-126
1,3-Dichlorobenzene	57	59	104	1	40	75-115
1,4-Dichlorobenzene	57	58	102	3	40	72-110
1,2-Dichlorobenzene	57	59	104	1	40	78-113
1,2-Dibromo-3-chloropro	57	86	151*	9	40	52-128
1,2,4-Trichlorobenzene	57	34	60	6	40	49-126
1,1,2-Trichlo-1,2,2-tri	57	61	107	4	40	70-130
Methyl Acetate	57	87	142*	8	40	70-130
Cyclohexane	57	59	104	4	40	70-130
Methylcyclohexane	57	50	88	8	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 21 out of 100 outside limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	1000	0.0	860	86	45-109
bis(2-Chloroethyl)Ether	1000	0.0	730	73	43-104
2-Chlorophenol	1000	0.0	770	77	43-107
2-Methylphenol	1000	0.0	750	75	45-108
2,2'-oxybis(1-Chloropro	1000	0.0	740	74	41-105
4-Methylphenol	1000	0.0	800	80	48-109
N-Nitroso-di-n-prop.(1)	1000	0.0	850	85	44-111
Hexachloroethane	1000	0.0	670	67	40-102
Nitrobenzene	1000	0.0	760	76	44-108
Isophorone	1000	0.0	920	92	42-113
2-Nitrophenol	1000	0.0	760	76	42-111
2,4-Dimethylphenol	1000	0.0	930	93	37-107
2,4-Dichlorophenol	1000	0.0	750	75	49-110
Naphthalene	1000	0.0	750	75	44-112
4-Chloroaniline	1000	0.0	260	26	4-102
bis(2-Chloroethoxy)meth	1000	0.0	780	78	46-108
Hexachlorobutadiene	1000	0.0	730	73	41-108
4-Chloro-3-Methylphenol	1000	0.0	750	75	56-117
2-Methylnaphthalene	1000	0.0	610	61	46-110
Hexachlorocyclopentadie	1000	0.0	250	25	10-118
2,4,6-Trichlorophenol	1000	0.0	810	81	53-115
2,4,5-Trichlorophenol	1000	0.0	790	79	59-113
2-Chloronaphthalene	1000	0.0	810	81	52-112
2-Nitroaniline	1000	0.0	600	60*	63-117
Dimethylphthalate	1000	0.0	770	77	62-117
Acenaphthylene	1000	0.0	790	79	58-112
2,6-Dinitrotoluene	1000	0.0	810	81	60-118
3-Nitroaniline	1000	0.0	240	24*	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000230

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - EPA Sample No.: WOD-SS-129 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	1000	900	90	4	40	45-109
bis(2-Chloroethyl)Ether	1000	790	79	8	40	43-104
2-Chlorophenol	1000	820	82	6	40	43-107
2-Methylphenol	1000	840	84	11	40	45-108
2,2'-oxybis(1-Chloropro	1000	810	81	9	40	41-105
4-Methylphenol	1000	860	86	7	40	48-109
N-Nitroso-di-n-prop.(1)	1000	930	93	9	40	44-111
Hexachloroethane	1000	750	75	11	40	40-102
Nitrobenzene	1000	810	81	6	40	44-108
Isophorone	1000	970	97	5	40	42-113
2-Nitrophenol	1000	810	81	6	40	42-111
2,4-Dimethylphenol	1000	990	99	6	40	37-107
2,4-Dichlorophenol	1000	790	79	5	40	49-110
Naphthalene	1000	800	80	6	40	44-112
4-Chloroaniline	1000	420	42	47*	40	4-102
bis(2-Chloroethoxy)meth	1000	830	83	6	40	46-108
Hexachlorobutadiene	1000	780	78	7	40	41-108
4-Chloro-3-Methylphenol	1000	800	80	6	40	56-117
2-Methylnaphthalene	1000	630	63	3	40	46-110
Hexachlorocyclopentadie	1000	270	27	8	40	10-118
2,4,6-Trichlorophenol	1000	860	86	6	40	53-115
2,4,5-Trichlorophenol	1000	840	84	6	40	59-113
2-Chloronaphthalene	1000	850	85	5	40	52-112
2-Nitroaniline	1000	620	62*	3	40	63-117
Dimethylphthalate	1000	820	82	6	40	62-117
Acenaphthylene	1000	830	83	5	40	58-112
2,6-Dinitrotoluene	1000	830	83	2	40	60-118
3-Nitroaniline	1000	320	32	28	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000233

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix Spike - Sample No.: S2SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		980	118*	45-109
bis(2-Chloroethyl)Ether	830		810	98	43-104
2-Chlorophenol	830		830	100	43-107
2-Methylphenol	830		830	100	45-108
2,2'-oxybis(1-Chloropro	830		870	105	41-105
4-Methylphenol	830		880	106	48-109
N-Nitroso-di-n-prop.(1)	830		930	112*	44-111
Hexachloroethane	830		770	93	40-102
Nitrobenzene	830		810	98	44-108
Isophorone	830		1000	120*	42-113
2-Nitrophenol	830		780	94	42-111
2,4-Dimethylphenol	830		480	58	37-107
2,4-Dichlorophenol	830		780	94	49-110
Naphthalene	830		810	98	44-112
4-Chloroaniline	830		700	84	4-102
bis(2-Chloroethoxy)meth	830		860	104	46-108
Hexachlorobutadiene	830		770	93	41-108
4-Chloro-3-Methylphenol	830		830	100	56-117
2-Methylnaphthalene	830		650	78	46-110
Hexachlorocyclopentadie	830		360	43	10-118
2,4,6-Trichlorophenol	830		780	94	53-115
2,4,5-Trichlorophenol	830		750	90	59-113
2-Chloronaphthalene	830		850	102	52-112
2-Nitroaniline	830		650	78	63-117
Dimethylphthalate	830		810	98	62-117
Acenaphthylene	830		780	94	58-112
2,6-Dinitrotoluene	830		850	102	60-118
3-Nitroaniline	830		480	58	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000236

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm) Affects positive for acetone in RB-021903

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD	
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3	
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*	
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7	
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8	
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3	
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8	
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0	
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8	J
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0	
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4	
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8	
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8	
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*	
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4	
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8	
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2	
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8	
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3	
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1	
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1	
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8	
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6	
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4	
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1	
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2	
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2	
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5	
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2	
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4	
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4	
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2	
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4	
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*	
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3	
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4	
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4	
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

⊠ Affects all water samples

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	%RSD	
Phenol	* 1.390					1.399	3.2*	
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*	
2-Chlorophenol	* 1.371					1.295	3.5*	
2-Methylphenol	* 1.198					1.130	3.8*	
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*	
4-Methylphenol	* 1.129					1.108	1.6*	
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*	
Hexachloroethane	* 0.627					0.609	2.4*	
Nitrobenzene	* 0.406					0.416	4.6*	
Isophorone	* 0.535					0.541	2.3*	
2-Nitrophenol	* 0.219					0.207	5.1*	
2,4-Dimethylphenol	* 0.383					0.349	7.8*	
2,4-Dichlorophenol	* 0.356					0.321	8.1*	
Naphthalene	* 1.196					1.127	4.2*	
4-Chloroaniline	* 0.251					0.255	31.9*	No Fits
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*	
Hexachlorobutadiene	* 0.220					0.214	4.2*	
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*	
2-Methylnaphthalene	* 1.032					0.959	7.5*	
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*	
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*	
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*	
2-Chloronaphthalene	* 1.346					1.224	7.1*	
2-Nitroaniline	* 0.518					0.527	2.8*	
Dimethylphthalate	* 1.415					1.385	1.7*	
Acenaphthylene	* 1.879					1.819	2.1*	
2,6-Dinitrotoluene	* 0.318					0.308	2.6*	
3-Nitroaniline	* 0.274					0.181	52.2*	
Acenaphthene	* 1.311					1.218	5.3*	
2,4-Dinitrophenol	* 0.201					0.167	17.9*	
4-Nitrophenol	* 0.265					0.267	6.2*	
Dibenzofuran	* 2.250					2.192	5.6*	
2,4-Dinitrotoluene	* 0.456					0.427	7.5*	
Diethylphthalate	* 1.413					1.367	3.2*	
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*	
Fluorene	* 1.325					1.349	7.0*	
4-Nitroaniline	* 0.111					0.150	18.7*	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: S2 Calibration Date(s): 03/13/03 03/14/03

Calibration Time(s): 1644 0057

* Affects all Soil samples

LAB FILE ID: RRF160=S2D2557

COMPOUND	RRF160					$\overline{RRF}$	% RSD	
Phenol	* 0.959					1.511	21.7*	
bis(2-Chloroethyl)Ether	* 1.230					1.361	9.7*	
2-Chlorophenol	* 1.227					1.329	7.7*	
2-Methylphenol	* 1.060					1.161	8.7*	
2,2'-oxybis(1-Chloropropane)	* 1.825					2.140	12.9*	
4-Methylphenol	* 1.004					1.157	12.0*	
N-Nitroso-di-n-propylamine	* 0.680					0.833	15.7*	
Hexachloroethane	* 0.520					0.572	8.6*	
Nitrobenzene	* 0.405					0.423	5.4*	
Isophorone	* 0.620					0.650	5.5*	
2-Nitrophenol	* 0.218					0.222	2.7*	
2,4-Dimethylphenol	* 0.294					0.297	9.4*	
2,4-Dichlorophenol	* 0.282					0.289	3.3*	
Naphthalene	* 0.992					1.057	7.8*	
4-Chloroaniline	* 0.168					0.302	62.7*	UJ
bis(2-Chloroethoxy)methane	* 0.438					0.462	6.2*	
Hexachlorobutadiene	* 0.153					0.159	5.9*	
4-Chloro-3-Methylphenol	* 0.308					0.316	3.7*	
2-Methylnaphthalene	* 0.770					0.842	9.3*	
Hexachlorocyclopentadiene	* 0.264					0.211	30.9*	no hits
2,4,6-Trichlorophenol	* 0.359					0.356	2.5*	
2,4,5-Trichlorophenol	* 0.403					0.397	2.4*	
2-Chloronaphthalene	* 1.069					1.138	5.8*	
2-Nitroaniline	* 0.587					0.599	2.6*	
Dimethylphthalate	* 1.398					1.421	2.8*	
Acenaphthylene	* 1.814					1.923	5.2*	
2,6-Dinitrotoluene	* 0.353					0.350	1.2*	
3-Nitroaniline	* 0.515					0.523	3.5*	
Acenaphthene	* 1.112					1.163	4.1*	
2,4-Dinitrophenol	* 0.163					0.124	37.0*	No Hits
4-Nitrophenol	* 0.124					0.113	10.6*	
Dibenzofuran	* 1.898					2.039	7.0*	
2,4-Dinitrotoluene	* 0.464					0.456	4.2*	
Diethylphthalate	* 1.380					1.436	4.1*	
4-Chlorophenyl-phenylether	* 0.572					0.601	5.4*	
Fluorene	* 1.223					1.270	5.1*	
4-Nitroaniline	* 0.496					0.515	5.0*	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 RT Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

All effects WOD-SS-136 only

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D	
Phenol	1.399	1.489	0.050	6.4	20.0	
bis(2-Chloroethyl)Ether	1.112	1.241	0.050	11.6	100	
2-Chlorophenol	1.295	1.314	0.050	1.5	100	
2-Methylphenol	1.130	1.136	0.050	0.5	100	
2,2'-oxybis(1-Chloropropane)	1.228	1.600	0.050	30.3	100	No hit
4-Methylphenol	1.108	1.196	0.050	7.9	100	
N-Nitroso-di-n-propylamine	0.820	0.880	0.050	7.3	100	
Hexachloroethane	0.609	0.575	0.050	-5.6	100	
Nitrobenzene	0.416	0.415	0.050	-0.2	100	
Isophorone	0.541	0.560	0.050	3.5	100	
2-Nitrophenol	0.207	0.203	0.050	-1.9	20.0	
2,4-Dimethylphenol	0.349	0.287	0.050	-17.8	100	
2,4-Dichlorophenol	0.321	0.300	0.050	-6.5	20.0	
Naphthalene	1.127	1.076	0.050	-4.5	100	
4-Chloroaniline	0.255	0.141	0.050	-44.7	100	No hit
bis(2-Chloroethoxy)methane	0.396	0.404	0.050	2.0	100	
Hexachlorobutadiene	0.214	0.176	0.050	-17.8	20.0	
4-Chloro-3-Methylphenol	0.331	0.343	0.050	3.6	20.0	
2-Methylnaphthalene	0.959	0.924	0.050	-3.6	100	
Hexachlorocyclopentadiene	0.323	0.161	0.050	-50.2	100	UJ
2,4,6-Trichlorophenol	0.387	0.360	0.050	-7.0	100	
2,4,5-Trichlorophenol	0.412	0.376	0.050	-8.7	100	
2-Chloronaphthalene	1.224	1.127	0.050	-7.9	100	
2-Nitroaniline	0.527	0.550	0.050	4.4	100	
Dimethylphthalate	1.385	1.392	0.050	0.5	100	
Acenaphthylene	1.819	1.844	0.050	1.4	100	
2,6-Dinitrotoluene	0.308	0.308	0.050	0.0	100	
3-Nitroaniline	0.181	0.293	0.050	61.9	100	UJ
Acenaphthene	1.218	1.188	0.050	-2.5	20.0	
2,4-Dinitrophenol	0.167	0.136	0.050	-18.6	100	
4-Nitrophenol	0.267	0.237	0.050	-11.2	100	
Dibenzofuran	2.192	2.056	0.050	-6.2	100	
2,4-Dinitrotoluene	0.427	0.415	0.050	-2.8	100	
Diethylphthalate	1.367	1.418	0.050	3.7	100	
4-Chlorophenyl-phenylether	0.656	0.602	0.050	-8.2	100	
Fluorene	1.349	1.295	0.050	-4.0	100	
4-Nitroaniline	0.150	0.236	0.050	57.3	100	UJ

All other compounds must meet a minimum RRF of 0.010.

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: E2 Calibration Date: 03/04/03 Time: 0032

Lab File ID: E2D4808F Init. Calib. Date(s): 03/01/03 03/01/03

Init. Calib. Times: 1441 1653

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

Affects WOO-55-136

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	7849.520	8965.000	0.01	14.2	15.0	
(2)	13277.320	14944.000	0.01	12.6	15.0	
(3)	18156.120	21535.000	0.01	18.6	15.0	<-
Aroclor-1260	21538.960	27086.000	0.01	25.8	15.0	<- J
(2)	25450.240	32507.000	0.01	27.7	15.0	<-
(3)	13397.520	17349.000	0.01	29.5	15.0	<-
Tetrachloro-m-xylene	369132.00	428400.00	0.01	16.0	15.0	<-
Decachlorobiphenyl	333734.00	424650.00	0.01	27.2	15.0	<-

001191

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Instrument ID: E2 Calibration Date: 03/04/03 Time: 0032

Lab File ID: E2D4808R Init. Calib. Date(s): 03/01/03 03/01/03

Init. Calib. Times: 1441 1653

GC Column: RTXCLPPEST ID: 0.53 (mm)

Affects WDD-SS-136

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	6018.680	5186.000	0.01	13.8	15.0	
(2)	9084.800	7741.000	0.01	14.8	15.0	
(3)	16515.600	14040.000	0.01	15.0	15.0	
Aroclor-1260	13700.680	11488.000	0.01	16.2	15.0	<- J
(2)	21644.920	18535.000	0.01	14.4	15.0	
(3)	13855.640	11827.000	0.01	14.6	15.0	
Tetrachloro-m-xylene	262138.00	215050.00	0.01	18.0	15.0	<-
Decachlorobiphenyl	238880.00	197850.00	0.01	17.2	15.0	<-

001192

TETRA TECH NUS

PHIL- 16996

TO: G. GLENN **DATE:** APRIL 1, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0279

SAMPLES: **9/Soil/**

WOD-SS-129	WOD-SS-DUP09
WOD-SS-130	WOD-SS-136
WOD-SS-131	WOD-SS-137
WOD-SS-132	WOD-SS-138
WOD-SS-133	

1/Aqueous/

RB-021903

OVERVIEW

The sample set for the Waste Oil Dump Remedial Investigation – NASA Wallops Island, Virginia, SDG B0279 consists of nine soil environmental samples (designated WOD-SS-) and one rinsate blank (designated RB-). All samples were analyzed for TAL metals. One field duplicate pair (samples WOD-SS-133/WOD-SS-DUP09) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 19, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B, 7470A, and 7471A.

SUMMARY

All analytes with the exception of antimony, cadmium, and sodium were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control blank results, field duplicate results, matrix spikes (MS/MSD), laboratory control samples (LCS/LCSD), laboratory duplicates, interference check samples, and detection limits.

MAJOR PROBLEMS

- Cobalt, potassium, silver, sodium, thallium, vanadium, and zinc were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. Positive results for sodium

at concentrations less than or approximately equal to the predicted interference value relative to the sample iron concentration (based on comparing the ratio of analyte concentration to iron concentration in samples versus ICS solution A) are considered false positives and were considered rejected, but qualification was superceded by the qualifier (B) for blank contamination. For cobalt, silver, and sodium, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K).

- Antimony, arsenic, cadmium, chromium, lead, manganese, nickel, and selenium exhibited negative concentrations with absolute value greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For antimony and cadmium, when the instrument detection limit (IDL) was less than the estimated interference magnitude for a sample, the detection limit was qualified rejected, (UR). A lesser effect of interference occurred for non-detected antimony and selenium results in cases where the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value. Affected non-detected results were qualified as biased low (UL) in the latter case. For positive selenium results, when the sample concentration was greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased low (L).

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the soil laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Aluminum	0.94 mg/kg	4.7 mg/kg
Antimony	0.285 mg/kg	1.42 mg/kg
Barium	0.343 mg/kg	1.72 mg/kg
Iron	2.91 mg/kg	14.55 mg/kg
Magnesium	4.22 mg/kg	21.1 mg/kg
Manganese	0.07 mg/kg	0.35 mg/kg
Nickel	0.08 mg/kg	0.4 mg/kg
Potassium	27.8 mg/kg	139 mg/kg
Sodium	39.4 mg/kg	197 mg/kg
Thallium	0.175 mg/kg	0.875 mg/kg

Samples affected: The soil action levels apply to all soil environmental samples. No aqueous action levels were calculated because there were no associated aqueous environmental samples, only an aqueous rinsate blank. Field QC blanks are not appropriate to qualify from laboratory blanks during data validation. However, for quality assurance monitoring, it should be noted that concentrations of all detected analytes in the rinsate blank (magnesium and manganese) were very similar to levels found in the associated aqueous laboratory blanks.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for antimony, potassium, and sodium in soil samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for aluminum, barium, iron, magnesium, manganese, nickel, and thallium because all soil concentrations exceeded the associated blank action levels.

- The solid sample matrix spike (MS) recoveries for antimony was less than the lower quality control (QC) limit of 75 percent. Non-detected antimony results for some samples were qualified biased low (UL) due to low matrix spike recoveries. However, data qualification for most samples was based upon more significant issues (blank qualification or rejection due to ICS interference) as noted above.
- The Relative Percent Difference (RPD) for calcium, copper, and sodium exceeded the 50 percent control limit in field duplicate samples WOD-SS-133 and WOD-SS-DUP09. Associated results were qualified estimated (J) for this reason.

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as rejected (UR/R), biased high (K), or biased low (UL/L). Several contaminants were detected in the laboratory blanks. Associated soil sample results were qualified (B) to indicate artifacts of blank contamination.

Other Factors Affecting Data Quality: Antimony exhibited a low MS recovery. Calcium, copper, and sodium exhibited field duplicate imprecision. Magnesium and manganese were detected in the field QC blank.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

DATA SUMMARY OF INORGANIC RESULTS
SDG B0279 - WOD SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-129			WOD-SS-130			WOD-SS-131			WOD-SS-132			WOD-SS-133		
Laboratory ID:	B0279-04A			B0279-05A			B0279-06A			B0279-07A			B0279-08A		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:													WOD-SS-DUP09		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	2310			917			5900			2020			8590		
Antimony	0.18	UR	K	0.16	UL	DK	0.41	B	A	0.25	UL	DK	0.27	UR	K
Arsenic	1.8			0.82			3.6			1.4			4.1		
Barium	6.4			3.3			9			3.6			7.7		
Beryllium	0.056			0.029			0.17			0.061			0.25		
Cadmium	0.043	UR	K	0.036	UR	K	0.093	UR	K	0.059	UR	K	0.064	UR	K
Calcium	111			127			338			684			686	J	G
Chromium	2.9			1.5			6.7			2.6			8.5		
Cobalt	0.4	K	K	0.14	K	K	0.94			0.49			1.6		
Copper	1.2			0.76			3.5			2.2			5.5	J	G
Iron	2390			1500			3150			2030			6820		
Lead	5.1			2.4			23.2			9.4			18.3		
Magnesium	253			156			718			815			1190		
Manganese	12.4			2.8			13.1			20.9			32.1		
Mercury	0.021	U		0.021	U		0.045	U		0.029			0.05		
Nickel	1.3			0.62			3.2			1.6			4.5		
Potassium	178			99.8	B	A	442			281			607		
Selenium	0.55	UL	K	0.47	UL	K	1.2	UL	K	0.76	UL	K	0.82	UL	K
Silver	0.13	K	K	0.1	U		0.27	U		0.65			0.24	K	K
Sodium	88.9	B	A	149	B	A	484	B	A	583			1070	J	G
Thallium	0.18	U		0.16	U		0.4	U		0.25	U		0.27	U	
Vanadium	6.1			3.1			14.3			7.1			21.1		
Zinc	3.1			1.2			6.6			3.9			10.9		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0279 - WOD SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-136			WOD-SS-137			WOD-SS-138			WOD-SS-DUP09			RB-021903		
Laboratory ID:	B0279-11A			B0279-09A			B0279-13A			B0279-12A			B0279-18C		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/19/03		
Duplicate:										WOD-SS-133					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			ug/L		
Aluminum	16300			19500			5180			8210			17	U	
Antimony	0.54	UR	K	0.42	UR	K	0.25	UR	K	0.21	UR	K	3	U	
Arsenic	5.6			8.9			4			3.9			3	U	
Barium	49.4			50.2			8.4			6.7			4	U	
Beryllium	0.45			0.49			0.11			0.21			0.5	U	
Cadmium	0.12	UR	K	0.098	UR	K	0.058	UR	K	0.049	UR	K	0.7	U	
Calcium	3880			926			145			410	J	G	240	U	
Chromium	19.8			20.1			6.1			8.2			0.6	U	
Cobalt	3.2			3			0.81	K	K	1.2			0.9	U	
Copper	10.7			11.7			2.5			3	J	G	4	U	
Iron	10300			14200			7040			5950			26	U	
Lead	51.9			71			14.3			12.4			4	U	
Magnesium	2840			1550			293			899			30.6		
Manganese	45.3			38.6			11.2			21.7			0.94		
Mercury	0.16			0.13			0.044			0.037			0.13	U	
Nickel	12.2			10.2			2.5			3.8			0.8	U	
Potassium	811			747			263			457			78	U	
Selenium	1.6	UL	K	1.3	UL	K	0.78	L	K	0.63	UL	K	9	U	
Silver	2.3			1.1	K	K	0.19	K	K	0.14	K	K	2	U	
Sodium	426	B	A	94.4	B	A	13.7	B	A	634	J	G	83	U	
Thallium	0.54	U		0.42	U		0.25	U		0.21	U		3	U	
Vanadium	48.4			42.8			14.8			17.8			0.7	U	
Zinc	34.5			28.5			6.4			8.2			7	U	

DATA SUMMARY OF INORGANIC RESULTS
SDG B0279 - WOD SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\BACKGROUND STUDY\WATER VALIDATION\M_B0279.DBF data retrieved on: 03/31/03

APPENDIX B

Results as Reported by the Laboratory

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-129

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-04A

Level (low/med): MED Date Received: 02/19/03

% Solids: 78.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2310			P
7440-36-0	Antimony	0.18	U	N	P
7440-38-2	Arsenic	1.8			P
7440-39-3	Barium	6.4	B		P
7440-41-7	Beryllium	0.056	B		P
7440-43-9	Cadmium	0.043	U		P
7440-70-2	Calcium	111			P
7440-47-3	Chromium	2.9			P
7440-48-4	Cobalt	0.40	B		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	2390			P
7439-92-1	Lead	5.1			P
7439-95-4	Magnesium	253			P
7439-96-5	Manganese	12.4			P
7439-97-6	Mercury	0.021	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	178			P
7782-49-2	Selenium	0.55	U		P
7440-22-4	Silver	0.13	B	* PM 4/23/03	P
7440-23-5	Sodium	88.9			P
7440-28-0	Thallium	0.18	U		P
7440-62-2	Vanadium	6.1			P
7440-66-6	Zinc	3.1			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-130

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-05A

Level (low/med): MED Date Received: 02/19/03

% Solids: 80.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	917			P
7440-36-0	Antimony	0.16	U	N	P
7440-38-2	Arsenic	0.82	B		P
7440-39-3	Barium	3.3	B		P
7440-41-7	Beryllium	0.029	B		P
7440-43-9	Cadmium	0.036	U		P
7440-70-2	Calcium	127			P
7440-47-3	Chromium	1.5			P
7440-48-4	Cobalt	0.14	B		P
7440-50-8	Copper	0.76	B		P
7439-89-6	Iron	1500			P
7439-92-1	Lead	2.4			P
7439-95-4	Magnesium	156			P
7439-96-5	Manganese	2.8			P
7439-97-6	Mercury	0.021	U		CV
7440-02-0	Nickel	0.62	B		P
7440-09-7	Potassium	99.8			P
7782-49-2	Selenium	0.47	U		P
7440-22-4	Silver	0.10	U		P
7440-23-5	Sodium	149			P
7440-28-0	Thallium	0.16	U	3/3/03	P
7440-62-2	Vanadium	3.1			P
7440-66-6	Zinc	1.2	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-131

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-06A

Level (low/med): MED Date Received: 02/19/03

% Solids: 33.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5900			P
7440-36-0	Antimony	0.41	B	N	P
7440-38-2	Arsenic	3.6			P
7440-39-3	Barium	9.0	B		P
7440-41-7	Beryllium	0.17	B		P
7440-43-9	Cadmium	0.093	U		P
7440-70-2	Calcium	338			P
7440-47-3	Chromium	6.7			P
7440-48-4	Cobalt	0.94	B		P
7440-50-8	Copper	3.5	B		P
7439-89-6	Iron	3150			P
7439-92-1	Lead	23.2			P
7439-95-4	Magnesium	718			P
7439-96-5	Manganese	13.1			P
7439-97-6	Mercury	0.045	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	442			P
7782-49-2	Selenium	1.2	U		P
7440-22-4	Silver	0.27	U		P
7440-23-5	Sodium	484			P
7440-28-0	Thallium	0.40	U		P
7440-62-2	Vanadium	14.3			P
7440-66-6	Zinc	6.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-132

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-07A

Level (low/med): MED Date Received: 02/19/03

% Solids: 59.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2020			P
7440-36-0	Antimony	0.25	U	N	P
7440-38-2	Arsenic	1.4	B		P
7440-39-3	Barium	3.6	B		P
7440-41-7	Beryllium	0.061	B		P
7440-43-9	Cadmium	0.059	U		P
7440-70-2	Calcium	684			P
7440-47-3	Chromium	2.6			P
7440-48-4	Cobalt	0.49	B		P
7440-50-8	Copper	2.2	B		P
7439-89-6	Iron	2030			P
7439-92-1	Lead	9.4			P
7439-95-4	Magnesium	815			P
7439-96-5	Manganese	20.9			P
7439-97-6	Mercury	0.029	B		CV
7440-02-0	Nickel	1.6	B		P
7440-09-7	Potassium	281			P
7782-49-2	Selenium	0.76	U		P
7440-22-4	Silver	0.65	B		P
7440-23-5	Sodium	583			P
7440-28-0	Thallium	0.25	U		P
7440-62-2	Vanadium	7.1			P
7440-66-6	Zinc	3.9	B		P
	Cyanide				NR

RM 2/20/03

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-133

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-08A

Level (low/med): MED Date Received: 02/19/03

% Solids: 51.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8590			P
7440-36-0	Antimony	0.27	U	N	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	7.7	B		P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.064	U		P
7440-70-2	Calcium	686			P
7440-47-3	Chromium	8.5			P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	5.5			P
7439-89-6	Iron	6820			P
7439-92-1	Lead	18.3			P
7439-95-4	Magnesium	1190			P
7439-96-5	Manganese	32.1			P
7439-97-6	Mercury	0.050	B		CV
7440-02-0	Nickel	4.5	B		P
7440-09-7	Potassium	607			P
7782-49-2	Selenium	0.82	U		P
7440-22-4	Silver	0.24	B		P
7440-23-5	Sodium	1070			P
7440-28-0	Thallium	0.27	U		P
7440-62-2	Vanadium	21.1			P
7440-66-6	Zinc	10.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-DUP09

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279__

Matrix (soil/water): SOIL____ Lab Sample ID: B0279-12A_____

Level (low/med): MED____ Date Received: 02/19/03____

% Solids: 61.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8210			P
7440-36-0	Antimony	0.21	U	N	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	6.7	B		P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.049	U		P
7440-70-2	Calcium	410			P
7440-47-3	Chromium	8.2			P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	3.0			P
7439-89-6	Iron	5950			P
7439-92-1	Lead	12.4			P
7439-95-4	Magnesium	899			P
7439-96-5	Manganese	21.7			P
7439-97-6	Mercury	0.037	B		CV
7440-02-0	Nickel	3.8			P
7440-09-7	Potassium	457			P
7782-49-2	Selenium	0.63	U		P
7440-22-4	Silver	0.14	B		P
7440-23-5	Sodium	634		RW 2/28/03	P
7440-28-0	Thallium	0.21	U		P
7440-62-2	Vanadium	17.8			P
7440-66-6	Zinc	8.2			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-136

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279

Matrix (soil/water): SOIL Lab Sample ID: B0279-11A

Level (low/med): MED Date Received: 02/19/03

% Solids: 25.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	16300			P
7440-36-0	Antimony	0.54	U	N	P
7440-38-2	Arsenic	5.6			P
7440-39-3	Barium	49.4			P
7440-41-7	Beryllium	0.45	B		P
7440-43-9	Cadmium	0.12	U		P
7440-70-2	Calcium	3880			P
7440-47-3	Chromium	19.8			P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	10.7			P
7439-89-6	Iron	10300			P
7439-92-1	Lead	51.9			P
7439-95-4	Magnesium	2840			P
7439-96-5	Manganese	45.3			P
7439-97-6	Mercury	0.16			CV
7440-02-0	Nickel	12.2			P
7440-09-7	Potassium	811			P
7782-49-2	Selenium	1.6	U		P
7440-22-4	Silver	2.3	B		P
7440-23-5	Sodium	426		RM 2/28/03	P
7440-28-0	Thallium	0.54	U		P
7440-62-2	Vanadium	48.4			P
7440-66-6	Zinc	34.5			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-137

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279___

Matrix (soil/water): SOIL____ Lab Sample ID: B0279-09A_____

Level (low/med): MED____ Date Received: 02/19/03____

% Solids: 34.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19500			P
7440-36-0	Antimony	0.42	U	N	P
7440-38-2	Arsenic	8.9			P
7440-39-3	Barium	50.2			P
7440-41-7	Beryllium	0.49	B		P
7440-43-9	Cadmium	0.098	U		P
7440-70-2	Calcium	926			P
7440-47-3	Chromium	20.1			P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	11.7			P
7439-89-6	Iron	14200			P
7439-92-1	Lead	71.0			P
7439-95-4	Magnesium	1550			P
7439-96-5	Manganese	38.6			P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	10.2			P
7440-09-7	Potassium	747			P
7782-49-2	Selenium	1.3	U		P
7440-22-4	Silver	1.1	B		P
7440-23-5	Sodium	94.4	B		P
7440-28-0	Thallium	0.42	U		P
7440-62-2	Vanadium	42.8			P
7440-66-6	Zinc	28.5			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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000195

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-138

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279___

Matrix (soil/water): SOIL____ Lab Sample ID: B0279-13A_____

Level (low/med): MED____ Date Received: 02/19/03____

% Solids: 59.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5180			P
7440-36-0	Antimony	0.25	U	N	P
7440-38-2	Arsenic	4.0			P
7440-39-3	Barium	8.4	B		P
7440-41-7	Beryllium	0.11	B		P
7440-43-9	Cadmium	0.058	U		P
7440-70-2	Calcium	145			P
7440-47-3	Chromium	6.1			P
7440-48-4	Cobalt	0.81	B		P
7440-50-8	Copper	2.5	B		P
7439-89-6	Iron	7040			P
7439-92-1	Lead	14.3			P
7439-95-4	Magnesium	293			P
7439-96-5	Manganese	11.2			P
7439-97-6	Mercury	0.044	B		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	263			P
7782-49-2	Selenium	0.78	B		P
7440-22-4	Silver	0.19	B		P
7440-23-5	Sodium	13.7	B		P
7440-28-0	Thallium	0.25	U		P
7440-62-2	Vanadium	14.8			P
7440-66-6	Zinc	6.4			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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000196

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-021903

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279___

Matrix (soil/water): WATER_ Lab Sample ID: B0279-18C_____

Level (low/med): MED____ Date Received: 02/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	0.60	U	*	P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U	*	P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	30.6	B		P
7439-96-5	Manganese	0.94	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U	*	P
7440-09-7	Potassium	78.0	U	*	P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U	*	P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

FMC 2/28/03

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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000186

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King Of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA vial HCl	TCL VOC + MTBE 1 liter Amber glass	TCL SVOC 1 liter Amber glass	TCL Pest 500ml poly bottle	TAL metals 8 gram Encore sampler	TCL VOC 40z Amber glass wide mouth	TCL SVOC + PCB 40z Amber glass wide mouth	TAL metals + Hg 40z Amber glass wide mouth	TAL a/a Mercury 80z Amber glass wide mouth	Extra Size	COMMENTS
TB-021803	2/18/03 1030		X	X			01	2	2										Trip Blank
WFF10-GW1	2/18/03 1355		X	X			02	15	6*	3	3	3							Do MS/MSD
MW53S	2/19/03 1010		X	X			03	6	2	1	1	1							
WOD-SS-129	2/19/03 1040		X		X		04	16					9	2*	2*	2*	1		Do MS/MSD
WOD-SS-130	2/19/03 1105		X		X		05	7					3	1	1	1	1		
WOD-SS-131	2/19/03 1116		X		X		06	7					3	1	1	1	1		
WOD-SS-132	2/19/03 1130		X		X		07	7					3	1	1	1	1		
WOD-SS-133	2/19/03 1142		X		X		08	7					3	1	1	1	1		
WOD-SS-137	2/19/03 1217		X		X		09	7					3	1	1	1	1		
14-GW1	2/19/03 1230		X	X			10	5	2	1	1	1							
WOD-SS-136	2/19/03 1234		X		X		11	7					3	1	1	1	1		
WOD-SS-Dup 09	2/19/03 1242		X		X		12	7					3	1	1	1	1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	2/19/03 1700		2-20-03 0900	Trip Blanks and Blank water were provided by the Laboratory. The samples were shipped under Federal Express Airbill No 8286 8464 5289	4C
	/	/		/		
	/	/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza 7 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: $ gram Encore sampler	40z Amber glass widemouth TCL VOC	40z Amber glass widemouth TCL SVOC	40z Amber glass widemouth TAL Metals	40z Amber glass widemouth TOC	80z Amber glass widemouth Grain Size	500 ml poly HNO3 Dissolved metals	40 ml vial HCl TCL VOA	1 Liter Amber glass TCL SVOC	1 Liter Amber glass TCL PAH	500 ml poly HNO3 TAL Metals	40 ml vial HCl TOC	500 ml poly HNO3 Dissolved Metals	COMMENTS
WOD-SS-138	2/19/03 1249		X		X		13	7	3	1	1	1	1									
WFF10-GW1-F	2/19/03 1355		X	X			14	3						3								DO MS/MSD
MW53S-F	2/19/03 1010		X	X			15	1						1								
14-GW1-F	2/19/03 1230		X	X			16	1						1								
GW-Dup 08	2/19/03 1305		X	X			17	5							2	1	1	1				
RB-021903	2/19/03 1545		X	X			18	7							2	1	1	1	2			Rinsate Blank
GW-Dup 08-F	2/19/03 1305		X	X			19	1												1		
14-GW2	2/19/03 1440		X	X			20	5							2	1	1	1				
14-GW2-F	2/19/03 1440		X	X			21	1												1		
	/																					
	/																					
	/																					

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/19/03 1700	[signature]	2-20-03 0800	Laboratory Supplied Blank Water and Trip Blanks shipped under Federal Express Airbill NO 8286 8464 5284	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous and nine soil samples that were collected on February 19, 2003, and received at Mitkem on February 20, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in one column for sample MW-53S.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-129 for soil samples and on sample WFF10-GW1 for aqueous samples for both total and dissolved. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279_

ICP ID Number: OPTIMA_1A_____ ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum									
Antimony		600	-14	518.2	86.4	-17.6	536.0	89.3	3
Arsenic		100	-5.9	91.5	91.5	-9.5	94.8	94.8	3
Barium									
Beryllium		500		472.9	94.6		503.4	100.7	0.5
Cadmium		1000	-5.4	896.6	89.7	-6.3	956.8	95.7	0.7
Calcium									
Chromium		500	-1.3	472.5	94.5	-2	489.4	97.9	0.6
Cobalt		500	3.7	456.2	91.2	3.7	473.5	94.7	0.9
Copper		500		505.3	101.1		521.7	104.3	4
Iron	200000	200000	181675	184170.7	92.1	213637	192712.3	96.4	26
Lead		500	-15	446.6	89.3	-22.1	468.4	93.7	4
Magnesium	500000	500000	503614	510163.2	102.0	598657	536515.1	107.3	8
Manganese		500	-3.3	469.8	94.0	-4.7	495.1	99.0	0.8
Mercury									
Nickel		1000	-3.1	903.1	90.3	-2.6	940.4	94.0	0.8
Potassium		25000	-	27853.1	111.4	-	26261.7	105.0	78
Selenium		500		494.3	98.9	-11	512.3	102.5	9
Silver		200	4	214.2	107.1		220.2	110.1	2
Sodium		25000	459.7	27198.2	108.8	-	25281.6	101.1	83
Thallium		100	7	102.6	102.6	14.5	102.5	102.5	3
Vanadium		500	12.5	491.5	98.3	8.3	518.0	103.6	0.7
Zinc		1000	8.9	892.0	89.2	9.5	942.2	94.2	7

U.S. EPA - CLP

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279_

ICP ID Number: OPTIMA_1A____ ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum									
Antimony		600				-13.8	538.8	89.8	3
Arsenic		100				-5.6	95.2	95.2	3
Barium									
Beryllium		500					499.5	99.9	0.5
Cadmium		1000				-6	956.1	95.6	0.7
Calcium									
Chromium		500				-1.8	490.1	98.0	0.6
Cobalt		500				3.2	476.2	95.2	0.9
Copper		500					519.2	103.8	4
Iron	200000	200000				191312	191990.3	96.0	26
Lead		500				-21.8	477.2	95.4	4
Magnesium	500000	500000				532755	533969.4	106.8	8
Manganese		500				-3.9	491.3	98.3	0.8
Mercury									
Nickel		1000				-2.9	942.2	94.2	0.8
Potassium		25000	355.9	26939.7	107.8	197.9	27121.5	108.5	78
Selenium		500				-12.5	511.4	102.3	9
Silver		200					218.3	109.2	2
Sodium		25000				-	25175.1	100.7	83
Thallium		100				12.2	103.6	103.6	3
Vanadium		500				12.1	513.7	102.7	0.7
Zinc		1000				8.8	944.1	94.4	7

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INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-129		U	IRON	200000	-17.6	39117	-3.44	na	UR
Arsenic	3	WOD-SS-129	29.9		IRON	200000	-9.5	39117	-1.86	na	na
Cadmium	0.7	WOD-SS-129		U	IRON	200000	-6.3	39117	-1.23	na	UR
Chromium	0.6	WOD-SS-129	47.3		IRON	200000	-2	39117	-0.39	na	na
Lead	4	WOD-SS-129	83		IRON	200000	-22.1	39117	-4.32	na	na
Manganese	0.8	WOD-SS-129	203.1		IRON	200000	-4.7	39117	-0.92	na	na
Nickel	0.8	WOD-SS-129	21.9		IRON	200000	-2.9	39117	-0.57	na	na
Selenium	9	WOD-SS-129		U	IRON	200000	-12.5	39117	-2.44	na	UL
Cobalt	0.9	WOD-SS-129	6.5		IRON	200000	3.7	39117	0.72	K	na
Potassium	78	WOD-SS-129	2909.4		IRON	200000	355.9	39117	69.61	na	na
Silver	2	WOD-SS-129	2.1		IRON	200000	4	39117	0.78	K	na
Sodium	83	WOD-SS-129	1456		IRON	200000	459.7	39117	89.91	na	na
Thallium	3	WOD-SS-129		U	IRON	200000	14.5	39117	2.84	na	na
Vanadium	0.7	WOD-SS-129	99.7		IRON	200000	12.5	39117	2.44	na	na
Zinc	7	WOD-SS-129	51		IRON	200000	9.5	39117	1.86	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-130		U	IRON	200000	-17.6	28811	-2.54	na	UL
Arsenic	3	WOD-SS-130	15.7		IRON	200000	-9.5	28811	-1.37	na	na
Cadmium	0.7	WOD-SS-130		U	IRON	200000	-6.3	28811	-0.91	na	UR
Chromium	0.6	WOD-SS-130	29.7		IRON	200000	-2	28811	-0.29	na	na
Lead	4	WOD-SS-130	46		IRON	200000	-22.1	28811	-3.18	na	na
Manganese	0.8	WOD-SS-130	53.4		IRON	200000	-4.7	28811	-0.68	na	na
Nickel	0.8	WOD-SS-130	11.9		IRON	200000	-2.9	28811	-0.42	na	na
Selenium	9	WOD-SS-130		U	IRON	200000	-12.5	28811	-1.80	na	UL
Cobalt	0.9	WOD-SS-130	2.8		IRON	200000	3.7	28811	0.53	K	na
Potassium	78	WOD-SS-130	1917		IRON	200000	355.9	28811	51.27	na	na
Silver	2	WOD-SS-130		U	IRON	200000	4	28811	0.58	na	na
Sodium	83	WOD-SS-130	2865.8		IRON	200000	459.7	28811	66.22	na	na
Thallium	3	WOD-SS-130		U	IRON	200000	14.5	28811	2.09	na	na
Vanadium	0.7	WOD-SS-130	58.8		IRON	200000	12.5	28811	1.80	na	na
Zinc	7	WOD-SS-130	22.1		IRON	200000	9.5	28811	1.37	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-131	3.1		IRON	200000	-17.6	23665	-2.08	L	na
Arsenic	3	WOD-SS-131	26.9		IRON	200000	-9.5	23665	-1.12	na	na
Cadmium	0.7	WOD-SS-131		U	IRON	200000	-6.3	23665	-0.75	na	UR
Chromium	0.6	WOD-SS-131	50.3		IRON	200000	-2	23665	-0.24	na	na
Lead	4	WOD-SS-131	174.2		IRON	200000	-22.1	23665	-2.61	na	na
Manganese	0.8	WOD-SS-131	98.7		IRON	200000	-4.7	23665	-0.56	na	na
Nickel	0.8	WOD-SS-131	24.4		IRON	200000	-2.9	23665	-0.34	na	na
Selenium	9	WOD-SS-131		U	IRON	200000	-12.5	23665	-1.48	na	UL
Cobalt	0.9	WOD-SS-131	7.1		IRON	200000	3.7	23665	0.44	na	na
Potassium	78	WOD-SS-131	3322		IRON	200000	355.9	23665	42.11	na	na
Silver	2	WOD-SS-131		U	IRON	200000	4	23665	0.47	na	na
Sodium	83	WOD-SS-131	3638.8		IRON	200000	459.7	23665	54.39	na	na
Thallium	3	WOD-SS-131		U	IRON	200000	14.5	23665	1.72	na	na
Vanadium	0.7	WOD-SS-131	107.3		IRON	200000	12.5	23665	1.48	na	na
Zinc	7	WOD-SS-131	49.8		IRON	200000	9.5	23665	1.12	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-132		U	IRON	200000	-17.6	24001	-2.11	na	UL
Arsenic	3	WOD-SS-132	16.9		IRON	200000	-9.5	24001	-1.14	na	na
Cadmium	0.7	WOD-SS-132		U	IRON	200000	-6.3	24001	-0.76	na	UR
Chromium	0.6	WOD-SS-132	30.2		IRON	200000	-2	24001	-0.24	na	na
Lead	4	WOD-SS-132	111.3		IRON	200000	-22.1	24001	-2.65	na	na
Manganese	0.8	WOD-SS-132	246.3		IRON	200000	-4.7	24001	-0.56	na	na
Nickel	0.8	WOD-SS-132	19.4		IRON	200000	-2.9	24001	-0.35	na	na
Selenium	9	WOD-SS-132		U	IRON	200000	-12.5	24001	-1.50	na	UL
Cobalt	0.9	WOD-SS-132	5.8		IRON	200000	3.7	24001	0.44	na	na
Potassium	78	WOD-SS-132	3316.1		IRON	200000	355.9	24001	42.71	na	na
Silver	2	WOD-SS-132		U	IRON	200000	4	24001	0.48	na	na
Sodium	83	WOD-SS-132	6878.2		IRON	200000	459.7	24001	55.17	na	na
Thallium	3	WOD-SS-132		U	IRON	200000	14.5	24001	1.74	na	na
Vanadium	0.7	WOD-SS-132	83.5		IRON	200000	12.5	24001	1.50	na	na
Zinc	7	WOD-SS-132	45.7		IRON	200000	9.5	24001	1.14	na	na

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-133		U	IRON	200000	-17.6	74380	-6.55	na	UR
Arsenic	3	WOD-SS-133	44.6		IRON	200000	-9.5	74380	-3.53	na	na
Cadmium	0.7	WOD-SS-133		U	IRON	200000	-6.3	74380	-2.34	na	UR
Chromium	0.6	WOD-SS-133	93.1		IRON	200000	-2	74380	-0.74	na	na
Lead	4	WOD-SS-133	199.3		IRON	200000	-22.1	74380	-8.22	na	na
Manganese	0.8	WOD-SS-133	350.3		IRON	200000	-4.7	74380	-1.75	na	na
Nickel	0.8	WOD-SS-133	49		IRON	200000	-2.9	74380	-1.08	na	na
Selenium	9	WOD-SS-133		U	IRON	200000	-12.5	74380	-4.65	na	UL
Cobalt	0.9	WOD-SS-133	16.9		IRON	200000	3.7	74380	1.38	na	na
Potassium	78	WOD-SS-133	6628.2		IRON	200000	355.9	74380	132.36	na	na
Silver	2	WOD-SS-133	2.7		IRON	200000	4	74380	1.49	K	na
Sodium	83	WOD-SS-133	11697		IRON	200000	459.7	74380	170.96	na	na
Thallium	3	WOD-SS-133		U	IRON	200000	14.5	74380	5.39	na	na
Vanadium	0.7	WOD-SS-133	230.4		IRON	200000	12.5	74380	4.65	na	na
Zinc	7	WOD-SS-133	118.6		IRON	200000	9.5	74380	3.53	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-136		U	IRON	200000	-17.6	57873	-5.09	na	UR
Arsenic	3	WOD-SS-136	31.2		IRON	200000	-9.5	57873	-2.75	na	na
Cadmium	0.7	WOD-SS-136		U	IRON	200000	-6.3	57873	-1.82	na	UR
Chromium	0.6	WOD-SS-136	110.7		IRON	200000	-2	57873	-0.58	na	na
Lead	4	WOD-SS-136	290.5		IRON	200000	-22.1	57873	-6.39	na	na
Manganese	0.8	WOD-SS-136	253.7		IRON	200000	-4.7	57873	-1.36	na	na
Nickel	0.8	WOD-SS-136	68.1		IRON	200000	-2.9	57873	-0.84	na	na
Selenium	9	WOD-SS-136		U	IRON	200000	-12.5	57873	-3.62	na	UL
Cobalt	0.9	WOD-SS-136	17.7		IRON	200000	3.7	57873	1.07	na	na
Potassium	78	WOD-SS-136	4543.1		IRON	200000	355.9	57873	102.99	na	na
Silver	2	WOD-SS-136	12.9		IRON	200000	4	57873	1.16	na	na
Sodium	83	WOD-SS-136	2385.7		IRON	200000	459.7	57873	133.02	na	na
Thallium	3	WOD-SS-136		U	IRON	200000	14.5	57873	4.20	na	na
Vanadium	0.7	WOD-SS-136	271.3		IRON	200000	12.5	57873	3.62	na	na
Zinc	7	WOD-SS-136	193.2		IRON	200000	9.5	57873	2.75	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-137		U	IRON	200000	-17.6	101400	-8.92	na	UR
Arsenic	3	WOD-SS-137	63.5		IRON	200000	-9.5	101400	-4.82	na	na
Cadmium	0.7	WOD-SS-137		U	IRON	200000	-6.3	101400	-3.19	na	UR
Chromium	0.6	WOD-SS-137	143.5		IRON	200000	-2	101400	-1.01	na	na
Lead	4	WOD-SS-137	506.7		IRON	200000	-22.1	101400	-11.20	na	na
Manganese	0.8	WOD-SS-137	275.5		IRON	200000	-4.7	101400	-2.38	na	na
Nickel	0.8	WOD-SS-137	72.5		IRON	200000	-2.9	101400	-1.47	na	na
Selenium	9	WOD-SS-137		U	IRON	200000	-12.5	101400	-6.34	na	UL
Cobalt	0.9	WOD-SS-137	21.7		IRON	200000	3.7	101400	1.88	na	na
Potassium	78	WOD-SS-137	5330.1		IRON	200000	355.9	101400	180.44	na	na
Silver	2	WOD-SS-137	7.6		IRON	200000	4	101400	2.03	K	na
Sodium	83	WOD-SS-137	674.3		IRON	200000	459.7	101400	233.07	K	na
Thallium	3	WOD-SS-137		U	IRON	200000	14.5	101400	7.35	na	na
Vanadium	0.7	WOD-SS-137	305.8		IRON	200000	12.5	101400	6.34	na	na
Zinc	7	WOD-SS-137	203.8		IRON	200000	9.5	101400	4.82	na	na

1/B11

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-138		U	IRON	200000	-17.6	85530	-7.53	na	UR
Arsenic	3	WOD-SS-138	49		IRON	200000	-9.5	85530	-4.06	na	na
Cadmium	0.7	WOD-SS-138		U	IRON	200000	-6.3	85530	-2.69	na	UR
Chromium	0.6	WOD-SS-138	74		IRON	200000	-2	85530	-0.86	na	na
Lead	4	WOD-SS-138	174.1		IRON	200000	-22.1	85530	-9.45	na	na
Manganese	0.8	WOD-SS-138	136.6		IRON	200000	-4.7	85530	-2.01	na	na
Nickel	0.8	WOD-SS-138	30.4		IRON	200000	-2.9	85530	-1.24	na	na
Selenium	9	WOD-SS-138	9.5		IRON	200000	-12.5	85530	-5.35	L	na
Cobalt	0.9	WOD-SS-138	9.9		IRON	200000	3.7	85530	1.58	K	na
Potassium	78	WOD-SS-138	3192.6		IRON	200000	355.9	85530	152.20	na	na
Silver	2	WOD-SS-138	2.3		IRON	200000	4	85530	1.71	K	na
Sodium	83	WOD-SS-138	167.1		IRON	200000	459.7	85530	196.59	R	na
Thallium	3	WOD-SS-138		U	IRON	200000	14.5	85530	6.20	na	na
Vanadium	0.7	WOD-SS-138	180		IRON	200000	12.5	85530	5.35	na	na
Zinc	7	WOD-SS-138	77.4		IRON	200000	9.5	85530	4.06	na	na

1/L511

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-DUP09		U	IRON	200000	-17.6	84997	-7.48	na	UR
Arsenic	3	WOD-SS-DUP09	55.7		IRON	200000	-9.5	84997	-4.04	na	na
Cadmium	0.7	WOD-SS-DUP09		U	IRON	200000	-6.3	84997	-2.68	na	UR
Chromium	0.6	WOD-SS-DUP09	117.7		IRON	200000	-2	84997	-0.85	na	na
Lead	4	WOD-SS-DUP09	176.3		IRON	200000	-22.1	84997	-9.39	na	na
Manganese	0.8	WOD-SS-DUP09	309.6		IRON	200000	-4.7	84997	-2.00	na	na
Nickel	0.8	WOD-SS-DUP09	54.9		IRON	200000	-2.9	84997	-1.23	na	na
Selenium	9	WOD-SS-DUP09		U	IRON	200000	-12.5	84997	-5.31	na	UL
Cobalt	0.9	WOD-SS-DUP09	16.7		IRON	200000	3.7	84997	1.57	na	na
Potassium	78	WOD-SS-DUP09	6520		IRON	200000	355.9	84997	151.25	na	na
Silver	2	WOD-SS-DUP09	2.1		IRON	200000	4	84997	1.70	K	na
Sodium	83	WOD-SS-DUP09	9044.3		IRON	200000	459.7	84997	195.37	na	na
Thallium	3	WOD-SS-DUP09		U	IRON	200000	14.5	84997	6.16	na	na
Vanadium	0.7	WOD-SS-DUP09	254.7		IRON	200000	12.5	84997	5.31	na	na
Zinc	7	WOD-SS-DUP09	117		IRON	200000	9.5	84997	4.04	na	na

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3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0279___

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	17.0	U	17.0	U	0.850	U	P
Antimony			3.0	U	3.0	U	3.0	U	0.150	U	P
Arsenic			3.0	U	3.0	U	3.0	U	0.150	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	34.3 0.343	B	P
Beryllium			0.5	U	0.5	U	0.5	U	0.025	U	P
Cadmium			0.7	U	0.7	U	0.7	U	0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	12.000	U	P
Chromium			0.6	U	0.6	U	0.6	U	0.030	U	P
Cobalt			0.9	U	0.9	U	0.9	U	0.045	U	P
Copper			4.0	U	4.0	U	4.0	U	0.200	U	P
Iron			32.3	B	26.0	U	291 58.2	B	1.861	B	P
Lead			4.0	U	4.0	U	4.0	U	0.200	U	P
Magnesium			74.5	B	15.3	B	422 84.4	B	2.908	B	P
Manganese			0.8	U	0.8	U	0.8	U	0.118	B	P
Mercury			0.1	U					0.017	U	CV
Nickel			0.8	U	5.5 1.1	B	0.8	U	8 0.080	B	P
Potassium	2783 556.6	B	415.8	B	420.6	B			24.106	B	P
Selenium			9.0	U	9.0	U	9.0	U	0.450	U	P
Silver			-2.7	B	-2.8	B	-2.9	B	-0.126	B	P
Sodium			-224.4	B	-199.9	B			-8.710	B	P
Thallium			3.0	U	17.5 3.5	B	3.0	U	0.150	U	P
Vanadium			0.7	U	0.7	U	0.7	U	0.035	U	P
Zinc			7.0	U	7.0	U	7.0	U	0.350	U	P
Cyanide											

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

NO aqueous env. spls

AQ. NA

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	94 18.8	B			19.904 99.52	B	P
Antimony	3.0	U	3.7	B	28.5 5.7	B	3.0	U	3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U			4.260 21.3	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U			240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.900	U	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	4.214 21.07	B	P
Iron	26.0	U	26.9	B	36.9	B	26.0	U	29.404	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	8.0	U	16.8	B	68.8	B	10.5	B	39.244	B	P
Manganese	0.8	U	7 1.4	B	1.2	B	0.8	U	0.800	U	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium	78.0	U	-613.6	B	-795.3	B	-706.6	B	-302.466	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	-2.6	B	-2.5	B	2.000	U	P
Sodium 3935	787.0	B	83.0	U	-196.8	B	-169.8	B	247.562	B	P
Thallium	3.1	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WOD-SS-129S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0279__

Matrix (soil/water): SOIL__ Level (low/med): MED__

% Solids for Sample: 78.0____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	17.0139		0.1832	U	27.78	61.2	N	P
Arsenic	75-125	31.4107		1.8272		27.78	106.5		P
Barium	75-125	593.3315		6.4257	B	555.56	105.6		P
Beryllium	75-125	14.8974		0.0557	B	13.86	107.1		P
Cadmium	75-125	14.8743		0.0427	U	13.86	107.3		P
Calcium									NR
Chromium	75-125	63.0412		2.8887		55.56	108.3		P
Cobalt	75-125	153.0349		0.3958	B	138.58	110.1		P
Copper	75-125	76.4699		1.1570	B	68.99	109.2		P
Iron									NR
Lead	75-125	35.1267		5.0672		27.78	108.2		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.8410		0.0210	U	0.84	100.1		CV
Nickel	75-125	152.1706		1.3342	B	138.58	108.8		P
Potassium									NR
Selenium	75-125	26.3051		0.5495	U	27.78	94.7		P
Silver	75-125	72.1295		0.1282	B	68.99	104.4		P
Sodium									NR
Thallium	75-125	28.8046		0.1832	U	27.78	103.7		P
Vanadium	75-125	154.1946		6.0856		138.58	106.9		P
Zinc	75-125	150.9656		3.1140		138.58	106.7		P
Cyanide									NR

Comments:

_____

_____

_____

_____

001367

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	WOD-SS-133		WOD-SS-DUP09				
Laboratory ID:	B0279-08A		B0279-12A				
Sample Date:	02/19/03		02/19/03				
Duplicate:	WOD-SS-DUP09		WOD-SS-133				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	8590		8210		4.5	1.55	1, IN
Antimony	0.27	UL	0.21	UL	25.0	0.27	
Arsenic	4		4		5.0	0.27	1, IN
Barium	7.7		6.7		13.9	0.36	1, IN
Beryllium	0.25		0.21		17.4	0.05	2, IN
Cadmium	0.064	U	0.049	U	26.5	0.06	
Calcium	686		410		50.4	21.82	1, J
Chromium	8.5		8.2		3.6	0.05	1, IN
Cobalt	1.6		1.2		28.6	0.08	1, IN
Copper	5.5		3		58.8	0.36	1, J
Iron	6820		5950		13.6	2.36	1, IN
Lead	18.3		12.4		38.4	0.36	1, IN
Magnesium	1190		899		27.9	0.73	1, IN
Manganese	32.1		21.7		38.7	0.07	1, IN
Mercury	0.05		0.037		29.9	0.01	2, IN
Nickel	4.5		3.8		16.9	0.07	1, IN
Potassium	607		457		28.2	7.09	1, IN
Selenium	0.82	U	0.63	U	26.2	0.82	
Silver	0.24	K	0.14	K	52.6	0.18	2, IN
Sodium	1070		634		51.2	7.55	1, J
Thallium	0.27	U	0.21	U	25.0	0.27	
Vanadium	21.1		17.8		17.0	0.06	1, IN
Zinc	10.9		8.2		28.3	0.64	1, IN

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.

2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.

U - the compound was not detected in the sample at or above the associated numerical value.

NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

J - The positive results should be considered estimated.

B - The result should be considered non-detected or qualitatively questionable due to blank contamination.

IN - The results are acceptable.

COMMENTS

Qualify Ca, Cu, and Na results as estimated (J).

JLK 3/31/03

TETRA TECH NUS

PHIL- 16998

TO: G. GLENN **DATE:** APRIL 1, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – PH, TOC, and GRAIN SIZE
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0279

SAMPLES: **9/Solid/**

WOD-SS-129	WOD-SS-DUP09
WOD-SS-130	WOD-SS-136
WOD-SS-131	WOD-SS-137
WOD-SS-132	WOD-SS-138
WOD-SS-133	

1/Aqueous/

RB-021903

OVERVIEW

The sample set for the Waste Oil Dump Remedial Investigation – NASA Wallops Island, Virginia, SDG B0279 consists of nine soil environmental samples (designated WOD-SS-) and one rinsate blank (designated RB-). All soil samples were analyzed for pH and Grain Size. The rinsate blank was analyzed for Total Organic Carbon (TOC). One field duplicate pair (samples WOD-SS-133/WOD-SS-DUP09) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 19, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 9045C for pH, EPA Method 415.1 for TOC, and ASTM Method D422 for Grain Size.

SUMMARY

All parameters were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, laboratory duplicate precision, field duplicate precision, logbook documentation, and calculations.

NOTES

The Relative Percent Difference (RPD) for all field duplicate results were within the quality control limit of 50%.

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Results as Reported by the Laboratory
2. Appendix B - Support Documentation

APPENDIX A

Results as Reported by the Laboratory

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-129
Lab ID: B0279-04

Project: Wallops Island
Collection Date: 02/19/03 10:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.7		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: W0D-SS-130
Lab ID: B0279-05

Project: Wallops Island
Collection Date: 02/19/03 11:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	6.1		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: W0D-SS-131
Lab ID: B0279-06

Project: Wallops Island
Collection Date: 02/19/03 11:16

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.3		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-132
Lab ID: B0279-07

Project: Wallops Island
Collection Date: 02/19/03 11:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.8		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-133
Lab ID: B0279-08

Project: Wallops Island
Collection Date: 02/19/03 11:42

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.3		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analytes detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: W0D-SS-DUP09
Lab ID: B0279-12

Project: Wallops Island
Collection Date: 02/19/03 12:42

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.3		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

001520

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-136
Lab ID: B0279-11

Project: Wallops Island
Collection Date: 02/19/03 12:34

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9 045C_S**		
pH	6.2		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: W0D-SS-137
Lab ID: B0279-09

Project: Wallops Island
Collection Date: 02/19/03 12:17

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.3		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WOD-SS-138
Lab ID: B0279-13

Project: Wallops Island
Collection Date: 02/19/03 12:49

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH						**SW9045C_S**	
pH	4.7		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: RB-021903
Lab ID: B0279-18

Project: Wallops Island
Collection Date: 02/19/03 15:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	02/28/2003	6168

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

001522

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-129

Sample #: 001 B0279-04B 02/19/03 @1040

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.04	99.96
No. 10	0.19	99.77
No. 20	3.24	96.53
No. 40	24.74	71.79
No. 60	32.04	39.75
No. 140	36.59	3.16
No. 200	1.58	1.58

001540

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOP-SS-130

Sample #: 002 B0279-05B 02/19/03 @1105

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	1.82	98.18
No. 20	6.74	91.44
No. 40	27.29	64.15
No. 60	39.00	25.15
No. 140	23.79	1.36
No. 200	0.46	0.90

001544

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-131

Sample #: 003 B0279-06B 02/19/03 @1116

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	2.95	97.05
No. 10	6.50	90.55
No. 20	12.10	78.45
No. 40	23.84	54.61
No. 60	28.18	26.43
No. 140	23.70	2.73
No. 200	1.06	1.67

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-132

Sample #: 004 B0279-07B 02/19/03 @1130

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.76	99.24
No. 10	2.33	96.91
No. 20	15.61	81.30
No. 40	21.54	59.76
No. 60	24.46	35.30
No. 140	30.14	5.16
No. 200	3.02	2.14

001546

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-133

Sample #: 005 B0279-08B 02/19/03 @1142

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.06	99.94
No. 10	5.18	94.76
No. 20	15.57	79.19
No. 40	23.22	55.97
No. 60	24.88	31.09
No. 140	24.11	6.98
No. 200	2.48	4.50

001547

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/2003

Approved by: _____
R.I. Analytical

WOD-SS-DUP09

Sample #: 008 B0279-12B 02/19/03 @1242

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	4.35	95.65
No. 10	11.76	83.89
No. 20	15.82	68.07
No. 40	20.55	47.52
No. 60	21.67	25.85
No. 140	20.23	5.62
No. 200	1.99	3.63

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-136

Sample #: 007 B0279-11B 02/19/03 @1234

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	29.94	70.06
No. 10	36.81	33.25
No. 20	15.81	17.44
No. 40	7.14	10.30
No. 60	4.01	6.29
No. 140	3.87	2.42
No. 200	0.65	1.77

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/03

Approved by: _____
R.I. Analytical

WOD-SS-137

Sample #: 006 B0279-09B 02/19/03 @1217

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	4.07	95.93
No. 10	35.82	60.11
No. 20	23.62	36.49
No. 40	12.36	24.13
No. 60	8.52	15.61
No. 140	8.39	7.22
No. 200	1.54	5.68

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2208
Date Received: 2/21/2003

Approved by: _____
R.I. Analytical

WOD-SS-138

Sample #: 009 B0279-14B 02/19/03 @1249

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.84	99.16
No. 10	6.48	92.68
No. 20	16.14	76.54
No. 40	23.92	52.62
No. 60	18.91	33.71
No. 140	30.09	3.62
No. 200	1.58	2.04

APPENDIX B

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King OF Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA vial HCl	TCL VOC + MTBE 1 Liter Amber glass	TAL Suite glass 1 Liter Amber glass	TCL Pest Mwds 500ml Poly Mwds	TAL Metals 8 oz Amber glass widemouth	TCL VOC 40z Amber glass widemouth	TCL SVOC + PCB 40z Amber glass widemouth	TAL Metals + Hg 40z Amber glass widemouth	TAL o/g Mastics 8 oz Amber glass widemouth	Lithia Site	COMMENTS
TB-021803	2/18/03 1030		X	X			01	2	2										Trip Blank
WFF10-GW1	2/18/03 1355		X	X			02	15	6	3	3	3							DO MS/MSD
MW53S	2/19/03 1010		X	X			03	6	2	1	1	1							
WOD-SS-129	2/19/03 1040		X		X		04	16					9	2	2	2	1		DO MS/MSD
WOD-SS-130	2/19/03 1105		X		X		05	7					3	1	1	1	1		
WOD-SS-131	2/19/03 1116		X		X		06	7					3	1	1	1	1		
WOD-SS-132	2/19/03 1130		X		X		07	7					3	1	1	1	1		
WOD-SS-133	2/19/03 1142		X		X		08	7					3	1	1	1	1		
WOD-SS-137	2/19/03 1217		X		X		09	7					3	1	1	1	1		
14-GW1	2/19/03 1230		X	X			10	5	2	1	1	1							
WOD-SS-136	2/19/03 1234		X		X		11	7					3	1	1	1	1		
WOD-SS-Dup09	2/19/03 1242		X		X		12	7					3	1	1	1	1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Mayer	2/19/03 1700		2-20-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blanks and Blank water were provided by the Laboratory. The samples were shipped under Federal Express Airbill No 8286 8464 5289

COOLER TEMP: 4C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0279
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza 7 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 5 gram Encore sampler	TCL VOC 40z Amber glass widemouth	TCL SVOC 40z Amber glass widemouth	TAL Metals 40z Amber glass widemouth	TOC o/a moisture 80z amber glass widemouth	Certain SVOC 500 ml poly HNO3	Dissolved Metals 40 ml VOA vial HCl	TCL VOA 1 Liter Amber glass	TCL SVOC 1 Liter Amber glass	TCL PCB 500 ml poly HNO3	TAL Metals 40 ml VOA vial HCl	TOC 500 ml poly HNO3	Dissolved Metals	COMMENTS
WOD-SS-138	2/19/03 1249		X		X		13	1	3	1	1	1	1									
WFF10-GW1-F	2/19/03 1355		X	X			14	3						3								DO MS/MSD
MW53S-F	2/19/03 1010		X	X			15	1						1								
14-GW1-F	2/19/03 1230		X	X			16	1						1								
GW-Dup 08	2/19/03 1305		X	X			17	5							2	1	1	1				
RB-021903	2/19/03 1545		X	X			18	7							2	1	1	1	2			Rinsate Blank
GW-Dup 08-F	2/19/03 1305		X	X			19	1												1		
14-GW2	2/19/03 1440		X	X			20	5							2	1	1	1				
14-GW2-F	2/19/03 1440		X	X			21	1												1		
	/																					
	/																					
	/																					

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	2/19/03 1700	[signature]	2-20-03 0800
		/		/
		/		/

ADDITIONAL REMARKS: Laboratory Supplied Blank Water and Trip Blanks
Shipped under Fedral Express
Airbill NO 8286 8464 5289

COOLER TEMP: 3°

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

m Corporation
o Center Blvd
ick, RI 02886-1755
) 732-3400

B0279

CHAIN-OF-CUSTODY RECORD

Subcontractor:
RI Analytical Laboratory
41 Illinois Ave
Warwick, RI 02886

(401) 737-8500

21-Feb-03

Sample ID	Matrix	Collection Date	Requested Tests						
			D422						
B0279-04B	Soil	2/19/03 10:40:00 AM	1						
B0279-05B	Soil	2/19/03 11:05:00 AM	1						
B0279-06B	Soil	2/19/03 11:16:00 AM	1						
B0279-07B	Soil	2/19/03 11:30:00 AM	1						
B0279-08B	Soil	2/19/03 11:42:00 AM	1						
B0279-09B	Soil	2/19/03 12:17:00 PM	1						
B0279-11B	Soil	2/19/03 12:34:00 PM	1						
B0279-12B	Soil	2/19/03 12:42:00 PM	1						
B0279-13B	Soil	2/19/03 12:49:00 PM	1						

1) D422 or equivalent method for the analysis of GRAIN SIZE

Comments: INCLUDE ALL RAW DATA PO#295

0302-02208

		Date/Time			Date/Time
Relinquished by:	J. Davis 1530	2-21-03	**Received by:**	M. Sousa	2-21-03 1530
Relinquished by:			**Received by:**		

MM

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/21/03
Date Reported: 2/26/03
P.O. #: 295
Work Order #: 0302-02208

DESCRIPTION: PROJECT# B0279 (NINE SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

001539

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

TETRA TECH NUS

PHIL-17027

TO: G. GLENN **DATE:** APRIL 8, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0301

SAMPLES:

5/Solid/

WOD-SS-126	WOD-SS-DUP10
WOD-SS-127	WOD-SS-139
WOD-SS-128	

3/Aqueous

FB-022103	TB-022003
RB-022103	

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0301, consists of 5 solid environmental samples (designated WOD-SS-), one field blank (designated FB-), one rinsate blank (designated RB-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). One field duplicate pair (samples WOD-SS-128/WOD-SS-DUP10) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 20 and 21, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Acetone*	10 ug/L	100 ug/kg
Methylene Chloride*	14 ug/L	140 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The soil action levels apply to all soil environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone and methylene chloride in soil samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The initial calibration percent relative standard deviation (%RSD) for acetone exceeded the QC limit of 30%. The associated aqueous positive results for acetone were qualified as estimated (J).
- The continuing calibration percent difference (%D) for methylene chloride exceeded the QC limit of 25%. The associated aqueous positive results for methylene chloride were qualified as estimated (J).

SEMIVOLATILE FRACTION

- The initial calibration percent relative standard deviation (%RSD) for benzaldehyde exceeded the QC limit of 30%. The associated detected results for benzaldehyde were qualified as estimated (J).
- The initial calibration percent relative standard deviation (%RSD) for 3-nitroaniline exceeded the QC limit of 50%. The associated non-detected results for 3-nitroaniline were qualified as estimated (UJ).
- The continuing calibration percent difference (%D) for 3,3-dichlorobenzidine exceeded the QC limit of 50%. The associated non-detected aqueous results for 3,3-dichlorobenzidine were qualified as estimated (UJ).
- The continuing calibration percent difference (%D) for hexachlorocyclopentadiene, 4-nitroaniline, and benzaldehyde exceeded the QC limit of 50%. The associated detected and non-detected results for samples WOD-SS-127 and WOD-SS-DUP10 were qualified as estimated (J/UJ).
- Positive results reported at concentrations less than the Contract Required Quantitation Limit (CRQL) were qualified estimated, (J).

NOTES

The percent recoveries for volatile compounds were less than the lower QC limits for 3 compounds in the MS and 3 compounds in the MSD performed on sample WOD-SS-126. The percent recoveries for volatile compounds exceeded the upper QC limits for 4 compounds in the MS and 5 compounds in the

MSD performed on sample WOD-SS-126. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

Samples WOD-SS-126 and WOD-SS-127 were reported from the low level analyses with target compound acetone reported from the medium level analysis. Acetone was outside the calibration range of the instrument in the original analyses. Acetone was was qualified (B) due to blank contamination.

Two analyses were run for sample WOD-SS-128. The original analysis was reported on the data summary. The reanalysis results for WOD-SS-128 were discarded by the data validator. In the reanalysis, carryover effects were observed with quantitation ion areas of about one percent of the preceding run's areas for several compounds. The original analysis results were comparable with the field duplicate sample (WOD-SS-DUP10) results.

The aqueous semivolatile fraction LCSD percent recoveries exceeded the upper QC limits for isophorone, 3-nitroaniline, 4-nitroaniline, N-nitrosodiphenylamine, and 3,3'-dichlorobenzidine. No action was taken because there were no positive results for these compounds.

The soil semivolatile fraction LCS percent recoveries exceeded the upper QC limits for 2,2'-oxybis(1-chloropropane), N-nitrosodiphenylamine, and carbazole. No action was taken because there were no positive results for these compounds.

The percent recoveries for semivolatile compounds were less than the lower QC limits for 38 compounds in the MS and 24 compounds in the MSD performed on sample WOD-SS-126. The relative percent difference (RPD) exceeded the QC limit of 40% for two compounds. In accordance with Region 3 data validation guidance, no data qualifications were made solely on the basis of matrix spike recoveries.

Field duplicate results exhibited acceptable precision among all positive results detected in the field duplicate pair.

No other problems were noted during data review.

EXECUTIVE SUMMARY

Laboratory Performance: Methylene chloride was detected in the laboratory blanks. One compound exceeded the initial calibration QC criteria in the volatile fraction. Two compounds exceeded the continuing calibration QC criteria in the volatile fraction. Two compounds exceeded the initial calibration QC criteria in the semivolatile fraction. Four compounds exceeded the continuing calibration QC criteria in the semivolatile fraction. Three compounds exceeded QC limits in the LCS for the semivolatile fraction.

Other Factors Affecting Data Quality: Acetone and methylene chloride were detected at maximum concentrations in the field QC blanks. Percent recoveries for several compounds were outside the QC limits in the MS/MSD samples for the volatile fraction. Percent recoveries for several compounds were outside QC limits in the MS/MSD samples for the semivolatile fraction.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-139		
Laboratory ID:	B0301-12A			B0301-13A			B0301-14A			B0301-15A			B0301-16A		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Pct Solid:	75			74			53			52			59		
Duplicate:							WOD-SS-DUP10			WOD-SS-128					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1,1-Trichloroethane	14	U		14	U		22	U		22	U		16	U	
1,1,2,2-Tetrachloroethane	14	U		14	U		22	U		22	U		16	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	14	U		14	U		22	U		22	U		16	U	
1,1,2-Trichloroethane	14	U		14	U		22	U		22	U		16	U	
1,1-Dichloroethane	14	U		14	U		22	U		22	U		16	U	
1,1-Dichloroethene	14	U		14	U		22	U		22	U		16	U	
1,2,4-Trichlorobenzene	2	J	P	14	U		22	U		22	U		16	U	
1,2,4-Trimethylbenzene	4	J	P	5	J	P	22	U		22	U		16	U	
1,2-Dibromo-3-chloropropane	14	U		14	U		22	U		22	U		16	U	
1,2-Dibromoethane	14	U		14	U		22	U		22	U		16	U	
1,2-Dichlorobenzene	3	J	P	2	J	P	22	U		22	U		16	U	
1,2-Dichloroethane	14	U		14	U		22	U		22	U		16	U	
1,2-Dichloroethene (cis)	14	U		14	U		22	U		22	U		16	U	
1,2-Dichloroethene (trans)	14	U		14	U		22	U		22	U		16	U	
1,2-Dichloropropane	14	U		14	U		22	U		22	U		16	U	
1,3,5-Trimethylbenzene	4	J	P	4	J	P	22	U		22	U		16	U	
1,3-Dichlorobenzene	3	J	P	3	J	P	22	U		22	U		16	U	
1,4-Dichlorobenzene	3	J	P	3	J	P	22	U		22	U		16	U	
2-Butanone	28			35			22	U		23			21		
2-Hexanone	4	J	P	6	J	P	22	U		22	U		16	U	
4-Methyl-2-pentanone	2	J	P	3	J	P	22	U		22	U		16	U	
Acetone	410	B	B	410	B	B	110	B	B	170	B	B	180		
Benzene	14	U		14	U		22	U		22	U		16	U	
Bromodichloromethane	14	U		14	U		22	U		22	U		16	U	
Bromoform	14	U		14	U		22	U		22	U		16	U	
Bromomethane	14	U		14	U		22	U		22	U		16	U	
Carbon Disulfide	14	U		14	U		22	U		22	U		16	U	
Carbon Tetrachloride	14	U		14	U		22	U		22	U		16	U	
Chlorobenzene	14	U		1	J	P	22	U		22	U		16	U	
Chloroethane	14	U		14	U		22	U		22	U		16	U	
Chloroform	14	U		14	U		22	U		22	U		16	U	
Chloromethane	14	U		14	U		22	U		22	U		16	U	
cis-1,3-Dichloropropene	14	U		14	U		22	U		22	U		16	U	
Cyclohexane	14	U		14	U		22	U		22	U		16	U	
Dibromochloromethane	14	U		14	U		22	U		22	U		16	U	
Dichlorodifluoromethane	14	U		14	U		22	U		22	U		16	U	
Ethylbenzene	2	J	P	2	J	P	22	U		22	U		16	U	
Isopropylbenzene	2	J	P	2	J	P	22	U		22	U		16	U	
m,p-xylene	4	J	P	4	J	P	22	U		22	U		16	U	
Methyl Acetate	8	J	P	30			31			48			39		
Methyl Tert-butyl Ether	14	U		14	U		22	U		22	U		16	U	
Methylcyclohexane	14	U		14	U		22	U		22	U		16	U	
Methylene Chloride	28	B	B	5	B	B	10	B	B	17	B	B	19	B	B

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-139		
Laboratory ID:	B0301-12A			B0301-13A			B0301-14A			B0301-15A			B0301-16A		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Pct Solid:	75			74			53			52			59		
Duplicate:							WOD-SS-DUP10			WOD-SS-128					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
o-xylene	2	J	P	2	J	P	22	U		22	U		16	U	
Styrene	2	J	P	2	J	P	22	U		22	U		16	U	
Tetrachloroethene	14	U		14	U		22	U		22	U		16	U	
Toluene	14	U		1	J	P	22	U		22	U		16	U	
trans-1,3-Dichloropropene	14	U		14	U		22	U		22	U		16	U	
Trichloroethene	14	U		14	U		22	U		22	U		16	U	
Trichlorofluoromethane	14	U		14	U		22	U		22	U		16	U	
Vinyl Chloride	14	U		14	U		22	U		22	U		16	U	
Xylene (Total)	6	J	P	6	J	P	22	U		22	U		16	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-022003			RB-022003			TB-022003		
Laboratory ID:	B0301-05A			B0301-06A			B0301-01A		
Sample Date:	02/20/03			02/20/03			02/20/03		
Pct Solid:	NA			NA			NA		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U	
Acetone	12	J	C	13	J	C	8	J	C
Benzene	1	U		1	U		1	U	
Bromodichloromethane	1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U	
Chloromethane	1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U	
Ethylbenzene	1	U		1	U		1	U	
Isopropylbenzene	1	U		1	U		1	U	
m,p-xylene	1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U		1	U	
Methylcyclohexane	1	U		1	U		1	U	
Methylene Chloride	4	J	C	4	J	C	14	J	C

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FB-022003**			**RB-022003**			**TB-022003**		
Laboratory ID:	**B0301-05A**			**B0301-06A**			**B0301-01A**		
Sample Date:	**02/20/03**			**02/20/03**			**02/20/03**		
Pct Solid:	**NA**			**NA**			**NA**		
Duplicate:									
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
VOLATILES	**ug/L**			**ug/L**			**ug/L**		
o-xylene	1	U		1	U		1	U	
Styrene	1	U		1	U		1	U	
Tetrachloroethene	1	U		1	U		1	U	
Toluene	1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U	
Xylene (Total)	1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL AND AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0301\ORGANIC\OV_B0301.DBF data retrieved on: 05/23/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-139		
Laboratory ID:	B0301-12B			B0301-13B			B0301-14B			B0301-15B			B0301-16B		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Duplicate:							WOD-SS-DUP10			WOD-SS-128					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
1,1-Biphenyl	430	U		440	U		610	U		620	U		540	U	
2,2-Oxybis(1-chloropropane)	430	U		440	U		610	U		620	U		540	U	
2,4,5-Trichlorophenol	1100	U		1100	U		1500	U		1600	U		1400	U	
2,4,6-Trichlorophenol	430	U		440	U		610	U		620	U		540	U	
2,4-Dichlorophenol	430	U		440	U		610	U		620	U		540	U	
2,4-Dimethylphenol	430	U		440	U		610	U		620	U		540	U	
2,4-Dinitrophenol	1100	U		1100	U		1500	U		1600	U		1400	U	
2,4-Dinitrotoluene	430	U		440	U		610	U		620	U		540	U	
2,6-Dinitrotoluene	430	U		440	U		610	U		620	U		540	U	
2-Chloronaphthalene	430	U		440	U		610	U		620	U		540	U	
2-Chlorophenol	430	U		440	U		610	U		620	U		540	U	
2-Methylnaphthalene	430	U		440	U		610	U		620	U		540	U	
2-Methylphenol	430	U		440	U		610	U		620	U		540	U	
2-Nitroaniline	1100	U		1100	U		1500	U		1600	U		1400	U	
2-Nitrophenol	430	U		440	U		610	U		620	U		540	U	
3,3-Dichlorobenzidine	430	U		440	U		610	U		620	U		540	U	
3-Nitroaniline	1100	UJ	C	1100	UJ	C	1500	UJ	C	1600	UJ	C	1400	UJ	C
4,6-Dinitro-2-methylphenol	1100	U		1100	U		1500	U		1600	U		1400	U	
4-Bromophenyl Phenyl Ether	430	U		440	U		610	U		620	U		540	U	
4-Chloro-3-methylphenol	430	U		440	U		610	U		620	U		540	U	
4-Chloroaniline	430	U		440	U		610	U		620	U		540	U	
4-Chlorophenyl Phenyl Ether	430	U		440	U		610	U		620	U		540	U	
4-Methylphenol	430	U		440	U		610	U		620	U		540	U	
4-Nitroaniline	1100	U		1100	UJ	C	1500	U		1600	UJ	C	1400	U	
4-Nitrophenol	1100	U		1100	U		1500	U		1600	U		1400	U	
Acenaphthene	430	U		440	U		610	U		620	U		540	U	
Acenaphthylene	430	U		440	U		610	U		620	U		540	U	
Acetophenone	430	U		440	U		610	U		620	U		540	U	
Anthracene	430	U		440	U		610	U		620	U		540	U	
Atrazine	430	U		440	U		610	U		620	U		540	U	
Benz(a)anthracene	64	J	P	440	U		610	U		620	U		210	J	P
Benzaldehyde	220	J	CP	250	J	CP	580	J	CP	440	J	CP	540	UJ	C
Benzo(a)pyrene	68	J	P	440	U		610	U		620	U		360	J	P
Benzo(b)fluoranthene	96	J	P	440	U		610	U		620	U		430	J	P
Benzo(g,h,i)perylene	430	U		440	U		610	U		620	U		540	U	
Benzo(k)fluoranthene	430	U		440	U		610	U		620	U		180	J	P
Bis(2-chloroethoxy)methane	430	U		440	U		610	U		620	U		540	U	
Bis(2-chloroethyl)ether	430	U		440	U		610	U		620	U		540	U	
Bis(2-ethylhexyl)phthalate	51	J	P	440	U		82	J	P	620	U		540	U	
Butylbenzylphthalate	430	U		440	U		610	U		620	U		540	U	
Caprolactum	430	U		440	U		610	U		620	U		540	U	
Carbazole	430	U		440	U		610	U		620	U		540	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-139		
Laboratory ID:	B0301-12B			B0301-13B			B0301-14B			B0301-15B			B0301-16B		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Duplicate:							WOD-SS-DUP10			WOD-SS-128					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Chrysene	62	J	P	440	U		610	U		620	U		270	J	P
Di-n-butylphthalate	430	U		440	U		610	U		620	U		540	U	
Di-n-octylphthalate	430	U		440	U		610	U		620	U		540	U	
Dibenz(a,h)anthracene	430	U		440	U		610	U		620	U		540	U	
Dibenzofuran	430	U		440	U		610	U		620	U		540	U	
Diethylphthalate	430	U		440	U		610	U		620	U		540	U	
Dimethylphthalate	430	U		440	U		610	U		620	U		540	U	
Fluoranthene	100	J	P	440	U		610	U		620	U		210	J	P
Fluorene	430	U		440	U		610	U		620	U		540	U	
Hexachlorobenzene	430	U		440	U		610	U		620	U		540	U	
Hexachlorobutadiene	430	U		440	U		610	U		620	U		540	U	
Hexachlorocyclopentadiene	430	U		440	UJ	C	610	U		620	UJ	C	540	U	
Hexachloroethane	430	U		440	U		610	U		620	U		540	U	
Indeno(1,2,3-cd)pyrene	430	U		440	U		610	U		620	U		230	J	P
Isophorone	430	U		440	U		610	U		620	U		540	U	
N-Nitroso-di-n-propylamine	430	U		440	U		610	U		620	U		540	U	
N-Nitrosodiphenylamine (1)	430	U		440	U		610	U		620	U		540	U	
Naphthalene	430	U		440	U		610	U		620	U		540	U	
Nitrobenzene	430	U		440	U		610	U		620	U		540	U	
Pentachlorophenol	1100	U		1100	U		1500	U		1600	U		1400	U	
Phenanthrene	48	J	P	440	U		610	U		620	U		63	J	P
Phenol	430	U		440	U		610	U		620	U		540	U	
Pyrene	110	J	P	440	U		610	U		620	U		250	J	P

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-022103			RB-022103		
Laboratory ID:	B0301-18C			B0301-17C		
Sample Date:	02/21/03			02/21/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L		
1,1-Biphenyl	NA			NA		
2,2-Oxybis(1-chloropropane)	5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U	
2,4-Dichlorophenol	5	U		5	U	
2,4-Dimethylphenol	5	U		5	U	
2,4-Dinitrophenol	20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U	
2-Chloronaphthalene	5	U		5	U	
2-Chlorophenol	5	U		5	U	
2-Methylnaphthalene	5	U		5	U	
2-Methylphenol	5	U		5	U	
2-Nitroaniline	20	U		20	U	
2-Nitrophenol	5	U		5	U	
3,3-Dichlorobenzidine	5	UJ	C	5	UJ	C
3-Nitroaniline	20	UJ	C	20	UJ	C
4,6-Dinitro-2-methylphenol	20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U	
4-Chloroaniline	5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U	
4-Methylphenol	5	U		5	U	
4-Nitroaniline	20	U		20	U	
4-Nitrophenol	20	U		20	U	
Acenaphthene	5	U		5	U	
Acenaphthylene	5	U		5	U	
Acetophenone	NA			NA		
Anthracene	5	U		5	U	
Atrazine	NA			NA		
Benz(a)anthracene	5	U		5	U	
Benzaldehyde	NA			NA		
Benzo(a)pyrene	5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U	
Butylbenzylphthalate	5	U		5	U	
Caprolactum	NA			NA		
Carbazole	NA			NA		

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-022103			RB-022103		
Laboratory ID:	B0301-18C			B0301-17C		
Sample Date:	02/21/03			02/21/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L		
Chrysene	5	U		5	U	
Di-n-butylphthalate	5	U		5	U	
Di-n-octylphthalate	5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U	
Dibenzofuran	5	U		5	U	
Diethylphthalate	5	U		5	U	
Dimethylphthalate	5	U		5	U	
Fluoranthene	5	U		5	U	
Fluorene	5	U		5	U	
Hexachlorobenzene	5	U		5	U	
Hexachlorobutadiene	5	U		5	U	
Hexachlorocyclopentadiene	5	U		5	U	
Hexachloroethane	5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U	
Isophorone	5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U	
Naphthalene	5	U		5	U	
Nitrobenzene	5	U		5	U	
Pentachlorophenol	20	U		20	U	
Phenanthrene	5	U		5	U	
Phenol	5	U		5	U	
Pyrene	5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
NA -- No result is available/applicable for this parameter in this sample.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\BACKGROUND STUDY\WATER VALIDATION\B0301\ORGANIC\OS_B0301.DBF data retrieved on: 04/07/03

DATA SUMMARY OF PCB RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-139			WOD-SS-DUP10		
Laboratory ID:	B0301-12B			B0301-13B			B0301-14B			B0301-16B			B0301-15B		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Duplicate:							WOD-SS-DUP10						WOD-SS-128		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/kg			ug/kg			ug/kg			ug/kg		
Aroclor-1016	43	U		44	U		62	U		56	U		63	U	
Aroclor-1221	43	U		44	U		62	U		56	U		63	U	
Aroclor-1232	43	U		44	U		62	U		56	U		63	U	
Aroclor-1242	43	U		44	U		62	U		56	U		63	U	
Aroclor-1248	43	U		44	U		62	U		56	U		63	U	
Aroclor-1254	43	U		44	U		62	U		56	U		63	U	
Aroclor-1260	43	U		44	U		62	U		56	U		63	U	

DATA SUMMARY OF PCB RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FB-022103**			**RB-022103**		
Laboratory ID:	**B0301-18C**			**B0301-17C**		
Sample Date:	**02/21/03**			**02/21/03**		
Duplicate:						
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
PCBS	**ug/L**			**ug/L**		
Aroclor-1016	1	U		1	U	
Aroclor-1221	1	U		1	U	
Aroclor-1232	1	U		1	U	
Aroclor-1242	1	U		1	U	
Aroclor-1248	1	U		1	U	
Aroclor-1254	1	U		1	U	
Aroclor-1260	1	U		1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\BACKGROUND STUDY\WATER VALIDATION\B0301\ORGANIC\PCB_B0301.DBF data retrieved on: 04/07/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4236

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	300	E
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	28	
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	28	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	2	J
108-88-3	Toluene	14	U
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	4	J
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	14	U
100-41-4	Ethylbenzene	2	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4236

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	4	J
95-47-6	o-Xylene	2	J
1330-20-7	Xylene (Total)	6	J
100-42-5	Styrene	2	J
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	4	J
95-63-6	1,2,4-Trimethylbenzene	4	J
541-73-1	1,3-Dichlorobenzene	3	J
106-46-7	1,4-Dichlorobenzene	3	J
95-50-1	1,2-Dichlorobenzene	3	J
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	8	J
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 4.9 (g/mL) G Lab File ID: V5E4236

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	3.04	13	J
2.		UNKNOWN	3.57	18	J
3.		UNKNOWN	6.89	8	J
4.	66-25-1	HEXANAL	8.75	52	NJ
5.		UNKNOWN	11.07	11	J
6.	275-51-4	AZULENE	14.98	24	NJ
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
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25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V2F5267

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	310	U
74-87-3	Chloromethane	310	U
75-01-4	Vinyl Chloride	310	U
74-83-9	Bromomethane	310	U
75-00-3	Chloroethane	310	U
75-69-4	Trichlorofluoromethane	310	U
75-35-4	1,1-Dichloroethene	310	U
67-64-1	Acetone	410	
75-15-0	Carbon Disulfide	310	U
75-09-2	Methylene Chloride	63	JB
156-60-5	trans-1,2-Dichloroethene	310	U
1634-04-4	Methyl tert-butyl ether	310	U
75-34-3	1,1-Dichloroethane	310	U
78-93-3	2-Butanone	310	U
156-59-2	cis-1,2-Dichloroethene	310	U
67-66-3	Chloroform	310	U
71-55-6	1,1,1-Trichloroethane	310	U
56-23-5	Carbon Tetrachloride	310	U
107-06-2	1,2-Dichloroethane	310	U
71-43-2	Benzene	310	U
79-01-6	Trichloroethene	310	U
78-87-5	1,2-Dichloropropane	310	U
75-27-4	Bromodichloromethane	310	U
10061-01-5	cis-1,3-Dichloropropene	310	U
108-10-1	4-Methyl-2-pentanone	310	U
108-88-3	Toluene	310	U
10061-02-6	trans-1,3-Dichloropropene	310	U
79-00-5	1,1,2-Trichloroethane	310	U
127-18-4	Tetrachloroethene	310	U
591-78-6	2-Hexanone	310	U
124-48-1	Dibromochloromethane	310	U
106-93-4	1,2-Dibromoethane	310	U
108-90-7	Chlorobenzene	310	U
100-41-4	Ethylbenzene	310	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V2F5267

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	310	U
95-47-6	o-Xylene	310	U
1330-20-7	Xylene (Total)	310	U
100-42-5	Styrene	310	U
75-25-2	Bromoform	310	U
98-82-8	Isopropylbenzene	310	U
79-34-5	1,1,2,2-Tetrachloroethane	310	U
108-67-8	1,3,5-Trimethylbenzene	310	U
95-63-6	1,2,4-Trimethylbenzene	310	U
541-73-1	1,3-Dichlorobenzene	310	U
106-46-7	1,4-Dichlorobenzene	310	U
95-50-1	1,2-Dichlorobenzene	310	U
96-12-8	1,2-Dibromo-3-chloropropane	310	U
120-82-1	1,2,4-Trichlorobenzene	310	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	310	U
79-20-9	Methyl Acetate	310	U
110-81-7	Cyclohexane	310	U
108-87-2	Methylcyclohexane	310	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12A

Sample wt/vol: 5.3 (g/mL) G Lab File ID: V2F5267

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 25 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
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20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4239

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	14	U
74-87-3	Chloromethane	14	U
75-01-4	Vinyl Chloride	14	U
74-83-9	Bromomethane	14	U
75-00-3	Chloroethane	14	U
75-69-4	Trichlorofluoromethane	14	U
75-35-4	1,1-Dichloroethene	14	U
67-64-1	Acetone	390	E
75-15-0	Carbon Disulfide	14	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	14	U
1634-04-4	Methyl tert-butyl ether	14	U
75-34-3	1,1-Dichloroethane	14	U
78-93-3	2-Butanone	35	
156-59-2	cis-1,2-Dichloroethene	14	U
67-66-3	Chloroform	14	U
71-55-6	1,1,1-Trichloroethane	14	U
56-23-5	Carbon Tetrachloride	14	U
107-06-2	1,2-Dichloroethane	14	U
71-43-2	Benzene	14	U
79-01-6	Trichloroethene	14	U
78-87-5	1,2-Dichloropropane	14	U
75-27-4	Bromodichloromethane	14	U
10061-01-5	cis-1,3-Dichloropropene	14	U
108-10-1	4-Methyl-2-pentanone	3	J
108-88-3	Toluene	1	J
10061-02-6	trans-1,3-Dichloropropene	14	U
79-00-5	1,1,2-Trichloroethane	14	U
127-18-4	Tetrachloroethene	14	U
591-78-6	2-Hexanone	6	J
124-48-1	Dibromochloromethane	14	U
106-93-4	1,2-Dibromoethane	14	U
108-90-7	Chlorobenzene	1	J
100-41-4	Ethylbenzene	2	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4239

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	4	J
95-47-6	o-Xylene	2	J
1330-20-7	Xylene (Total)	6	J
100-42-5	Styrene	2	J
75-25-2	Bromoform	14	U
98-82-8	Isopropylbenzene	2	J
79-34-5	1,1,2,2-Tetrachloroethane	14	U
108-67-8	1,3,5-Trimethylbenzene	4	J
95-63-6	1,2,4-Trimethylbenzene	5	J
541-73-1	1,3-Dichlorobenzene	3	J
106-46-7	1,4-Dichlorobenzene	3	J
95-50-1	1,2-Dichlorobenzene	2	J
96-12-8	1,2-Dibromo-3-chloropropane	14	U
120-82-1	1,2,4-Trichlorobenzene	14	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	14	U
79-20-9	Methyl Acetate	30	
110-81-7	Cyclohexane	14	U
108-87-2	Methylcyclohexane	14	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4239

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.26	13	J
2.		UNKNOWN	3.04	21	J
3.		UNKNOWN	3.57	26	J
4.	590-86-3	BUTANAL, 3-METHYL-	6.11	9	NJ
5.		UNKNOWN	6.89	7	J
6.	66-25-1	HEXANAL	8.75	48	NJ
7.		UNKNOWN	11.07	9	J
8.		UNKNOWN	12.00	14	J
9.	91-20-3	NAPHTHALENE	14.98	8	NJ
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V2F5268

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	320	U
74-87-3	Chloromethane	320	U
75-01-4	Vinyl Chloride	320	U
74-83-9	Bromomethane	320	U
75-00-3	Chloroethane	320	U
75-69-4	Trichlorofluoromethane	320	U
75-35-4	1,1-Dichloroethene	320	U
67-64-1	Acetone	410	
75-15-0	Carbon Disulfide	320	U
75-09-2	Methylene Chloride	320	U
156-60-5	trans-1,2-Dichloroethene	320	U
1634-04-4	Methyl tert-butyl ether	320	U
75-34-3	1,1-Dichloroethane	320	U
78-93-3	2-Butanone	320	U
156-59-2	cis-1,2-Dichloroethene	320	U
67-66-3	Chloroform	320	U
71-55-6	1,1,1-Trichloroethane	320	U
56-23-5	Carbon Tetrachloride	320	U
107-06-2	1,2-Dichloroethane	320	U
71-43-2	Benzene	320	U
79-01-6	Trichloroethene	320	U
78-87-5	1,2-Dichloropropane	320	U
75-27-4	Bromodichloromethane	320	U
10061-01-5	cis-1,3-Dichloropropene	320	U
108-10-1	4-Methyl-2-pentanone	320	U
108-88-3	Toluene	320	U
10061-02-6	trans-1,3-Dichloropropene	320	U
79-00-5	1,1,2-Trichloroethane	320	U
127-18-4	Tetrachloroethene	320	U
591-78-6	2-Hexanone	320	U
124-48-1	Dibromochloromethane	320	U
106-93-4	1,2-Dibromoethane	320	U
108-90-7	Chlorobenzene	320	U
100-41-4	Ethylbenzene	320	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V2F5268

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	320	U
95-47-6	o-Xylene	320	U
1330-20-7	Xylene (Total)	320	U
100-42-5	Styrene	320	U
75-25-2	Bromoform	320	U
98-82-8	Isopropylbenzene	320	U
79-34-5	1,1,2,2-Tetrachloroethane	320	U
108-67-8	1,3,5-Trimethylbenzene	320	U
95-63-6	1,2,4-Trimethylbenzene	320	U
541-73-1	1,3-Dichlorobenzene	320	U
106-46-7	1,4-Dichlorobenzene	320	U
95-50-1	1,2-Dichlorobenzene	320	U
96-12-8	1,2-Dibromo-3-chloropropane	320	U
120-82-1	1,2,4-Trichlorobenzene	320	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	320	U
79-20-9	Methyl Acetate	320	U
110-81-7	Cyclohexane	320	U
108-87-2	Methylcyclohexane	320	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V2F5268

Level: (low/med) MED Date Received: 02/22/03

% Moisture: not dec. 26 Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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6.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS128

Lab Name: MITKEM CORPORATION Contract: 68W99075

Lab Code: MITKEM Case No.: 31479 SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14A

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4240

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 47 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	22	U
74-87-3	Chloromethane	22	U
75-01-4	Vinyl Chloride	22	U
74-83-9	Bromomethane	22	U
75-00-3	Chloroethane	22	U
75-69-4	Trichlorofluoromethane	22	U
75-35-4	1,1-Dichloroethene	22	U
67-64-1	Acetone	110	
75-15-0	Carbon Disulfide	22	U
75-09-2	Methylene Chloride	10	J
156-60-5	trans-1,2-Dichloroethene	22	U
1634-04-4	Methyl tert-butyl ether	22	U
75-34-3	1,1-Dichloroethane	22	U
78-93-3	2-Butanone	22	U
156-59-2	cis-1,2-Dichloroethene	22	U
67-66-3	Chloroform	22	U
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
107-06-2	1,2-Dichloroethane	22	U
71-43-2	Benzene	22	U
79-01-6	Trichloroethene	22	U
78-87-5	1,2-Dichloropropane	22	U
75-27-4	Bromodichloromethane	22	U
10061-01-5	cis-1,3-Dichloropropene	22	U
108-10-1	4-Methyl-2-pentanone	22	U
108-88-3	Toluene	22	U
10061-02-6	trans-1,3-Dichloropropene	22	U
79-00-5	1,1,2-Trichloroethane	22	U
127-18-4	Tetrachloroethene	22	U
591-78-6	2-Hexanone	22	U
124-48-1	Dibromochloromethane	22	U
106-93-4	1,2-Dibromoethane	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
WODSS128

Lab Name: MITKEM CORPORATION Contract: 68W99075

Lab Code: MITKEM Case No.: 31479 SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14A

Sample wt/vol: 4.2 (g/mL) G Lab File ID: V5E4240

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 47 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	22	U
95-47-6	o-Xylene	22	U
1330-20-7	Xylene (Total)	22	U
100-42-5	Styrene	22	U
75-25-2	Bromoform	22	U
98-82-8	Isopropylbenzene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-67-8	1,3,5-Trimethylbenzene	22	U
95-63-6	1,2,4-Trimethylbenzene	22	U
541-73-1	1,3-Dichlorobenzene	22	U
106-46-7	1,4-Dichlorobenzene	22	U
95-50-1	1,2-Dichlorobenzene	22	U
96-12-8	1,2-Dibromo-3-chloropropane	22	U
120-82-1	1,2,4-Trichlorobenzene	22	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	22	U
79-20-9	Methyl Acetate	31	
110-81-7	Cyclohexane	22	U
108-87-2	Methylcyclohexane	22	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15A

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E4241

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 48 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	22	U
74-87-3	Chloromethane	22	U
75-01-4	Vinyl Chloride	22	U
74-83-9	Bromomethane	22	U
75-00-3	Chloroethane	22	U
75-69-4	Trichlorofluoromethane	22	U
75-35-4	1,1-Dichloroethene	22	U
67-64-1	Acetone	170	
75-15-0	Carbon Disulfide	22	U
75-09-2	Methylene Chloride	17	J
156-60-5	trans-1,2-Dichloroethene	22	U
1634-04-4	Methyl tert-butyl ether	22	U
75-34-3	1,1-Dichloroethane	22	U
78-93-3	2-Butanone	23	
156-59-2	cis-1,2-Dichloroethene	22	U
67-66-3	Chloroform	22	U
71-55-6	1,1,1-Trichloroethane	22	U
56-23-5	Carbon Tetrachloride	22	U
107-06-2	1,2-Dichloroethane	22	U
71-43-2	Benzene	22	U
79-01-6	Trichloroethene	22	U
78-87-5	1,2-Dichloropropane	22	U
75-27-4	Bromodichloromethane	22	U
10061-01-5	cis-1,3-Dichloropropene	22	U
108-10-1	4-Methyl-2-pentanone	22	U
108-88-3	Toluene	22	U
10061-02-6	trans-1,3-Dichloropropene	22	U
79-00-5	1,1,2-Trichloroethane	22	U
127-18-4	Tetrachloroethene	22	U
591-78-6	2-Hexanone	22	U
124-48-1	Dibromochloromethane	22	U
106-93-4	1,2-Dibromoethane	22	U
108-90-7	Chlorobenzene	22	U
100-41-4	Ethylbenzene	22	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15A

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E4241

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 48 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	22	U
95-47-6	o-Xylene	22	U
1330-20-7	Xylene (Total)	22	U
100-42-5	Styrene	22	U
75-25-2	Bromoform	22	U
98-82-8	Isopropylbenzene	22	U
79-34-5	1,1,2,2-Tetrachloroethane	22	U
108-67-8	1,3,5-Trimethylbenzene	22	U
95-63-6	1,2,4-Trimethylbenzene	22	U
541-73-1	1,3-Dichlorobenzene	22	U
106-46-7	1,4-Dichlorobenzene	22	U
95-50-1	1,2-Dichlorobenzene	22	U
96-12-8	1,2-Dibromo-3-chloropropane	22	U
120-82-1	1,2,4-Trichlorobenzene	22	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	22	U
79-20-9	Methyl Acetate	48	
110-81-7	Cyclohexane	22	U
108-87-2	Methylcyclohexane	22	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15A

Sample wt/vol: 4.4 (g/mL) G Lab File ID: V5E4241

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 48 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.75	72	J
2.		UNKNOWN	11.06	15	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E4242

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 41 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	16	U
74-87-3	Chloromethane	16	U
75-01-4	Vinyl Chloride	16	U
74-83-9	Bromomethane	16	U
75-00-3	Chloroethane	16	U
75-69-4	Trichlorofluoromethane	16	U
75-35-4	1,1-Dichloroethene	16	U
67-64-1	Acetone	180	
75-15-0	Carbon Disulfide	16	U
75-09-2	Methylene Chloride	19	
156-60-5	trans-1,2-Dichloroethene	16	U
1634-04-4	Methyl tert-butyl ether	16	U
75-34-3	1,1-Dichloroethane	16	U
78-93-3	2-Butanone	21	
156-59-2	cis-1,2-Dichloroethene	16	U
67-66-3	Chloroform	16	U
71-55-6	1,1,1-Trichloroethane	16	U
56-23-5	Carbon Tetrachloride	16	U
107-06-2	1,2-Dichloroethane	16	U
71-43-2	Benzene	16	U
79-01-6	Trichloroethene	16	U
78-87-5	1,2-Dichloropropane	16	U
75-27-4	Bromodichloromethane	16	U
10061-01-5	cis-1,3-Dichloropropene	16	U
108-10-1	4-Methyl-2-pentanone	16	U
108-88-3	Toluene	16	U
10061-02-6	trans-1,3-Dichloropropene	16	U
79-00-5	1,1,2-Trichloroethane	16	U
127-18-4	Tetrachloroethene	16	U
591-78-6	2-Hexanone	16	U
124-48-1	Dibromochloromethane	16	U
106-93-4	1,2-Dibromoethane	16	U
108-90-7	Chlorobenzene	16	U
100-41-4	Ethylbenzene	16	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E4242

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 41 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	16	U
95-47-6	o-Xylene	16	U
1330-20-7	Xylene (Total)	16	U
100-42-5	Styrene	16	U
75-25-2	Bromoform	16	U
98-82-8	Isopropylbenzene	16	U
79-34-5	1,1,2,2-Tetrachloroethane	16	U
108-67-8	1,3,5-Trimethylbenzene	16	U
95-63-6	1,2,4-Trimethylbenzene	16	U
541-73-1	1,3-Dichlorobenzene	16	U
106-46-7	1,4-Dichlorobenzene	16	U
95-50-1	1,2-Dichlorobenzene	16	U
96-12-8	1,2-Dibromo-3-chloropropane	16	U
120-82-1	1,2,4-Trichlorobenzene	16	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	16	U
79-20-9	Methyl Acetate	39	
110-81-7	Cyclohexane	16	U
108-87-2	Methylcyclohexane	16	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16A

Sample wt/vol: 5.2 (g/mL) G Lab File ID: V5E4242

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. 41 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.89	13	J
2.	66-25-1	HEXANAL	8.76	100	NJ
3.		UNKNOWN	11.07	16	J
4.					
5.					
6.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5184

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	8	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	4	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5184

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5184

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5183

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	6	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5183

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5183

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5178

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	8	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	14	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5178

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5178

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: not dec. _____ Date Analyzed: 02/28/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2349

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)Ether	430	U
95-57-8	2-Chlorophenol	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitroso-di-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
120-83-2	2,4-Dichlorophenol	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-Methylphenol	430	U
91-57-6	2-Methylnaphthalene	430	U
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	430	U
208-96-8	Acenaphthylene	430	U
606-20-2	2,6-Dinitrotoluene	430	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2349

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl-phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	430	U
101-55-3	4-Bromophenyl-phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	48	J
120-12-7	Anthracene	430	U
86-74-8	Carbazole	430	U
84-74-2	Di-n-butylphthalate	430	U
206-44-0	Fluoranthene	100	J
129-00-0	Pyrene	110	J
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	64	J
218-01-9	Chrysene	62	J
117-81-7	bis(2-Ethylhexyl)phthalate	51	J
117-84-0	Di-n-octylphthalate	430	U
205-99-2	Benzo(b)fluoranthene	96	J
207-08-9	Benzo(k)fluoranthene	430	U
50-32-8	Benzo(a)pyrene	68	J
193-39-5	Indeno(1,2,3-cd)pyrene	430	U
53-70-3	Dibenzo(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	430	U
92-52-4	1,1'-Biphenyl	430	U
98-86-2	Acetophenone	430	U
1912-24-9	Atrazine	430	U
100-52-7	Benzaldehyde	220	J
105-60-2	Caprolactum	430	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2349

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 25 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.12	8400	J
2.	294-62-2	CYCLODODECANE	15.66	270	NJ
3.		UNKNOWN	19.82	940	J
4.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.27	860	NJ
5.		UNKNOWN	23.90	730	J
6.		UNKNOWN	24.05	210	J
7.	0-00-0	1-HEXACOSANAL	24.18	520	NJ
8.	630-07-9	PENTATRIACONTANE	24.53	1400	NJ
9.	14167-59-0	TETRATRIACONTANE	25.20	180	NJ
10.		UNKNOWN	25.57	310	J
11.	112-95-8	EICOSANE	26.00	3700	NJ
12.		UNKNOWN	26.16	210	J
13.		UNKNOWN	27.45	260	J
14.		UNKNOWN	27.88	350	J
15.	14167-59-0	TETRATRIACONTANE	27.99	1100	NJ
16.		UNKNOWN	28.81	250	J
17.	1058-61-3	STIGMAST-4-EN-3-ONE	30.62	740	NJ
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2369

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)Ether	440	U
95-57-8	2-Chlorophenol	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitroso-di-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
120-83-2	2,4-Dichlorophenol	440	U
91-20-3	Naphthalene	440	U
106-47-8	4-Chloroaniline	440	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-Methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	1100	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	1100	U
131-11-3	Dimethylphthalate	440	U
208-96-8	Acenaphthylene	440	U
606-20-2	2,6-Dinitrotoluene	440	U
99-09-2	3-Nitroaniline	1100	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	1100	U
100-02-7	4-Nitrophenol	1100	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2369

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl-phenylether	440	U
86-73-7	Fluorene	440	U
100-01-6	4-Nitroaniline	1100	U
534-52-1	4,6-Dinitro-2-methylphenol	1100	U
86-30-6	N-Nitrosodiphenylamine (1)	440	U
101-55-3	4-Bromophenyl-phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	1100	U
85-01-8	Phenanthrene	440	U
120-12-7	Anthracene	440	U
86-74-8	Carbazole	440	U
84-74-2	Di-n-butylphthalate	440	U
206-44-0	Fluoranthene	440	U
129-00-0	Pyrene	440	U
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(a)anthracene	440	U
218-01-9	Chrysene	440	U
117-81-7	bis(2-Ethylhexyl)phthalate	440	U
117-84-0	Di-n-octylphthalate	440	U
205-99-2	Benzo(b)fluoranthene	440	U
207-08-9	Benzo(k)fluoranthene	440	U
50-32-8	Benzo(a)pyrene	440	U
193-39-5	Indeno(1,2,3-cd)pyrene	440	U
53-70-3	Dibenzo(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	440	U
92-52-4	1,1'-Biphenyl	440	U
98-86-2	Acetophenone	440	U
1912-24-9	Atrazine	440	U
100-52-7	Benzaldehyde	250	J
105-60-2	Caprolactum	440	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2369

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 26 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57-10-3	HEXADECANOIC ACID	17.98	260	NJ
2.		UNKNOWN	19.75	790	J
3.	123-95-5	OCTADECANOIC ACID, BUTYL EST	21.20	750	NJ
4.		UNKNOWN	23.83	510	J
5.		UNKNOWN	23.98	240	J
6.		UNKNOWN	26.04	330	J
7.	59-02-9	VITAMIN E	26.35	460	NJ
8.		UNKNOWN	28.64	610	J
9.		UNKNOWN	30.39	460	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS128

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2353

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	610	U
111-44-4	bis(2-Chloroethyl)Ether	610	U
95-57-8	2-Chlorophenol	610	U
95-48-7	2-Methylphenol	610	U
108-60-1	2,2'-oxybis(1-Chloropropane)	610	U
106-44-5	4-Methylphenol	610	U
621-64-7	N-Nitroso-di-n-propylamine	610	U
67-72-1	Hexachloroethane	610	U
98-95-3	Nitrobenzene	610	U
78-59-1	Isophorone	610	U
88-75-5	2-Nitrophenol	610	U
105-67-9	2,4-Dimethylphenol	610	U
120-83-2	2,4-Dichlorophenol	610	U
91-20-3	Naphthalene	610	U
106-47-8	4-Chloroaniline	610	U
111-91-1	bis(2-Chloroethoxy)methane	610	U
87-68-3	Hexachlorobutadiene	610	U
59-50-7	4-Chloro-3-Methylphenol	610	U
91-57-6	2-Methylnaphthalene	610	U
77-47-4	Hexachlorocyclopentadiene	610	U
88-06-2	2,4,6-Trichlorophenol	610	U
95-95-4	2,4,5-Trichlorophenol	1500	U
91-58-7	2-Chloronaphthalene	610	U
88-74-4	2-Nitroaniline	1500	U
131-11-3	Dimethylphthalate	610	U
208-96-8	Acenaphthylene	610	U
606-20-2	2,6-Dinitrotoluene	610	U
99-09-2	3-Nitroaniline	1500	U
83-32-9	Acenaphthene	610	U
51-28-5	2,4-Dinitrophenol	1500	U
100-02-7	4-Nitrophenol	1500	U
132-64-9	Dibenzofuran	610	U
121-14-2	2,4-Dinitrotoluene	610	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS128

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2353

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	610	U
7005-72-3	4-Chlorophenyl-phenylether	610	U
86-73-7	Fluorene	610	U
100-01-6	4-Nitroaniline	1500	U
534-52-1	4,6-Dinitro-2-methylphenol	1500	U
86-30-6	N-Nitrosodiphenylamine (1)	610	U
101-55-3	4-Bromophenyl-phenylether	610	U
118-74-1	Hexachlorobenzene	610	U
87-86-5	Pentachlorophenol	1500	U
85-01-8	Phenanthrene	610	U
120-12-7	Anthracene	610	U
86-74-8	Carbazole	610	U
84-74-2	Di-n-butylphthalate	610	U
206-44-0	Fluoranthene	610	U
129-00-0	Pyrene	610	U
85-68-7	Butylbenzylphthalate	610	U
91-94-1	3,3'-Dichlorobenzidine	610	U
56-55-3	Benzo(a)anthracene	610	U
218-01-9	Chrysene	610	U
117-81-7	bis(2-Ethylhexyl)phthalate	82	J
117-84-0	Di-n-octylphthalate	610	U
205-99-2	Benzo(b)fluoranthene	610	U
207-08-9	Benzo(k)fluoranthene	610	U
50-32-8	Benzo(a)pyrene	610	U
193-39-5	Indeno(1,2,3-cd)pyrene	610	U
53-70-3	Dibenzo(a,h)anthracene	610	U
191-24-2	Benzo(g,h,i)perylene	610	U
92-52-4	1,1'-Biphenyl	610	U
98-86-2	Acetophenone	610	U
1912-24-9	Atrazine	610	U
100-52-7	Benzaldehyde	580	J
105-60-2	Caprolactum	610	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS128

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2353

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	16.98	640	J
2.		UNKNOWN	17.21	280	J
3.		UNKNOWN	17.41	360	J
4.		UNKNOWN	17.91	520	J
5.	57-10-3	HEXADECANOIC ACID	18.07	1100	NJ
6.		UNKNOWN	19.41	510	J
7.		UNKNOWN	19.52	820	J
8.		UNKNOWN	19.83	1400	J
9.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.28	1200	NJ
10.	124-25-4	TETRADECANAL	21.61	320	NJ
11.		UNKNOWN	22.05	380	J
12.		UNKNOWN	23.91	1300	J
13.		UNKNOWN	24.05	550	J
14.		UNKNOWN	25.00	430	J
15.		UNKNOWN	26.16	490	J
16.	59-02-9	VITAMIN E	26.47	960	NJ
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1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2370

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 48 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	620	U
111-44-4	bis(2-Chloroethyl)Ether	620	U
95-57-8	2-Chlorophenol	620	U
95-48-7	2-Methylphenol	620	U
108-60-1	2,2'-oxybis(1-Chloropropane)	620	U
106-44-5	4-Methylphenol	620	U
621-64-7	N-Nitroso-di-n-propylamine	620	U
67-72-1	Hexachloroethane	620	U
98-95-3	Nitrobenzene	620	U
78-59-1	Isophorone	620	U
88-75-5	2-Nitrophenol	620	U
105-67-9	2,4-Dimethylphenol	620	U
120-83-2	2,4-Dichlorophenol	620	U
91-20-3	Naphthalene	620	U
106-47-8	4-Chloroaniline	620	U
111-91-1	bis(2-Chloroethoxy)methane	620	U
87-68-3	Hexachlorobutadiene	620	U
59-50-7	4-Chloro-3-Methylphenol	620	U
91-57-6	2-Methylnaphthalene	620	U
77-47-4	Hexachlorocyclopentadiene	620	U
88-06-2	2,4,6-Trichlorophenol	620	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	620	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	620	U
208-96-8	Acenaphthylene	620	U
606-20-2	2,6-Dinitrotoluene	620	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	620	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	620	U
121-14-2	2,4-Dinitrotoluene	620	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2370

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 48 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	620	U
7005-72-3	4-Chlorophenyl-phenylether	620	U
86-73-7	Fluorene	620	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	620	U
101-55-3	4-Bromophenyl-phenylether	620	U
118-74-1	Hexachlorobenzene	620	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	620	U
120-12-7	Anthracene	620	U
86-74-8	Carbazole	620	U
84-74-2	Di-n-butylphthalate	620	U
206-44-0	Fluoranthene	620	U
129-00-0	Pyrene	620	U
85-68-7	Butylbenzylphthalate	620	U
91-94-1	3,3'-Dichlorobenzidine	620	U
56-55-3	Benzo(a)anthracene	620	U
218-01-9	Chrysene	620	U
117-81-7	bis(2-Ethylhexyl)phthalate	620	U
117-84-0	Di-n-octylphthalate	620	U
205-99-2	Benzo(b)fluoranthene	620	U
207-08-9	Benzo(k)fluoranthene	620	U
50-32-8	Benzo(a)pyrene	620	U
193-39-5	Indeno(1,2,3-cd)pyrene	620	U
53-70-3	Dibenzo(a,h)anthracene	620	U
191-24-2	Benzo(g,h,i)perylene	620	U
92-52-4	1,1'-Biphenyl	620	U
98-86-2	Acetophenone	620	U
1912-24-9	Atrazine	620	U
100-52-7	Benzaldehyde	440	J
105-60-2	Caprolactum	620	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15B

Sample wt/vol: 30.5 (g/mL) G Lab File ID: S3C2370

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 48 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/16/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 9

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57-10-3	HEXADECANOIC ACID	17.98	340	NJ
2.		UNKNOWN	19.33	380	J
3.		UNKNOWN	19.76	1200	J
4.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.21	1100	NJ
5.		UNKNOWN	21.53	270	J
6.		UNKNOWN	21.99	350	J
7.		UNKNOWN	23.30	410	J
8.		UNKNOWN	23.83	870	J
9.		UNKNOWN	31.93	470	J
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11.					
12.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16B

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S3C2355

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	540	U
111-44-4	bis(2-Chloroethyl)Ether	540	U
95-57-8	2-Chlorophenol	540	U
95-48-7	2-Methylphenol	540	U
108-60-1	2,2'-oxybis(1-Chloropropane)	540	U
106-44-5	4-Methylphenol	540	U
621-64-7	N-Nitroso-di-n-propylamine	540	U
67-72-1	Hexachloroethane	540	U
98-95-3	Nitrobenzene	540	U
78-59-1	Isophorone	540	U
88-75-5	2-Nitrophenol	540	U
105-67-9	2,4-Dimethylphenol	540	U
120-83-2	2,4-Dichlorophenol	540	U
91-20-3	Naphthalene	540	U
106-47-8	4-Chloroaniline	540	U
111-91-1	bis(2-Chloroethoxy)methane	540	U
87-68-3	Hexachlorobutadiene	540	U
59-50-7	4-Chloro-3-Methylphenol	540	U
91-57-6	2-Methylnaphthalene	540	U
77-47-4	Hexachlorocyclopentadiene	540	U
88-06-2	2,4,6-Trichlorophenol	540	U
95-95-4	2,4,5-Trichlorophenol	1400	U
91-58-7	2-Chloronaphthalene	540	U
88-74-4	2-Nitroaniline	1400	U
131-11-3	Dimethylphthalate	540	U
208-96-8	Acenaphthylene	540	U
606-20-2	2,6-Dinitrotoluene	540	U
99-09-2	3-Nitroaniline	1400	U
83-32-9	Acenaphthene	540	U
51-28-5	2,4-Dinitrophenol	1400	U
100-02-7	4-Nitrophenol	1400	U
132-64-9	Dibenzofuran	540	U
121-14-2	2,4-Dinitrotoluene	540	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16B

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S3C2355

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	540	U
7005-72-3	4-Chlorophenyl-phenylether	540	U
86-73-7	Fluorene	540	U
100-01-6	4-Nitroaniline	1400	U
534-52-1	4,6-Dinitro-2-methylphenol	1400	U
86-30-6	N-Nitrosodiphenylamine (1)	540	U
101-55-3	4-Bromophenyl-phenylether	540	U
118-74-1	Hexachlorobenzene	540	U
87-86-5	Pentachlorophenol	1400	U
85-01-8	Phenanthrene	63	J
120-12-7	Anthracene	540	U
86-74-8	Carbazole	540	U
84-74-2	Di-n-butylphthalate	540	U
206-44-0	Fluoranthene	210	J
129-00-0	Pyrene	250	J
85-68-7	Butylbenzylphthalate	540	U
91-94-1	3,3'-Dichlorobenzidine	540	U
56-55-3	Benzo(a)anthracene	210	J
218-01-9	Chrysene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	540	U
117-84-0	Di-n-octylphthalate	540	U
205-99-2	Benzo(b)fluoranthene	430	J
207-08-9	Benzo(k)fluoranthene	180	J
50-32-8	Benzo(a)pyrene	360	J
193-39-5	Indeno(1,2,3-cd)pyrene	230	J
53-70-3	Dibenzo(a,h)anthracene	540	U
191-24-2	Benzo(g,h,i)perylene	540	U
92-52-4	1,1'-Biphenyl	540	U
98-86-2	Acetophenone	540	U
1912-24-9	Atrazine	540	U
100-52-7	Benzaldehyde	540	U
105-60-2	Caprolactum	540	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16B

Sample wt/vol: 30.9 (g/mL) G Lab File ID: S3C2355

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: 41 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 12

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	17.21	230	J
2.	57-10-3	HEXADECANOIC ACID	18.06	360	NJ
3.		UNKNOWN	19.83	1000	J
4.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.28	910	NJ
5.		UNKNOWN	21.61	250	J
6.		UNKNOWN	22.89	240	J
7.		UNKNOWN	23.92	1100	J
8.		UNKNOWN	24.06	380	J
9.	2765-11-9	PENTADECANAL-	24.19	350	NJ
10.		UNKNOWN	26.17	470	J
11.		UNKNOWN	27.97	7200	J
12.	1058-61-3	STIGMAST-4-EN-3-ONE	30.65	1000	NJ
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2338

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2338

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2338

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.82	10	J
2.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.27	10	NJ
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2337

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2337

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17C

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2337

Level: (low/med) LOW Date Received: 02/22/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/27/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	19.82	8	J
2.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.28	9	NJ
3.					
4.					
5.					
6.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WODSS126

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-12B

Sample wt/vol: 30.7 (g/mL) G Lab File ID: E1D9622F

% Moisture: 25 decanted: (Y/N) N Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	43	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WODSS127

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-13B

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9625F

% Moisture: 26 decanted: (Y/N) N Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	44	U
11141-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	44	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WODSS128

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-14B

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9626F

% Moisture: 47 decanted: (Y/N) N Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	62	U
11104-28-2	Aroclor-1221	62	U
11141-16-5	Aroclor-1232	62	U
53469-21-9	Aroclor-1242	62	U
12672-29-6	Aroclor-1248	62	U
11097-69-1	Aroclor-1254	62	U
11096-82-5	Aroclor-1260	62	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-15B

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9627F

% Moisture: 48 decanted: (Y/N) N Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	63	U
11104-28-2	Aroclor-1221	63	U
11141-16-5	Aroclor-1232	63	U
53469-21-9	Aroclor-1242	63	U
12672-29-6	Aroclor-1248	63	U
11097-69-1	Aroclor-1254	63	U
11096-82-5	Aroclor-1260	63	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WODSS139

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: B0301-16B

Sample wt/vol: 30.4 (g/mL) G Lab File ID: E1D9628F

% Moisture: 41 decanted: (Y/N) N Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	56	U
11104-28-2	Aroclor-1221	56	U
11141-16-5	Aroclor-1232	56	U
53469-21-9	Aroclor-1242	56	U
12672-29-6	Aroclor-1248	56	U
11097-69-1	Aroclor-1254	56	U
11096-82-5	Aroclor-1260	56	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-18C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9560F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-022103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) WATER Lab Sample ID: B0301-17C

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9559F

% Moisture: _____ decanted: (Y/N)___ Date Received: 02/22/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:02/27/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 02/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX C

Support Documentation

MITKEM CORPORATION
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Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0301
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King Of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSIS: 40ml VOA vial HCl	TCL VOC+MTBE 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TAL Pest 500ml poly HNO3	TAL Metals 500ml poly HNO3 Dissolved Metals	TCL Pest/PCB 8 oz Amber Glass Wide Mouth Encore Sample	TCL VOC 40z Amber Glass Wide Mouth	TCL SVOC+PCB 40z Amber Glass Wide Mouth	TAL Metals+Hg 40z Amber Glass Wide Mouth	TAL Hg Mercuric Chloride 60z Amber Glass Wide Mouth Glass Stopper		COMMENTS
TB-022603	2/20/03 0730		X	X			-01	2	2	+	+	+	4pm 2/21/03							Trip Blank
MW3R	2/20/03 0955		X	X			-02	5	2	1	1	1								
WFF9-GW1	2/20/03 1305		X	X			-03	5	2	1	1	1								
MW1	2/20/03 1630		X	X			-04	5	2	1	1	1								
FB-022603	2/20/03 1725		X	X			-05	5	2	1	1	1								Rinsate Blank
RB-022603	2/20/03 1710		X	X			-06	5	2	1	1	1								Field Blank
MW3R-F	2/20/03 0955		X	X			-07	1					1							
WFF9-GW1-F	2/20/03 1305		X	X			-08	1					1							
MW1-F	2/20/03 1630		X	X			-09	1					1							
FB-022003-F	2/20/03 1725		X	X			-10	1					1							
RB-022003-F	2/20/03 1715		X	X			-11	1					1							
WOD-SS-126	2/21/03 0930		X		X		-12	16						9	2	2	2	1		DO MS/MSD

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Morgan	2/21/03 1800	Tim Shulman	2.22.03 0930
		/		/
		/		/

ADDITIONAL REMARKS: shipped via Federal Express Airbill NO 8286 8464 5278 Blank water was provided by the laboratory

COOLER TEMP: 6°C

5100

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #:
NAME: Gavth Clem	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 648	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	Sprium Enviro sampler	TCL VOC 40z Amber glass w/Teflon	TCL SVOC 40z Amber glass w/Teflon	TAL metals 40z Amber glass w/Teflon	TOC 8/0 moisture 60z Amber glass w/Teflon	TCL VOC 40ml VOA vial HCl	TCL VOC 40ml VOA vial HCl	TOC 1 Liter Amber glass	TCL SVOC 1 Liter Amber glass	TCL PCB 500ml poly HNO3	TAL metals	COMMENTS
WOD-SS-127	2/21/03 / 0958		X		X		-13	7	3	1	1	1	1							
WOD-SS-128	2/21/03 / 1012		X		X		-14	7	3	1	1	1	1							
WOD-SS-Dup10	2/21/03 / 1112		X		X		-15	7	3	1	1	1	1							
WOD-SS-139	2/21/03 / 1102		X		X		-16	7	3	1	1	1	1							
RB-022103	2/21/03 / 1210		X	X			-17	7						2	2	1	1	1		Rinsate Blank
FB-022103	2/21/03 / 1220		X	X			-18	7						2	2	1	1	1		Field Blank
	/																			
	/																			
	/																			
	/																			
	/																			
	/																			

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	2/21/03 / 1800	Tim Shuckman	2/22/03 0930	Shipped via Federal Express Airbill NO 8286 8464 5278 Laboratory supplied blank water	6 °C
		/		/		
		/		/		

0016

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous and five soil samples that were collected on February 20, 2003, and received at Mitkem on February 21, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike. Replicate RPDs were within the QC limits with the exception of methylene chloride.

Sample analysis: due to high concentration of target analytes, samples WOD-SS-126 and WOD-SS-127 were analyzed using medium level analysis. The matrix spike and matrix spike duplicate for WOD-SS-126 was analyzed using low-level analysis. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone, 3-nitroaniline, 4-nitroaniline, N-nitrosodiphenylamine and 3,3'-dichlorobenzidine in S3RLCSD and high recovery of 2,2'-oxybis (1-chloroproane), N-nitrosdiphenylamine and carbazole in S3SLCS. Replicate RPDs were within the QC limits with the exception of 2,4-dinitrophenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of low recovery of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception 4-nitroaniline and fluoranthene.

Sample analysis: no other unusual observation was made for the analysis.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in both columns for samples MW3R and WFF9-GW1.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's of associated samples. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-126. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: V2B0305B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V2F5263

Level: (low/med) MED Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: 5(mL) Soil Aliquot Volume: 100.0(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	250	U
74-87-3	Chloromethane	250	U
75-01-4	Vinyl Chloride	250	U
74-83-9	Bromomethane	250	U
75-00-3	Chloroethane	250	U
75-69-4	Trichlorofluoromethane	250	U
75-35-4	1,1-Dichloroethene	250	U
67-64-1	Acetone	250	U
75-15-0	Carbon Disulfide	250	U
75-09-2	Methylene Chloride	58	J
156-60-5	trans-1,2-Dichloroethene	250	U
1634-04-4	Methyl tert-butyl ether	250	U
75-34-3	1,1-Dichloroethane	250	U
78-93-3	2-Butanone	250	U
156-59-2	cis-1,2-Dichloroethene	250	U
67-66-3	Chloroform	250	U
71-55-6	1,1,1-Trichloroethane	250	U
56-23-5	Carbon Tetrachloride	250	U
107-06-2	1,2-Dichloroethane	250	U
71-43-2	Benzene	250	U
79-01-6	Trichloroethene	250	U
78-87-5	1,2-Dichloropropane	250	U
75-27-4	Bromodichloromethane	250	U
10061-01-5	cis-1,3-Dichloropropene	250	U
108-10-1	4-Methyl-2-pentanone	250	U
108-88-3	Toluene	250	U
10061-02-6	trans-1,3-Dichloropropene	250	U
79-00-5	1,1,2-Trichloroethane	250	U
127-18-4	Tetrachloroethene	250	U
591-78-6	2-Hexanone	250	U
124-48-1	Dibromochloromethane	250	U
106-93-4	1,2-Dibromoethane	250	U
108-90-7	Chlorobenzene	250	U
100-41-4	Ethylbenzene	250	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: V5B0303A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4234

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	8	NJ
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix: (soil/water) SOIL Lab Sample ID: V5B0305A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4303

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/05/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.372	0.293	0.292	0.298	0.284	0.308	11.7
Chloromethane	*	0.520	0.413	0.405	0.410	0.381	0.426	12.7*
Vinyl Chloride		0.388	0.309	0.310	0.313	0.294	0.323	11.5
Bromomethane		0.248	0.188	0.184	0.155	0.133	0.182	23.8
Chloroethane		0.208	0.158	0.162	0.146	0.132	0.161	17.6
Trichlorofluoromethane		0.341	0.274	0.278	0.287	0.285	0.293	9.3
1,1-Dichloroethene		0.225	0.211	0.218	0.215	0.205	0.215	3.5
Acetone		0.127	0.075	0.061	0.064	0.055	0.076	38.3
Carbon Disulfide		0.904	0.711	0.721	0.718	0.691	0.749	11.7
Methylene Chloride		0.272	0.235	0.233	0.225	0.219	0.237	8.7
trans-1,2-Dichloroethene		0.245	0.236	0.237	0.229	0.220	0.233	4.0
Methyl tert-butyl ether		0.664	0.536	0.556	0.536	0.495	0.557	11.4
1,1-Dichloroethane	*	0.489	0.486	0.495	0.484	0.471	0.485	1.8*
2-Butanone		0.132	0.108	0.100	0.099	0.092	0.106	14.4
cis-1,2-Dichloroethene		0.290	0.277	0.277	0.273	0.259	0.275	4.0
Chloroform		0.448	0.447	0.458	0.448	0.429	0.446	2.4
1,1,1-Trichloroethane		0.369	0.361	0.373	0.362	0.355	0.364	1.9
Carbon Tetrachloride		0.301	0.297	0.311	0.307	0.302	0.304	1.8
1,2-Dichloroethane		0.314	0.316	0.323	0.307	0.284	0.309	4.9
Benzene		1.017	1.006	1.020	0.982	0.900	0.985	5.0
Trichloroethene		0.245	0.248	0.244	0.248	0.240	0.245	1.4
1,2-Dichloropropane		0.249	0.249	0.254	0.242	0.228	0.244	4.2
Bromodichloromethane		0.336	0.339	0.348	0.340	0.335	0.340	1.6
cis-1,3-Dichloropropene		0.403	0.414	0.430	0.423	0.415	0.417	2.5
4-Methyl-2-pentanone		0.315	0.206	0.204	0.206	0.198	0.226	22.1
Toluene		0.985	0.992	1.018	0.986	0.908	0.978	4.2
trans-1,3-Dichloropropene		0.332	0.352	0.378	0.368	0.359	0.358	4.8
1,1,2-Trichloroethane		0.196	0.200	0.200	0.195	0.192	0.197	1.6
Tetrachloroethene		0.319	0.310	0.296	0.305	0.296	0.305	3.2
2-Hexanone		0.242	0.193	0.195	0.208	0.202	0.208	9.6
Dibromochloromethane		0.364	0.360	0.352	0.358	0.358	0.358	1.2
1,2-Dibromoethane		0.303	0.315	0.311	0.322	0.319	0.314	2.3
Chlorobenzene	*	0.955	0.950	0.941	0.897	0.809	0.910	6.7*
Ethylbenzene		0.486	0.494	0.497	0.488	0.447	0.482	4.2
m,p-Xylene		0.608	0.614	0.603	0.563	0.521	0.582	6.8
o-Xylene		0.596	0.599	0.605	0.568	0.522	0.578	5.9
Xylene (Total)		0.604	0.609	0.603	0.565	0.521	0.580	6.5

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: V2 Calibration Date: 02/28/03 Time: 1000

Lab File ID: V2F5171 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.308	0.256	0.01	16.9	20.0	
Chloromethane	0.426	0.392	0.1	8.0	20.0	
Vinyl Chloride	0.323	0.307	0.01	5.0	20.0	
Bromomethane	0.182	0.211	0.01	15.9	20.0	
Chloroethane	0.161	0.169	0.01	5.0	20.0	
Trichlorofluoromethane	0.293	0.323	0.01	10.2	20.0	
1,1-Dichloroethene	0.215	0.232	0.01	7.9	20.0	
Acetone	0.076	0.069	0.01	9.2	20.0	
Carbon Disulfide	0.749	0.780	0.01	4.1	20.0	
Methylene Chloride	0.237	0.309	0.01	30.4	20.0	<-
trans-1,2-Dichloroethene	0.233	0.254	0.01	9.0	20.0	
Methyl tert-butyl ether	0.557	0.541	0.01	2.9	20.0	
1,1-Dichloroethane	0.485	0.493	0.1	1.6	20.0	
2-Butanone	0.106	0.091	0.01	14.2	20.0	
cis-1,2-Dichloroethene	0.275	0.285	0.01	3.6	20.0	
Chloroform	0.446	0.466	0.01	4.5	20.0	
1,1,1-Trichloroethane	0.364	0.380	0.01	4.4	20.0	
Carbon Tetrachloride	0.304	0.320	0.01	5.3	20.0	
1,2-Dichloroethane	0.309	0.297	0.01	3.9	20.0	
Benzene	0.985	1.031	0.01	4.7	20.0	
Trichloroethene	0.245	0.257	0.01	4.9	20.0	
1,2-Dichloropropane	0.244	0.242	0.01	0.8	20.0	
Bromodichloromethane	0.340	0.337	0.01	0.9	20.0	
cis-1,3-Dichloropropene	0.417	0.406	0.01	2.6	20.0	
4-Methyl-2-pentanone	0.226	0.169	0.01	25.2	20.0	<-
Toluene	0.978	1.026	0.01	4.9	20.0	
trans-1,3-Dichloropropene	0.358	0.349	0.01	2.5	20.0	
1,1,2-Trichloroethane	0.197	0.196	0.01	0.5	20.0	
Tetrachloroethene	0.305	0.338	0.01	10.8	20.0	
2-Hexanone	0.208	0.167	0.01	19.7	20.0	
Dibromochloromethane	0.358	0.356	0.01	0.6	20.0	
1,2-Dibromoethane	0.314	0.303	0.01	3.5	20.0	
Chlorobenzene	0.910	0.950	0.3	4.4	20.0	
Ethylbenzene	0.482	0.502	0.01	4.1	20.0	
m,p-Xylene	0.582	0.621	0.01	6.7	20.0	
o-Xylene	0.578	0.609	0.01	5.4	20.0	
Xylene (Total)	0.580	0.617	0.01	6.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: V2 Calibration Date: 03/05/03 Time: 0928

Lab File ID: V2F5261 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.308	0.247	0.01	19.8	20.0	
Chloromethane	0.426	0.356	0.1	16.4	20.0	
Vinyl Chloride	0.323	0.288	0.01	10.8	20.0	
Bromomethane	0.182	0.208	0.01	14.3	20.0	
Chloroethane	0.161	0.160	0.01	0.6	20.0	
Trichlorofluoromethane	0.293	0.284	0.01	3.1	20.0	
1,1-Dichloroethene	0.215	0.247	0.01	14.9	20.0	
Acetone	0.076	0.088	0.01	15.8	20.0	
Carbon Disulfide	0.749	0.763	0.01	1.9	20.0	
Methylene Chloride	0.237	0.333	0.01	40.5	20.0	<-
trans-1,2-Dichloroethene	0.233	0.272	0.01	16.7	20.0	
Methyl tert-butyl ether	0.557	0.559	0.01	0.4	20.0	
1,1-Dichloroethane	0.485	0.488	0.1	0.6	20.0	
2-Butanone	0.106	0.096	0.01	9.4	20.0	
cis-1,2-Dichloroethene	0.275	0.293	0.01	6.5	20.0	
Chloroform	0.446	0.479	0.01	7.4	20.0	
1,1,1-Trichloroethane	0.364	0.380	0.01	4.4	20.0	
Carbon Tetrachloride	0.304	0.318	0.01	4.6	20.0	
1,2-Dichloroethane	0.309	0.309	0.01	0.0	20.0	
Benzene	0.985	1.062	0.01	7.8	20.0	
Trichloroethene	0.245	0.258	0.01	5.3	20.0	
1,2-Dichloropropane	0.244	0.245	0.01	0.4	20.0	
Bromodichloromethane	0.340	0.346	0.01	1.8	20.0	
cis-1,3-Dichloropropene	0.417	0.409	0.01	1.9	20.0	
4-Methyl-2-pentanone	0.226	0.165	0.01	27.0	20.0	<-
Toluene	0.978	1.036	0.01	5.9	20.0	
trans-1,3-Dichloropropene	0.358	0.356	0.01	0.6	20.0	
1,1,2-Trichloroethane	0.197	0.214	0.01	8.6	20.0	
Tetrachloroethene	0.305	0.336	0.01	10.2	20.0	
2-Hexanone	0.208	0.153	0.01	26.4	20.0	<-
Dibromochloromethane	0.358	0.369	0.01	3.1	20.0	
1,2-Dibromoethane	0.314	0.320	0.01	1.9	20.0	
Chlorobenzene	0.910	0.965	0.3	6.0	20.0	
Ethylbenzene	0.482	0.484	0.01	0.4	20.0	
m,p-Xylene	0.582	0.603	0.01	3.6	20.0	
o-Xylene	0.578	0.590	0.01	2.1	20.0	
Xylene (Total)	0.580	0.599	0.01	3.3	20.0	

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	62	0.0	56	90	58-131
Chloromethane	62	0.0	60	97	63-120
Vinyl Chloride	62	0.0	62	100	61-134
Bromomethane	62	0.0	55	89	10-215
Chloroethane	62	0.0	62	100	55-146
Trichlorofluoromethane	62	0.0	62	100	63-126
1,1-Dichloroethene	62	0.0	63	102	67-127
Acetone	62	410	290	-194*	0-154
Carbon Disulfide	62	0.0	48	77	63-126
Methylene Chloride	62	63	63	0*	62-128
trans-1,2-Dichloroethen	62	0.0	62	100	76-120
Methyl tert-butyl ether	62	0.0	69	111	52-130
1,1-Dichloroethane	62	0.0	63	102	74-118
2-Butanone	62	0.0	100	161*	14-154
cis-1,2-Dichloroethene	62	0.0	62	100	83-115
Chloroform	62	0.0	62	100	77-120
1,1,1-Trichloroethane	62	0.0	63	102	72-126
Carbon Tetrachloride	62	0.0	61	98	69-135
1,2-Dichloroethane	62	0.0	68	110	65-126
Benzene	62	0.0	61	98	78-121
Trichloroethene	62	0.0	60	97	75-125
1,2-Dichloropropane	62	0.0	62	100	78-117
Bromodichloromethane	62	0.0	62	100	75-118
cis-1,3-Dichloropropene	62	0.0	62	100	78-120
4-Methyl-2-pentanone	62	0.0	82	132	45-141
Toluene	62	0.0	58	94	80-126
trans-1,3-Dichloroprope	62	0.0	64	103	73-123
1,1,2-Trichloroethane	62	0.0	64	103	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	62	0.0	61	98	65-134
2-Hexanone	62	0.0	75	121	37-136
Dibromochloromethane	62	0.0	68	110	76-115
1,2-Dibromoethane	62	0.0	71	114	72-117
Chlorobenzene	62	0.0	59	95	78-117
Ethylbenzene	62	0.0	57	92	79-129
Xylene (Total)	180	0.0	170	94	83-125
Styrene	62	0.0	51	82*	83-122
Bromoform	62	0.0	66	106	67-126
Isopropylbenzene	62	0.0	50	81	80-135
1,1,2,2-Tetrachloroetha	62	0.0	91	147*	70-117
1,3,5-Trimethylbenzene	62	0.0	63	102	72-133
1,2,4-Trimethylbenzene	62	0.0	63	102	73-126
1,3-Dichlorobenzene	62	0.0	57	92	75-115
1,4-Dichlorobenzene	62	0.0	57	92	72-110
1,2-Dichlorobenzene	62	0.0	55	89	78-113
1,2-Dibromo-3-chloropro	62	0.0	81	131*	52-128
1,2,4-Trichlorobenzene	62	0.0	27	44*	49-126
1,1,2-Trichlo-1,2,2-tri	62	0.0	58	94	70-130
Methyl Acetate	62	0.0	98	158*	70-130
Cyclohexane	62	0.0	52	84	70-130
Methylcyclohexane	62	0.0	50	81	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	64	55	86	4	40	58-131
Chloromethane	64	62	97	0	40	63-120
Vinyl Chloride	64	64	100	0	40	61-134
Bromomethane	64	56	88	1	40	10-215
Chloroethane	64	63	98	2	40	55-146
Trichlorofluoromethane	64	65	102	2	40	63-126
1,1-Dichloroethene	64	68	106	4	40	67-127
Acetone	64	310	-156*	-22	40	0-154
Carbon Disulfide	64	49	76	1	40	63-126
Methylene Chloride	64	63	0*	999*	40	62-128
trans-1,2-Dichloroethen	64	64	100	0	40	76-120
Methyl tert-butyl ether	64	75	117	5	40	52-130
1,1-Dichloroethane	64	65	102	0	40	74-118
2-Butanone	64	120	188*	15	40	14-154
cis-1,2-Dichloroethene	64	64	100	0	40	83-115
Chloroform	64	65	102	2	40	77-120
1,1,1-Trichloroethane	64	64	100	2	40	72-126
Carbon Tetrachloride	64	62	97	1	40	69-135
1,2-Dichloroethane	64	71	111	1	40	65-126
Benzene	64	64	100	2	40	78-121
Trichloroethene	64	61	95	2	40	75-125
1,2-Dichloropropane	64	64	100	0	40	78-117
Bromodichloromethane	64	63	98	2	40	75-118
cis-1,3-Dichloropropene	64	64	100	0	40	78-120
4-Methyl-2-pentanone	64	87	136	3	40	45-141
Toluene	64	59	92	2	40	80-126
trans-1,3-Dichloroprope	64	66	103	0	40	73-123
1,1,2-Trichloroethane	64	66	103	0	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	64	63	98	0	40	65-134
2-Hexanone	64	87	136	12	40	37-136
Dibromochloromethane	64	72	112	2	40	76-115
1,2-Dibromoethane	64	77	120*	5	40	72-117
Chlorobenzene	64	61	95	0	40	78-117
Ethylbenzene	64	59	92	0	40	79-129
Xylene (Total)	190	170	89	5	40	83-125
Styrene	64	52	81*	1	40	83-122
Bromoform	64	67	105	1	40	67-126
Isopropylbenzene	64	51	80	1	40	80-135
1,1,2,2-Tetrachloroetha	64	96	150*	2	40	70-117
1,3,5-Trimethylbenzene	64	66	103	1	40	72-133
1,2,4-Trimethylbenzene	64	66	103	1	40	73-126
1,3-Dichlorobenzene	64	58	91	1	40	75-115
1,4-Dichlorobenzene	64	57	89	3	40	72-110
1,2-Dichlorobenzene	64	54	84	6	40	78-113
1,2-Dibromo-3-chloropro	64	83	130*	1	40	52-128
1,2,4-Trichlorobenzene	64	27	42*	5	40	49-126
1,1,2-Trichlo-1,2,2-tri	64	60	94	0	40	70-130
Methyl Acetate	64	130	203*	25	40	70-130
Cyclohexane	64	51	80	5	40	70-130
Methylcyclohexane	64	47	73	10	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 50 outside limits
Spike Recovery: 17 out of 100 outside limits

COMMENTS: _____

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol *	1.390					1.399	3.2*
bis(2-Chloroethyl)Ether *	1.100					1.112	4.4*
2-Chlorophenol *	1.371					1.295	3.5*
2-Methylphenol *	1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane) *	1.235					1.228	8.5*
4-Methylphenol *	1.129					1.108	1.6*
N-Nitroso-di-n-propylamine *	0.729					0.820	7.3*
Hexachloroethane *	0.627					0.609	2.4*
Nitrobenzene *	0.406					0.416	4.6*
Isophorone *	0.535					0.541	2.3*
2-Nitrophenol *	0.219					0.207	5.1*
2,4-Dimethylphenol *	0.383					0.349	7.8*
2,4-Dichlorophenol *	0.356					0.321	8.1*
Naphthalene *	1.196					1.127	4.2*
4-Chloroaniline *	0.251					0.255	31.9*
bis(2-Chloroethoxy)methane *	0.403					0.396	2.1*
Hexachlorobutadiene *	0.220					0.214	4.2*
4-Chloro-3-Methylphenol *	0.348					0.331	4.0*
2-Methylnaphthalene *	1.032					0.959	7.5*
Hexachlorocyclopentadiene *	0.369					0.323	10.7*
2,4,6-Trichlorophenol *	0.424					0.387	7.2*
2,4,5-Trichlorophenol *	0.457					0.412	7.4*
2-Chloronaphthalene *	1.346					1.224	7.1*
2-Nitroaniline *	0.518					0.527	2.8*
Dimethylphthalate *	1.415					1.385	1.7*
Acenaphthylene *	1.879					1.819	2.1*
2,6-Dinitrotoluene *	0.318					0.308	2.6*
3-Nitroaniline *	0.274					0.181	52.2*
Acenaphthene *	1.311					1.218	5.3*
2,4-Dinitrophenol *	0.201					0.167	17.9*
4-Nitrophenol *	0.265					0.267	6.2*
Dibenzofuran *	2.250					2.192	5.6*
2,4-Dinitrotoluene *	0.456					0.427	7.5*
Diethylphthalate *	1.413					1.367	3.2*
4-Chlorophenyl-phenylether *	0.600					0.656	7.8*
Fluorene *	1.325					1.349	7.0*
4-Nitroaniline *	0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177						0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407						0.394	20.1*
4-Bromophenyl-phenylether	* 0.262						0.243	5.7*
Hexachlorobenzene	* 0.255						0.236	5.7*
Pentachlorophenol	* 0.166						0.143	15.2*
Phenanthrene	* 1.296						1.190	7.1*
Anthracene	* 1.261						1.166	6.3*
Carbazole	* 0.612						0.572	31.8*
Di-n-butylphthalate	* 1.451						1.374	4.8*
Fluoranthene	* 1.230						1.143	7.2*
Pyrene	* 1.223						1.206	1.6*
Butylbenzylphthalate	* 0.629						0.613	2.3*
3,3'-Dichlorobenzidine	0.136						0.147	12.9
Benzo(a)anthracene	* 1.092						1.086	1.1*
Chrysene	* 0.963						1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824						0.878	6.6*
Di-n-octylphthalate	* 2.687						2.408	13.8*
Benzo(b)fluoranthene	* 1.959						1.686	12.1*
Benzo(k)fluoranthene	* 1.683						1.669	6.2*
Benzo(a)pyrene	* 1.582						1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678						1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479						1.323	8.0*
Benzo(g,h,i)perylene	* 1.338						1.245	6.0*
1,1'-Biphenyl	* 1.686						1.644	3.2*
Acetophenone	* 1.856						1.809	2.4*
Atrazine	* 0.173						0.178	9.6*
Benzaldehyde	* 0.213						0.47?	40.0*
Caprolactum	* 0.097						0.099	1.1*
Nitrobenzene-d5	0.436						0.440	2.2*
2-Fluorobiphenyl	* 1.695						1.579	4.7*
Terphenyl-d14	* 0.882						0.901	1.7*
Phenol-d5	* 1.296						1.322	4.2*
2-Fluorophenol	* 1.164						1.122	3.9*
2,4,6-Tribromophenol	* 0.128						0.116	8.5*
2-Chlorophenol-d4	* 1.326						1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981						0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

000551

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/14/03 Time: 1422

Lab File ID: S3C2328 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.489	0.05	6.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.202	0.05	8.1	100
2-Chlorophenol	1.295	1.311	0.05	1.2	100
2-Methylphenol	1.130	1.104	0.05	2.3	100
2,2'-oxybis(1-Chloropropane)	1.228	1.391	0.05	13.3	100
4-Methylphenol	1.108	1.132	0.05	2.2	100
N-Nitroso-di-n-propylamine	0.820	0.812	0.05	1.0	100
Hexachloroethane	0.609	0.606	0.05	0.5	100
Nitrobenzene	0.416	0.442	0.05	6.2	100
Isophorone	0.541	0.561	0.05	3.7	100
2-Nitrophenol	0.207	0.213	0.05	2.9	20.0
2,4-Dimethylphenol	0.349	0.296	0.05	15.2	100
2,4-Dichlorophenol	0.321	0.309	0.05	3.7	20.0
Naphthalene	1.127	1.074	0.05	4.7	100
4-Chloroaniline	0.255	0.152	0.05	40.4	100
bis(2-Chloroethoxy)methane	0.396	0.422	0.05	6.6	100
Hexachlorobutadiene	0.214	0.205	0.05	4.2	20.0
4-Chloro-3-Methylphenol	0.331	0.330	0.05	0.3	20.0
2-Methylnaphthalene	0.959	0.844	0.05	12.0	100
Hexachlorocyclopentadiene	0.323	0.221	0.05	31.6	100
2,4,6-Trichlorophenol	0.387	0.386	0.05	0.2	100
2,4,5-Trichlorophenol	0.412	0.403	0.05	2.2	100
2-Chloronaphthalene	1.224	1.143	0.05	6.6	100
2-Nitroaniline	0.527	0.559	0.05	6.1	100
Dimethylphthalate	1.385	1.387	0.05	0.1	100
Acenaphthylene	1.819	1.799	0.05	1.1	100
2,6-Dinitrotoluene	0.308	0.317	0.05	2.9	100
3-Nitroaniline	0.181	0.295	0.05	63.0	100
Acenaphthene	1.218	1.141	0.05	6.3	20.0
2,4-Dinitrophenol	0.167	0.134	0.05	19.8	100
4-Nitrophenol	0.267	0.246	0.05	7.9	100
Dibenzofuran	2.192	2.021	0.05	7.8	100
2,4-Dinitrotoluene	0.427	0.414	0.05	3.0	100
Diethylphthalate	1.367	1.348	0.05	1.4	100
4-Chlorophenyl-phenylether	0.656	0.628	0.05	4.3	100
Fluorene	1.349	1.267	0.05	6.1	100
4-Nitroaniline	0.150	0.210	0.05	40.0	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/14/03 Time: 1422

Lab File ID: S3C2328 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.133	0.05	16.4	100
N-Nitrosodiphenylamine	0.394	0.429	0.05	8.9	20.0
4-Bromophenyl-phenylether	0.243	0.214	0.05	11.9	100
Hexachlorobenzene	0.236	0.214	0.05	9.3	100
Pentachlorophenol	0.143	0.132	0.05	7.7	20.0
Phenanthrene	1.190	1.092	0.05	8.2	100
Anthracene	1.166	1.043	0.05	10.5	100
Di-n-butylphthalate	1.374	1.372	0.05	0.1	100
Fluoranthene	1.143	1.144	0.05	0.1	20.0
Pyrene	1.206	1.140	0.05	5.5	100
Butylbenzylphthalate	0.613	0.618	0.05	0.8	100
3,3'-Dichlorobenzidine	0.147	0.226	0.01	53.7	100
Benzo(a)anthracene	1.086	1.074	0.05	1.1	100
Chrysene	1.034	1.032	0.05	0.2	100
bis(2-Ethylhexyl)phthalate	0.878	0.930	0.05	5.9	100
Di-n-octylphthalate	2.408	2.268	0.05	5.8	20.0
Benzo(b)fluoranthene	1.686	1.566	0.05	7.1	100
Benzo(k)fluoranthene	1.669	1.559	0.05	6.6	100
Benzo(a)pyrene	1.448	1.318	0.05	9.0	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.690	0.05	10.0	100
Dibenzo(a,h)anthracene	1.323	1.441	0.05	8.9	100
Benzo(g,h,i)perylene	1.245	1.429	0.05	14.8	100
Nitrobenzene-d5	0.440	0.466	0.05	5.9	100
2-Fluorobiphenyl	1.579	1.482	0.05	6.1	100
Terphenyl-d14	0.901	0.842	0.05	6.5	100
Phenol-d5	1.322	1.382	0.05	4.5	100
2-Fluorophenol	1.122	1.198	0.05	6.8	100
2,4,6-Tribromophenol	0.116	0.109	0.05	6.0	100
2-Chlorophenol-d4	1.291	1.331	0.05	3.1	100
1,2-Dichlorobenzene-d4	0.924	0.894	0.05	3.2	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.517	0.05	8.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.225	0.05	10.2	100
2-Chlorophenol	1.295	1.304	0.05	0.7	100
2-Methylphenol	1.130	1.099	0.05	2.7	100
2,2'-oxybis(1-Chloropropane)	1.228	1.446	0.05	17.8	100
4-Methylphenol	1.108	1.097	0.05	1.0	100
N-Nitroso-di-n-propylamine	0.820	0.870	0.05	6.1	100
Hexachloroethane	0.609	0.622	0.05	2.1	100
Nitrobenzene	0.416	0.470	0.05	13.0	100
Isophorone	0.541	0.572	0.05	5.7	100
2-Nitrophenol	0.207	0.210	0.05	1.4	20.0
2,4-Dimethylphenol	0.349	0.290	0.05	16.9	100
2,4-Dichlorophenol	0.321	0.301	0.05	6.2	20.0
Naphthalene	1.127	1.074	0.05	4.7	100
4-Chloroaniline	0.255	0.138	0.05	45.9	100
bis(2-Chloroethoxy)methane	0.396	0.434	0.05	9.6	100
Hexachlorobutadiene	0.214	0.210	0.05	1.9	20.0
4-Chloro-3-Methylphenol	0.331	0.325	0.05	1.8	20.0
2-Methylnaphthalene	0.959	0.817	0.05	14.8	100
Hexachlorocyclopentadiene	0.323	0.241	0.05	25.4	100
2,4,6-Trichlorophenol	0.387	0.384	0.05	0.8	100
2,4,5-Trichlorophenol	0.412	0.390	0.05	5.3	100
2-Chloronaphthalene	1.224	1.162	0.05	5.1	100
2-Nitroaniline	0.527	0.614	0.05	16.5	100
Dimethylphthalate	1.385	1.393	0.05	0.6	100
Acenaphthylene	1.819	1.788	0.05	1.7	100
2,6-Dinitrotoluene	0.308	0.323	0.05	4.9	100
3-Nitroaniline	0.181	0.206	0.05	13.8	100
Acenaphthene	1.218	1.146	0.05	5.9	20.0
2,4-Dinitrophenol	0.167	0.129	0.05	22.8	100
4-Nitrophenol	0.267	0.242	0.05	9.4	100
Dibenzofuran	2.192	2.012	0.05	8.2	100
2,4-Dinitrotoluene	0.427	0.396	0.05	7.2	100
Diethylphthalate	1.367	1.319	0.05	3.5	100
4-Chlorophenyl-phenylether	0.656	0.621	0.05	5.3	100
Fluorene	1.349	1.223	0.05	9.3	100
4-Nitroaniline	0.150	0.174	0.05	16.0	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.142	0.05	10.7	100
N-Nitrosodiphenylamine	0.394	0.424	0.05	7.6	20.0
4-Bromophenyl-phenylether	0.243	0.227	0.05	6.6	100
Hexachlorobenzene	0.236	0.224	0.05	5.1	100
Pentachlorophenol	0.143	0.115	0.05	19.6	20.0
Phenanthrene	1.190	1.104	0.05	7.2	100
Anthracene	1.166	1.026	0.05	12.0	100
Carbazole	0.572	0.654	0.05	14.3	100
Di-n-butylphthalate	1.374	1.326	0.05	3.5	100
Fluoranthene	1.143	1.052	0.05	8.0	20.0
Pyrene	1.206	1.229	0.05	1.9	100
Butylbenzylphthalate	0.613	0.629	0.05	2.6	100
3,3'-Dichlorobenzidine	0.147	0.119	0.05	19.0	100
Benzo(a)anthracene	1.086	1.057	0.05	2.7	100
Chrysene	1.034	1.026	0.05	0.8	100
bis(2-Ethylhexyl)phthalate	0.878	0.891	0.05	1.5	100
Di-n-octylphthalate	2.408	2.294	0.05	4.7	20.0
Benzo(b)fluoranthene	1.686	1.556	0.05	7.7	100
Benzo(k)fluoranthene	1.669	1.640	0.05	1.7	100
Benzo(a)pyrene	1.448	1.328	0.05	8.3	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.597	0.05	4.0	100
Dibenzo(a,h)anthracene	1.323	1.346	0.05	1.7	100
Benzo(g,h,i)perylene	1.245	1.354	0.05	8.8	100
1,1'-Biphenyl	1.644	1.598	0.05	2.8	100
Acetophenone	1.809	1.734	0.05	4.1	100
Atrazine	0.178	0.118	0.05	33.7	100
Benzaldehyde	0.477	0.806	0.05	69.0	100
Caprolactum	0.099	0.110	0.05	11.1	100
Nitrobenzene-d5	0.440	0.502	0.05	14.1	100
2-Fluorobiphenyl	1.579	1.541	0.05	2.4	100
Terphenyl-d14	0.901	0.888	0.05	1.4	100
Phenol-d5	1.322	1.428	0.05	8.0	100
2-Fluorophenol	1.122	1.196	0.05	6.6	100
2,4,6-Tribromophenol	0.116	0.109	0.05	6.0	100
2-Chlorophenol-d4	1.291	1.313	0.05	1.7	100
1,2-Dichlorobenzene-d4	0.924	0.892	0.05	3.5	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.489	0.05	6.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.241	0.05	11.6	100
2-Chlorophenol	1.295	1.314	0.05	1.5	100
2-Methylphenol	1.130	1.136	0.05	0.5	100
2,2'-oxybis(1-Chloropropane)	1.228	1.600	0.05	30.3	100
4-Methylphenol	1.108	1.196	0.05	7.9	100
N-Nitroso-di-n-propylamine	0.820	0.880	0.05	7.3	100
Hexachloroethane	0.609	0.575	0.05	5.6	100
Nitrobenzene	0.416	0.415	0.05	0.2	100
Isophorone	0.541	0.560	0.05	3.5	100
2-Nitrophenol	0.207	0.203	0.05	1.9	20.0
2,4-Dimethylphenol	0.349	0.287	0.05	17.8	100
2,4-Dichlorophenol	0.321	0.300	0.05	6.5	20.0
Naphthalene	1.127	1.076	0.05	4.5	100
4-Chloroaniline	0.255	0.141	0.05	44.7	100
bis(2-Chloroethoxy)methane	0.396	0.404	0.05	2.0	100
Hexachlorobutadiene	0.214	0.176	0.05	17.8	20.0
4-Chloro-3-Methylphenol	0.331	0.343	0.05	3.6	20.0
2-Methylnaphthalene	0.959	0.924	0.05	3.6	100
Hexachlorocyclopentadiene	0.323	0.161	0.05	50.2	100
2,4,6-Trichlorophenol	0.387	0.360	0.05	7.0	100
2,4,5-Trichlorophenol	0.412	0.376	0.05	8.7	100
2-Chloronaphthalene	1.224	1.127	0.05	7.9	100
2-Nitroaniline	0.527	0.550	0.05	4.4	100
Dimethylphthalate	1.385	1.392	0.05	0.5	100
Acenaphthylene	1.819	1.844	0.05	1.4	100
2,6-Dinitrotoluene	0.308	0.308	0.05	0.0	100
3-Nitroaniline	0.181	0.293	0.05	61.9	100
Acenaphthene	1.218	1.188	0.05	2.5	20.0
2,4-Dinitrophenol	0.167	0.136	0.05	18.6	100
4-Nitrophenol	0.267	0.237	0.05	11.2	100
Dibenzofuran	2.192	2.056	0.05	6.2	100
2,4-Dinitrotoluene	0.427	0.415	0.05	2.8	100
Diethylphthalate	1.367	1.418	0.05	3.7	100
4-Chlorophenyl-phenylether	0.656	0.602	0.05	8.2	100
Fluorene	1.349	1.295	0.05	4.0	100
4-Nitroaniline	0.150	0.236	0.05	57.3	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.139	0.05	12.6	100
N-Nitrosodiphenylamine	0.394	0.438	0.05	11.2	20.0
4-Bromophenyl-phenylether	0.243	0.220	0.05	9.5	100
Hexachlorobenzene	0.236	0.234	0.05	0.8	100
Pentachlorophenol	0.143	0.135	0.05	5.6	20.0
Phenanthrene	1.190	1.111	0.05	6.6	100
Anthracene	1.166	1.062	0.05	8.9	100
Carbazole	0.572	0.843	0.05	47.4	100
Di-n-butylphthalate	1.374	1.432	0.05	4.2	100
Fluoranthene	1.143	1.085	0.05	5.1	20.0
Pyrene	1.206	1.230	0.05	2.0	100
Butylbenzylphthalate	0.613	0.689	0.05	12.4	100
3,3'-Dichlorobenzidine	0.147	0.220	0.05	49.6	100
Benzo(a)anthracene	1.086	1.066	0.05	1.8	100
Chrysene	1.034	1.010	0.05	2.3	100
bis(2-Ethylhexyl)phthalate	0.878	1.012	0.05	15.3	100
Di-n-octylphthalate	2.408	2.799	0.05	16.2	20.0
Benzo(b)fluoranthene	1.686	1.630	0.05	3.3	100
Benzo(k)fluoranthene	1.669	1.665	0.05	0.2	100
Benzo(a)pyrene	1.448	1.343	0.05	7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.535	0.05	0.1	100
Dibenzo(a,h)anthracene	1.323	1.303	0.05	1.5	100
Benzo(g,h,i)perylene	1.245	1.247	0.05	0.2	100
1,1'-Biphenyl	1.644	1.522	0.05	7.4	100
Acetophenone	1.809	1.862	0.05	2.9	100
Atrazine	0.178	0.123	0.05	30.9	100
Benzaldehyde	0.477	0.903	0.05	89.3	100
Caprolactum	0.099	0.115	0.05	16.2	100
Nitrobenzene-d5	0.440	0.435	0.05	1.1	100
2-Fluorobiphenyl	1.579	1.415	0.05	10.4	100
Terphenyl-d14	0.901	0.935	0.05	3.8	100
Phenol-d5	1.322	1.403	0.05	6.1	100
2-Fluorophenol	1.122	1.182	0.05	5.3	100
2,4,6-Tribromophenol	0.116	0.119	0.05	2.6	100
2-Chlorophenol-d4	1.291	1.331	0.05	3.1	100
1,2-Dichlorobenzene-d4	0.924	0.889	0.05	3.8	100

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		800	96	45-109
bis(2-Chloroethyl)Ether	830		750	90	43-104
2-Chlorophenol	830		710	86	43-107
2-Methylphenol	830		700	84	45-108
2,2'-oxybis(1-Chloropro	830		960	116*	41-105
4-Methylphenol	830		760	92	48-109
N-Nitroso-di-n-prop.(1)	830		800	96	44-111
Hexachloroethane	830		630	76	40-102
Nitrobenzene	830		700	84	44-108
Isophorone	830		920	111	42-113
2-Nitrophenol	830		650	78	42-111
2,4-Dimethylphenol	830		460	55	37-107
2,4-Dichlorophenol	830		620	75	49-110
Naphthalene	830		650	78	44-112
4-Chloroaniline	830		500	60	4-102
bis(2-Chloroethoxy)meth	830		730	88	46-108
Hexachlorobutadiene	830		550	66	41-108
4-Chloro-3-Methylphenol	830		720	87	56-117
2-Methylnaphthalene	830		500	60	46-110
Hexachlorocyclopentadie	830		330	40	10-118
2,4,6-Trichlorophenol	830		630	76	53-115
2,4,5-Trichlorophenol	830		630	76	59-113
2-Chloronaphthalene	830		640	77	52-112
2-Nitroaniline	830		580	70	63-117
Dimethylphthalate	830		710	86	62-117
Acenaphthylene	830		700	84	58-112
2,6-Dinitrotoluene	830		720	87	60-118
3-Nitroaniline	830		900	108	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		680	82	53-116
2,4-Dinitrophenol	830		420	51	15-136
4-Nitrophenol	830		590	71	50-129
Dibenzofuran	830		510	61	61-112
2,4-Dinitrotoluene	830		700	84	59-123
Diethylphthalate	830		760	92	61-120
4-Chlorophenyl-phenylet	830		650	78	59-116
Fluorene	830		670	81	63-115
4-Nitroaniline	830		960	116	35-124
4,6-Dinitro-2-methylphe	830		530	64	33-130
N-Nitrosodiphenylamine	830		1300	157*	50-150
4-Bromophenyl-phenyleth	830		650	78	66-110
Hexachlorobenzene	830		710	86	67-112
Pentachlorophenol	830		580	70	19-130
Phenanthrene	830		680	82	70-115
Anthracene	830		680	82	63-117
Carbazole	830		1100	132*	62-122
Di-n-butylphthalate	830		790	95	70-120
Fluoranthene	830		670	81	64-121
Pyrene	830		810	98	66-120
Butylbenzylphthalate	830		870	105	63-123
3,3'-Dichlorobenzidine	830		940	113	8-124
Benzo(a)anthracene	830		730	88	50-129
Chrysene	830		710	86	41-150
bis(2-Ethylhexyl)phthal	830		860	104	64-115
Di-n-octylphthalate	830		830	100	69-137
Benzo(b)fluoranthene	830		700	84	61-129
Benzo(k)fluoranthene	830		740	89	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	1100	0.0	530	48	45-109
bis(2-Chloroethyl)Ether	1100	0.0	520	47	43-104
2-Chlorophenol	1100	0.0	520	47	43-107
2-Methylphenol	1100	0.0	520	47	45-108
2,2'-oxybis(1-Chloropro	1100	0.0	600	54	41-105
4-Methylphenol	1100	0.0	560	51	48-109
N-Nitroso-di-n-prop.(1)	1100	0.0	580	53	44-111
Hexachloroethane	1100	0.0	400	36*	40-102
Nitrobenzene	1100	0.0	530	48	44-108
Isophorone	1100	0.0	680	62	42-113
2-Nitrophenol	1100	0.0	480	44	42-111
2,4-Dimethylphenol	1100	0.0	500	45	37-107
2,4-Dichlorophenol	1100	0.0	490	44*	49-110
Naphthalene	1100	0.0	490	44	44-112
4-Chloroaniline	1100	0.0	280	25	4-102
bis(2-Chloroethoxy)meth	1100	0.0	530	48	46-108
Hexachlorobutadiene	1100	0.0	450	41	41-108
4-Chloro-3-Methylphenol	1100	0.0	530	48*	56-117
2-Methylnaphthalene	1100	0.0	380	34*	46-110
Hexachlorocyclopentadie	1100	0.0	190	17	10-118
2,4,6-Trichlorophenol	1100	0.0	530	48*	53-115
2,4,5-Trichlorophenol	1100	0.0	460	42*	59-113
2-Chloronaphthalene	1100	0.0	510	46*	52-112
2-Nitroaniline	1100	0.0	400	36*	63-117
Dimethylphthalate	1100	0.0	560	51*	62-117
Acenaphthylene	1100	0.0	550	50*	58-112
2,6-Dinitrotoluene	1100	0.0	540	49*	60-118
3-Nitroaniline	1100	0.0	93	8*	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Acenaphthene	1100	0.0	520	47*	53-116
2,4-Dinitrophenol	1100	0.0	210	19	15-136
4-Nitrophenol	1100	0.0	340	31*	50-129
Dibenzofuran	1100	0.0	390	35*	61-112
2,4-Dinitrotoluene	1100	0.0	470	43*	59-123
Diethylphthalate	1100	0.0	570	52*	61-120
4-Chlorophenyl-phenylet	1100	0.0	510	46*	59-116
Fluorene	1100	0.0	500	45*	63-115
4-Nitroaniline	1100	0.0	180	16*	35-124
4,6-Dinitro-2-methylphe	1100	0.0	280	25*	33-130
N-Nitrosodiphenylamine	1100	0.0	990	90	50-150
4-Bromophenyl-phenyleth	1100	0.0	530	48*	66-110
Hexachlorobenzene	1100	0.0	530	48*	67-112
Pentachlorophenol	1100	0.0	440	40	19-130
Phenanthrene	1100	48	530	44*	70-115
Anthracene	1100	49	510	42*	63-117
Carbazole	1100	0.0	840	76	62-122
Di-n-butylphthalate	1100	0.0	580	53*	70-120
Fluoranthene	1100	100	490	35*	64-121
Pyrene	1100	110	680	52*	66-120
Butylbenzylphthalate	1100	0.0	680	62*	63-123
3,3'-Dichlorobenzidine	1100	0.0	0.0	0*	8-124
Benzo(a)anthracene	1100	64	600	49*	50-129
Chrysene	1100	62	580	47	41-150
bis(2-Ethylhexyl)phthal	1100	51	700	59*	64-115
Di-n-octylphthalate	1100	0.0	620	56*	69-137
Benzo(b)fluoranthene	1100	96	600	46*	61-129
Benzo(k)fluoranthene	1100	97	550	41*	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	1100	68	560	45*	66-119
Indeno(1,2,3-cd)pyrene	1100	0.0	530	48*	56-128
Dibenzo(a,h)anthracene	1100	0.0	510	46*	58-128
Benzo(g,h,i)perylene	1100	0.0	500	45	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	1100	630	57	17	40	45-109
bis(2-Chloroethyl)Ether	1100	640	58	21	40	43-104
2-Chlorophenol	1100	620	56	17	40	43-107
2-Methylphenol	1100	620	56	17	40	45-108
2,2'-oxybis(1-Chloropro	1100	750	68	23	40	41-105
4-Methylphenol	1100	680	62	19	40	48-109
N-Nitroso-di-n-prop.(1)	1100	700	64	19	40	44-111
Hexachloroethane	1100	460	42	15	40	40-102
Nitrobenzene	1100	620	56	15	40	44-108
Isophorone	1100	820	74	18	40	42-113
2-Nitrophenol	1100	580	53	18	40	42-111
2,4-Dimethylphenol	1100	640	58	25	40	37-107
2,4-Dichlorophenol	1100	580	53	18	40	49-110
Naphthalene	1100	600	54	20	40	44-112
4-Chloroaniline	1100	340	31	21	40	4-102
bis(2-Chloroethoxy)meth	1100	660	60	22	40	46-108
Hexachlorobutadiene	1100	540	49	18	40	41-108
4-Chloro-3-Methylphenol	1100	670	61	24	40	56-117
2-Methylnaphthalene	1100	480	44*	26	40	46-110
Hexachlorocyclopentadie	1100	150	14	19	40	10-118
2,4,6-Trichlorophenol	1100	640	58	19	40	53-115
2,4,5-Trichlorophenol	1100	620	56*	28	40	59-113
2-Chloronaphthalene	1100	620	56	20	40	52-112
2-Nitroaniline	1100	490	44*	20	40	63-117
Dimethylphthalate	1100	670	61*	18	40	62-117
Acenaphthylene	1100	670	61	20	40	58-112
2,6-Dinitrotoluene	1100	650	59*	18	40	60-118
3-Nitroaniline	1100	96	9*	12	40	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	1100	640	58	21	40	53-116
2,4-Dinitrophenol	1100	170	15	24	40	15-136
4-Nitrophenol	1100	500	45*	37	40	50-129
Dibenzofuran	1100	480	44*	23	40	61-112
2,4-Dinitrotoluene	1100	570	52*	19	40	59-123
Diethylphthalate	1100	700	64	21	40	61-120
4-Chlorophenyl-phenylet	1100	640	58*	23	40	59-116
Fluorene	1100	620	56*	22	40	63-115
4-Nitroaniline	1100	280	25*	44*	40	35-124
4,6-Dinitro-2-methylphe	1100	280	25*	0	40	33-130
N-Nitrosodiphenylamine	1100	1200	109	19	40	50-150
4-Bromophenyl-phenyleth	1100	620	56*	15	40	66-110
Hexachlorobenzene	1100	650	59*	20	40	67-112
Pentachlorophenol	1100	560	51	24	40	19-130
Phenanthrene	1100	670	56*	24	40	70-115
Anthracene	1100	620	52*	21	40	63-117
Carbazole	1100	1100	100	27	40	62-122
Di-n-butylphthalate	1100	720	65*	20	40	70-120
Fluoranthene	1100	680	53*	41*	40	64-121
Pyrene	1100	850	67	25	40	66-120
Butylbenzylphthalate	1100	810	74	18	40	63-123
3,3'-Dichlorobenzidine	1100	0.0	0*		40	8-124
Benzo(a)anthracene	1100	750	62	23	40	50-129
Chrysene	1100	760	63	29	40	41-150
bis(2-Ethylhexyl)phthal	1100	840	72	20	40	64-115
Di-n-octylphthalate	1100	730	66*	16	40	69-137
Benzo(b)fluoranthene	1100	750	59*	25	40	61-129
Benzo(k)fluoranthene	1100	720	57*	33	40	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

6183

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix Spike - EPA Sample No.: WODSS126 Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Benzo(a)pyrene	1100	730	60*	28	40	66-119
Indeno(1,2,3-cd)pyrene	1100	680	62	25	40	56-128
Dibenzo(a,h)anthracene	1100	650	59	25	40	58-128
Benzo(g,h,i)perylene	1100	660	60	28	40	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 60 outside limits
Spike Recovery: 62 out of 120 outside limits

COMMENTS: _____

0181

TETRA TECH NUS

PHIL- 17004

TO: G. GLENN **DATE:** APRIL 2, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0301

SAMPLES: **5/Soil/**

WOD-SS-126
WOD-SS-127
WOD-SS-128
WOD-SS-DUP10
WOD-SS-139

2/Aqueous/

FB-022103
RB-022103

OVERVIEW

The sample set for the Waste Oil Dump Remedial Investigation – NASA Wallops Island, Virginia, SDG B0301 consists of five soil environmental samples (designated WOD-SS-), field blank (designated FB-), and one rinsate blank (designated RB-). All samples were analyzed for TAL metals. One field duplicate pair (samples WOD-SS-128/WOD-SS-DUP10) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 21, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B, 7470A, and 7471A.

SUMMARY

All analytes, with the exception of antimony, cadmium, and silver, were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control blank results, field duplicate results, compound identification, compound quantitation, and detection limits.

MAJOR PROBLEMS

- Cobalt, lead, nickel, potassium, silver, sodium, and thallium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are

elevated sample concentrations of the primary minerals noted above. Positive results for silver at concentrations less than or approximately equal to the predicted interference value relative to the sample iron concentration (based on comparing the ratio of analyte concentration to iron concentration in samples versus ICS solution A) are considered false positives and were qualified rejected, (R). For sodium, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K).

- Antimony, barium, cadmium, chromium, manganese, and vanadium exhibited negative concentrations with absolute value greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For antimony and cadmium, when the instrument detection limit (IDL) was less than the estimated interference magnitude for a sample, the detection limit was qualified rejected, (UR). A lesser effect of interference occurred for non-detected cadmium results in cases where the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value. Affected non-detected results were qualified as biased low (UL) in the latter case. For positive cadmium results, when the sample concentration was greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased low (L).

MINOR PROBLEMS

- The Relative Percent Difference (RPD) for manganese exceeded the 50 percent control limit in field duplicate samples WOD-SS-128 and WOD-SS-DUP10. Associated results were qualified estimated (J) for this reason.
- The field duplicate absolute value of the difference for mercury exceeded the 4X CRDL control limit in field duplicate samples WOD-SS-128 and WOD-SS-DUP10. Associated results were qualified estimated (J) for this reason.

NOTES

The following table summarizes the analytes detected as contaminants in the soil laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Soil)
Aluminum	2.96 mg/kg	14.8 mg/kg
Iron	1.51 mg/kg	7.55 mg/kg
Magnesium	4.15 mg/kg	20.75 mg/kg
Manganese	0.066 mg/kg	0.33 mg/kg
Potassium	4.18 mg/kg	20.9 mg/kg
Zinc	0.44 mg/kg	2.2 mg/kg

Samples affected: The soil action levels apply to all soil environmental samples. No aqueous action levels were calculated because there were no associated aqueous environmental samples, only an

aqueous field and rinsate blank. Field QC blanks are not appropriate to qualify from laboratory blanks during data validation.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. No qualifications were required because all soil concentrations exceeded the associated blank action levels.

The solid sample matrix spike (MS) recoveries for antimony was less than the lower quality control (QC) limit of 75 percent. No action was taken because data qualification for all soil samples was based upon a more significant issue (ICP Interference) as noted above.

No contaminants were detected in the field QC blanks.

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as rejected (UR/R), biased high (K), or biased low (UL/L). Several contaminants were detected in the laboratory blanks. ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed.

Other Factors Affecting Data Quality: Antimony exhibited a low MS recovery. Manganese and mercury exhibited field duplicate imprecision.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-139		
Laboratory ID:	B0301-12B			B0301-13B			B0301-14B			B0301-15B			B0301-16B		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/21/03		
Duplicate:							WOD-SS-DUP10			WOD-SS-128					
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Aluminum	9600			5650			6250			8260			9150		
Antimony	0.18	UR	K	0.2	UR	K	0.26	UR	K	0.29	UR	K	0.23	UR	K
Arsenic	9			4.1			5.4			6.7			9.8		
Barium	57.2			44.7			23.2			24.9			50.4		
Beryllium	0.32			0.16			0.18			0.21			0.33		
Cadmium	0.074	L	K	0.046	UL	K	0.061	UL	K	0.067	UL	K	0.053	UR	K
Calcium	829			1120			632			385			442		
Chromium	14.2			8.6			8.4			9.6			16.4		
Cobalt	3.6			2.1			2.7			2.2			3.9		
Copper	8			4.4			5.3			5.4			11		
Iron	8670			5130			7340			6500			10200		
Lead	32.8			20.8			15			16.6			35.7		
Magnesium	1080			695			1040			955			1190		
Manganese	245			312			183	J	G	59.1	J	G	214		
Mercury	0.089			0.064			0.4	J	G	0.092	J	G	0.33		
Nickel	7.2			4.4			4.4			5.4			6.8		
Potassium	568			437			446			494			517		
Selenium	0.71			0.59	U		0.79	U		0.86	U		0.69	U	
Silver	0.35	R	K	0.14	R	K	0.27	R	K	0.24	R	K	0.38	R	K
Sodium	26.9	K	K	20.1	K	K	254			224			123		
Thallium	0.18	U		0.2	U		0.26	U		0.29	U		0.23	U	
Vanadium	21.6			14.1			14.6			18.7			23.5		
Zinc	33.2			22.9			16.6			15.6			31.7		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-022103			RB-022103		
Laboratory ID:	B0301-18D			B0301-17D		
Sample Date:	02/21/03			02/21/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L		
Aluminum	17	U		17	U	
Antimony	3	U		3	U	
Arsenic	3	U		3	U	
Barium	4	U		4	U	
Beryllium	0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U	
Calcium	240	U		240	U	
Chromium	0.6	U		0.6	U	
Cobalt	0.9	U		0.9	U	
Copper	4	U		4	U	
Iron	26	U		26	U	
Lead	4	U		4	U	
Magnesium	8	U		8	U	
Manganese	0.8	U		0.8	U	
Mercury	0.14	U		0.14	U	
Nickel	0.8	U		0.8	U	
Potassium	78	U		78	U	
Selenium	9	U		9	U	
Silver	2	U		2	U	
Sodium	83	U		83	U	
Thallium	3	U		3	U	
Vanadium	0.7	U		0.7	U	
Zinc	7	U		7	U	

DATA SUMMARY OF INORGANIC RESULTS
SDG B0301 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
R -- Positive result is considered unusable due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\BACKGROUND STUDY\WATER VALIDATION\B0301\M_B0301.DBF data retrieved on: 04/02/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS126

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301

Matrix (soil/water): SOIL Lab Sample ID: B0301-12B

Level (low/med): MED Date Received: 02/22/03

% Solids: 75.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9600			P
7440-36-0	Antimony	0.18	U	N	P
7440-38-2	Arsenic	9.0			P
7440-39-3	Barium	57.2			P
7440-41-7	Beryllium	0.32			P
7440-43-9	Cadmium	0.074	B	*	P
7440-70-2	Calcium	829			P
7440-47-3	Chromium	14.2			P
7440-48-4	Cobalt	3.6			P
7440-50-8	Copper	8.0			P
7439-89-6	Iron	8670			P
7439-92-1	Lead	32.8			P
7439-95-4	Magnesium	1080			P
7439-96-5	Manganese	245			P
7439-97-6	Mercury	0.089			CV
7440-02-0	Nickel	7.2			P
7440-09-7	Potassium	568			P
7782-49-2	Selenium	0.71	B	*	P
7440-22-4	Silver	0.35	B	PMC 3/13/3	P
7440-23-5	Sodium	26.9	B		P
7440-28-0	Thallium	0.18	U		P
7440-62-2	Vanadium	21.6			P
7440-66-6	Zinc	33.2			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS127

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix (soil/water): SOIL Lab Sample ID: B0301-13B

Level (low/med): MED Date Received: 02/22/03

% Solids: 74.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5650			P
7440-36-0	Antimony	0.20	U	N	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	44.7			P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.046	U	*	P
7440-70-2	Calcium	1120			P
7440-47-3	Chromium	8.6			P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	4.4			P
7439-89-6	Iron	5130			P
7439-92-1	Lead	20.8			P
7439-95-4	Magnesium	695			P
7439-96-5	Manganese	312			P
7439-97-6	Mercury	0.064			CV
7440-02-0	Nickel	4.4			P
7440-09-7	Potassium	437			P
7782-49-2	Selenium	0.59	U	*	P
7440-22-4	Silver	0.14	B	JMC 3/27/03	P
7440-23-5	Sodium	20.1	B		P
7440-28-0	Thallium	0.20	U		P
7440-62-2	Vanadium	14.1			P
7440-66-6	Zinc	22.9			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS128

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301

Matrix (soil/water): SOIL Lab Sample ID: B0301-14B

Level (low/med): MED Date Received: 02/22/03

% Solids: 53.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6250			P
7440-36-0	Antimony	0.26	U	N	P
7440-38-2	Arsenic	5.4			P
7440-39-3	Barium	23.2			P
7440-41-7	Beryllium	0.18	B		P
7440-43-9	Cadmium	0.061	U	*	P
7440-70-2	Calcium	632			P
7440-47-3	Chromium	8.4			P
7440-48-4	Cobalt	2.7	B		P
7440-50-8	Copper	5.3			P
7439-89-6	Iron	7340			P
7439-92-1	Lead	15.0			P
7439-95-4	Magnesium	1040			P
7439-96-5	Manganese	183			P
7439-97-6	Mercury	0.40			CV
7440-02-0	Nickel	4.4			P
7440-09-7	Potassium	446			P
7782-49-2	Selenium	0.79	U	*	P
7440-22-4	Silver	0.27	B	RM 5/3/3	P
7440-23-5	Sodium	254			P
7440-28-0	Thallium	0.26	U		P
7440-62-2	Vanadium	14.6			P
7440-66-6	Zinc	16.6			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSSDUP10

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix (soil/water): SOIL Lab Sample ID: B0301-15B

Level (low/med): MED Date Received: 02/22/03

% Solids: 52.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8260			P
7440-36-0	Antimony	0.29	U	N	P
7440-38-2	Arsenic	6.7			P
7440-39-3	Barium	24.9			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.067	U	*	P
7440-70-2	Calcium	385			P
7440-47-3	Chromium	9.6			P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	5.4			P
7439-89-6	Iron	6500			P
7439-92-1	Lead	16.6			P
7439-95-4	Magnesium	955			P
7439-96-5	Manganese	59.1			P
7439-97-6	Mercury	0.092			CV
7440-02-0	Nickel	5.4			P
7440-09-7	Potassium	494			P
7782-49-2	Selenium	0.86	U	*	P
7440-22-4	Silver	0.24	B	JW 3/3/03	P
7440-23-5	Sodium	224			P
7440-28-0	Thallium	0.29	U		P
7440-62-2	Vanadium	18.7			P
7440-66-6	Zinc	15.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WODSS139

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0301

Matrix (soil/water): SOIL Lab Sample ID: B0301-16B

Level (low/med): MED Date Received: 02/22/03

% Solids: 59.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9150			P
7440-36-0	Antimony	0.23	U	N	P
7440-38-2	Arsenic	9.8			P
7440-39-3	Barium	50.4			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	0.053	U	*	P
7440-70-2	Calcium	442			P
7440-47-3	Chromium	16.4			P
7440-48-4	Cobalt	3.9			P
7440-50-8	Copper	11.0			P
7439-89-6	Iron	10200			P
7439-92-1	Lead	35.7			P
7439-95-4	Magnesium	1190			P
7439-96-5	Manganese	214			P
7439-97-6	Mercury	0.33			CV
7440-02-0	Nickel	6.8			P
7440-09-7	Potassium	517			P
7782-49-2	Selenium	0.69	U	*	P
7440-22-4	Silver	0.38	B	2M 31313	P
7440-23-5	Sodium	123			P
7440-28-0	Thallium	0.23	U		P
7440-62-2	Vanadium	23.5			P
7440-66-6	Zinc	31.7			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-022103

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301___

Matrix (soil/water): WATER_ Lab Sample ID: B0301-18D_____

Level (low/med): MED____ Date Received: 02/22/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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FORM I - IN SW846

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022103

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301___

Matrix (soil/water): WATER_ Lab Sample ID: B0301-17D_____

Level (low/med): MED_____ Date Received: 02/22/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8.0	U		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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FORM I - IN

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0301
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40ml VOA vial HCl	1 Liter VOC+MTBE	1 Liter Amber Glass	1 Liter Amber Glass	1 Liter SVOC	500ml Pest	500ml poly HNO3	TAL Metals	500ml poly HNO3	Dissolved Metals	8 Oz Amber Enviro Sample	TCL VOC	40z Amber Glass widemouth	TCL SVOC + PCB	40z Amber Glass widemouth	TAL Metals + Hg	40z Amber Glass widemouth	TAL Metals + pH	40z Amber Glass widemouth	8 oz Moisture	60z Amber Glass widemouth	Filter Size	COMMENTS
TB-022603	2/20/03 0730		X	X			-01	2	2	+	+	+	4ml 2/21/03																Trip Blank
MW3R	2/20/03 0955		X	X			-02	5	2	1	1	1																		
WFF9-GW1	2/20/03 1305		X	X			-03	5	2	1	1	1																		
MW1	2/20/03 1630		X	X			-04	5	2	1	1	1																		
FB-022603	2/20/03 1725		X	X			-05	5	2	1	1	1																	Rinsate Blank	
* RB-022603	2/20/03 1710		X	X			-06	5	2	1	1	1																	Field Blank	
MW3R-F	2/20/03 0955		X	X			-07	1						1																
WFF9-GW1-F	2/20/03 1305		X	X			-08	1						1																
MW1-F	2/20/03 1630		X	X			-09	1						1																
FB-022603-F	2/20/03 1725		X	X			-10	1						1																
RB-022603-F	2/20/03 1715		X	X			-11	1						1																
WOD-SS-126	2/21/03 0930		X		X		-12	16										9	2	2	2	1							DO MS/MSD	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Chandra Morgan	2/21/03 1800	Tim Sullivan	2-22-03 0930
		/		/
		/		/

ADDITIONAL REMARKS: shipped via Federal Express Airbill NO 8286 8464 5278 Blank water was provided by the laboratory

COOLER TEMP: 6°C

0015

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #:
NAME: Gauth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 846	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Sieve Encore sampler	TCL VOC 40ml Amber glass w/Mouth	TCL SVOC 40z Amber glass w/Mouth PCB	TAL metals 40z Amber glass w/Mouth	TOC 40z Amber glass w/Mouth Moisture	TCL VOC 60 Amber glass w/Mouth 40ml VOA vial HCl	TCL VOC 40ml VOA vial HCl	TOC 1 Liter Amber glass	TCL SVOC 1 Liter Amber glass	TAL Metals 500ml poly HNO3	COMMENTS
WOD-SS-127	2/21/03 / 0958		X		X		-13	7	3	1	1	1	1						
WOD-SS-128	2/21/03 / 1012		X		X		-14	7	3	1	1	1	1						
WOD-SS-Dup10	2/21/03 / 1112		X		X		-15	7	3	1	1	1	1						
WOD-SS-139	2/21/03 / 1102		X		X		-16	7	3	1	1	1	1						
RB-022103	2/21/03 / 1210		X	X			-17	7						2	2	1	1	1	Rinsate Blank
FB-022103	2/21/03 / 1220		X	X			-16	7						2	2	1	1	1	Field Blank
	/																		
	/																		
	/																		
	/																		
	/																		
	/																		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	2/21/03 / 1800	Tim Shelton	2/22/03 0930	shipped via Federal Express Airbill NO 8286 8464 5278 Laboratory supplied blank water	6 °C
		/		/		
		/		/		

0016

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous and five soil samples that were collected on February 20, 2003, and received at Mitkem on February 21, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike. Replicate RPDs were within the QC limits with the exception of methylene chloride.

Sample analysis: due to high concentration of target analytes, samples WOD-SS-126 and WOD-SS-127 were analyzed using medium level analysis. The matrix spike and matrix spike duplicate for WOD-SS-126 was analyzed using low-level analysis. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone, 3-nitroaniline, 4-nitroaniline, N-nitrosodiphenylamine and 3,3'-dichlorobenzidine in S3RLCSD and high recovery of 2,2'-oxybis (1-chloroproane), N-nitrosdiphenylamine and carbazole in S3SLCS. Replicate RPDs were within the QC limits with the exception of 2,4-dinitrophenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of low recovery of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception 4-nitroaniline and fluoranthene.

Sample analysis: no other unusual observation was made for the analysis.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in both columns for samples MW3R and WFF9-GW1.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's of associated samples. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-126. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum	500000	500000	474858	472582.2	94.5	473301	468988.5	93.8	
Antimony		600	-11.2	549.4	91.6	-14.7	551.0	91.8	3
Arsenic		100		92.1	92.1		90.6	90.6	3
Barium		500	-5.7	469.0	93.8	-6.7	461.4	92.3	4
Beryllium		500		452.3	90.5		447.3	89.5	0.5
Cadmium		1000	-1.1	868.1	86.8	-1.2	861.7	86.2	0.7
Calcium	500000	500000	489701	488754.9	97.8	488482	485007.3	97.0	
Chromium		500	-1.2	448.8	89.8	-1.6	451.8	90.4	0.6
Cobalt		500	3.7	445.2	89.0	7.9	448.5	89.7	0.9
Copper		500		501.1	100.2		497.8	99.6	4
Iron	200000	200000	167738	166629.1	83.3	168619	166543.6	83.3	
Lead		500	6.5	450.6	90.1	7.3	448.0	89.6	4
Magnesium	500000	500000	469931	466592.3	93.3	473188	466792.8	93.4	
Manganese		500	-2.8	458.9	91.8	-2.9	456.6	91.3	0.8
Mercury									
Nickel		1000	4.9	871.7	87.2	4.7	876.5	87.6	0.8
Potassium		25000	167.7	24838.5	99.4		23886.1	95.5	78
Selenium		500		481.4	96.3		473.4	94.7	9
Silver		200	12.3	200.4	100.2	9.9	193.8	96.9	2
Sodium		25000	83.4	25200.3	100.8		24916.2	99.7	83
Thallium		100	12.8	97.5	97.5	12.9	95.9	95.9	3
Vanadium		500	-8	452.2	90.4	-8.9	450.6	90.1	0.7
Zinc		1000		854.6	85.5		844.5	84.4	7

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-126		U	IRON	200000	-14.7	145690	-10.71	na	UR
Barium	4	WOD-SS-126	961.5		IRON	200000	-6.7	145690	-4.88	na	na
Cadmium	0.7	WOD-SS-126	1.2		IRON	200000	-1.2	145690	-0.87	L	na
Chromium	0.6	WOD-SS-126	238.1		IRON	200000	-1.6	145690	-1.17	na	na
Manganese	0.8	WOD-SS-126	4109		IRON	200000	-2.9	145690	-2.11	na	na
Vanadium	0.7	WOD-SS-126	362.4		IRON	200000	-8.9	145690	-6.48	na	na
Cobalt	0.9	WOD-SS-126	60.3		IRON	200000	3.7	145690	2.70	na	na
Lead	4	WOD-SS-126	551		IRON	200000	7.3	145690	5.32	na	na
Nickel	0.8	WOD-SS-126	121.6		IRON	200000	4.9	145690	3.57	na	na
Potassium	78	WOD-SS-126	9540		IRON	200000	167.7	145690	122.16	na	na
Silver	2	WOD-SS-126	6		IRON	200000	12.3	145690	8.96	R	na
Sodium	83	WOD-SS-126	452.6		IRON	200000	83.4	145690	60.75	K	na
Thallium	3	WOD-SS-126		U	IRON	200000	12.9	145690	9.40	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-127		U	IRON	200000	-14.7	78271	-5.75	na	UR
Barium	4	WOD-SS-127	681.1		IRON	200000	-6.7	78271	-2.62	na	na
Cadmium	0.7	WOD-SS-127		U	IRON	200000	-1.2	78271	-0.47	na	UL
Chromium	0.6	WOD-SS-127	130.8		IRON	200000	-1.6	78271	-0.63	na	na
Manganese	0.8	WOD-SS-127	4749.2		IRON	200000	-2.9	78271	-1.13	na	na
Vanadium	0.7	WOD-SS-127	215.4		IRON	200000	-8.9	78271	-3.48	na	na
Cobalt	0.9	WOD-SS-127	32.5		IRON	200000	3.7	78271	1.45	na	na
Lead	4	WOD-SS-127	316.5		IRON	200000	7.3	78271	2.86	na	na
Nickel	0.8	WOD-SS-127	67.3		IRON	200000	4.9	78271	1.92	na	na
Potassium	78	WOD-SS-127	6669.2		IRON	200000	167.7	78271	65.63	na	na
Silver	2	WOD-SS-127	2.2		IRON	200000	12.3	78271	4.81	R	na
Sodium	83	WOD-SS-127	306.8		IRON	200000	83.4	78271	32.64	K	na
Thallium	3	WOD-SS-127		U	IRON	200000	12.9	78271	5.05	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-128		U	IRON	200000	-14.7	84060	-6.18	na	UR
Barium	4	WOD-SS-128	265.1		IRON	200000	-6.7	84060	-2.82	na	na
Cadmium	0.7	WOD-SS-128		U	IRON	200000	-1.2	84060	-0.50	na	UL
Chromium	0.6	WOD-SS-128	96.2		IRON	200000	-1.6	84060	-0.67	na	na
Manganese	0.8	WOD-SS-128	2091.9		IRON	200000	-2.9	84060	-1.22	na	na
Vanadium	0.7	WOD-SS-128	167.6		IRON	200000	-8.9	84060	-3.74	na	na
Cobalt	0.9	WOD-SS-128	31.4		IRON	200000	3.7	84060	1.56	na	na
Lead	4	WOD-SS-128	171.6		IRON	200000	7.3	84060	3.07	na	na
Nickel	0.8	WOD-SS-128	50.9		IRON	200000	4.9	84060	2.06	na	na
Potassium	78	WOD-SS-128	5101.9		IRON	200000	167.7	84060	70.48	na	na
Silver	2	WOD-SS-128	3.1		IRON	200000	12.3	84060	5.17	R	na
Sodium	83	WOD-SS-128	2908		IRON	200000	83.4	84060	35.05	na	na
Thallium	3	WOD-SS-128		U	IRON	200000	12.9	84060	5.42	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-DUP10		U	IRON	200000	-14.7	68236	-5.02	na	UR
Barium	4	WOD-SS-DUP10	261.6		IRON	200000	-6.7	68236	-2.29	na	na
Cadmium	0.7	WOD-SS-DUP10		U	IRON	200000	-1.2	68236	-0.41	na	UL
Chromium	0.6	WOD-SS-DUP10	101.2		IRON	200000	-1.6	68236	-0.55	na	na
Manganese	0.8	WOD-SS-DUP10	621.3		IRON	200000	-2.9	68236	-0.99	na	na
Vanadium	0.7	WOD-SS-DUP10	196.4		IRON	200000	-8.9	68236	-3.04	na	na
Cobalt	0.9	WOD-SS-DUP10	23.5		IRON	200000	3.7	68236	1.26	na	na
Lead	4	WOD-SS-DUP10	173.9		IRON	200000	7.3	68236	2.49	na	na
Nickel	0.8	WOD-SS-DUP10	56.5		IRON	200000	4.9	68236	1.67	na	na
Potassium	78	WOD-SS-DUP10	5191		IRON	200000	167.7	68236	57.22	na	na
Silver	2	WOD-SS-DUP10	2.5		IRON	200000	12.3	68236	4.20	R	na
Sodium	83	WOD-SS-DUP10	2355		IRON	200000	83.4	68236	28.45	na	na
Thallium	3	WOD-SS-DUP10		U	IRON	200000	12.9	68236	4.40	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-SS-139		U	IRON	200000	-14.7	133460	-9.81	na	UR
Barium	4	WOD-SS-139	660.2		IRON	200000	-6.7	133460	-4.47	na	na
Cadmium	0.7	WOD-SS-139		U	IRON	200000	-1.2	133460	-0.80	na	UR
Chromium	0.6	WOD-SS-139	214.5		IRON	200000	-1.6	133460	-1.07	na	na
Manganese	0.8	WOD-SS-139	2808.4		IRON	200000	-2.9	133460	-1.94	na	na
Vanadium	0.7	WOD-SS-139	307.2		IRON	200000	-8.9	133460	-5.94	na	na
Cobalt	0.9	WOD-SS-139	50.9		IRON	200000	3.7	133460	2.47	na	na
Lead	4	WOD-SS-139	467		IRON	200000	7.3	133460	4.87	na	na
Nickel	0.8	WOD-SS-139	88.8		IRON	200000	4.9	133460	3.27	na	na
Potassium	78	WOD-SS-139	6771.4		IRON	200000	167.7	133460	111.91	na	na
Silver	2	WOD-SS-139	5		IRON	200000	12.3	133460	8.21	R	na
Sodium	83	WOD-SS-139	1616.3		IRON	200000	83.4	133460	55.65	na	na
Thallium	3	WOD-SS-139		U	IRON	200000	12.9	133460	8.61	na	na

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	WOD-SS-128		WOD-SS-DUP10				
Laboratory ID:	B0301-14B		B0301-15B				
Sample Date:	02/21/03		02/21/03				
Duplicate:	WOD-SS-DUP10		WOD-SS-128				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	6250		8260		-27.7	1.62	1, IN
Antimony	0.26	UR	0.29	UR	-10.9	0.29	
Arsenic	5		7		-21.5	0.29	1, IN
Barium	23.2		24.9		-7.1	0.38	1, IN
Beryllium	0.18		0.21		-15.4	0.05	2, IN
Cadmium	0.061	UL	0.067	UL	-9.4	0.07	
Calcium	632		385		48.6	22.86	1, IN
Chromium	8.4		9.6		-13.3	0.06	1, IN
Cobalt	2.7		2.2		20.4	0.09	1, IN
Copper	5.3		5.4		-1.9	0.38	1, IN
Iron	7340		6500		12.1	2.48	1, IN
Lead	15		16.6		-10.1	0.38	1, IN
Magnesium	1040		955		8.5	0.76	1, IN
Manganese	183		59.1		102.4	0.08	1, J
Mercury	0.4		0.092		125.2	0.02	2, J
Nickel	4.4		5.4		-20.4	0.08	1, IN
Potassium	446		494		-10.2	7.43	1, IN
Selenium	0.79	U	0.86	U	-8.5	0.86	
Silver	0.27	R	0.24	R	11.8	0.19	
Sodium	254		224		12.6	7.90	1, IN
Thallium	0.26	U	0.29	U	-10.9	0.29	
Vanadium	14.6		18.7		-24.6	0.07	1, IN
Zinc	16.6		15.6		6.2	0.67	1, IN

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.

2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.

U - the compound was not detected in the sample at or above the associated numerical value.

NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

J - The positive results should be considered estimated.

B - The result should be considered non-detected or qualitatively questionable due to blank contamination.

IN - The results are acceptable.

COMMENTS

Mn and Hg results qualified as estimated (J).

4/22/03

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

No environmental aqueous samples to qualify with prep. Blank

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum 295.5	59.1	B	17.0	U	17.0	U	17.0	U	-22.644	B	P
Antimony	3.0	U	3.0	B	3.0	U	3.0	U	3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.689 3.4	B	P
Cobalt	0.9	U	0.9	U	0.9	U	0.9	U	0.930 4.6	B	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	6.353 31.8	B	P
Iron	26.0	U	26.0	U	26.0	U	151 30.2	B	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium (415)	8.0	U	8.0	U	66.4	B	8.0	U	124.488 622	B	P
Manganese	0.8	U	0.8	U	0.8	U	0.9	B	2.613 13	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	0.8	U	0.8	U	0.8	U	-0.8	B	1.696 8.48	B	P
Potassium 418.5	83.7	B	78.0	U	78.0	U	78.0	U	78.000	U	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	9.497 47.5	B	P
Sodium	83.0	U	83.0	U	83.0	U	83.0	U	83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc 44	8.8	B	7.0	U	7.0	U	7.0	U	9.914 49.6	B	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301___

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	29.0	B			-1.182	B	P
Antimony			3.0	U	3.0	U			0.150	U	P
Arsenic			3.0	U	3.0	U			0.150	U	P
Barium			4.0	U	4.0	U			0.200	U	P
Beryllium			0.5	U	0.5	U			0.025	U	P
Cadmium			0.7	U	0.7	U			0.035	U	P
Calcium			240.0	U	240.0	U			12.000	U	P
Chromium			0.6	U	0.6	U			0.030	U	P
Cobalt			0.9	U	0.9	U			0.045	U	P
Copper			4.0	U	4.0	U			0.200	U	P
Iron			26.0	U	26.0	U			1.300	U	P
Lead			4.0	U	4.0	U			0.200	U	P
Magnesium			8.0	U	83.0415	B			-0.405	B	P
Manganese			0.8	U	0.8	U			0.066	B	P
Mercury			0.1	U					0.017	U	CV
Nickel			-0.9	B	0.8	U			0.040	U	P
Potassium			78.0	U	78.0	U			3.900	U	P
Selenium			9.0	U	9.0	U			0.450	U	P
Silver			2.0	U	2.0	U			0.100	U	P
Sodium			83.0	U	83.0	U			4.150	U	P
Thallium			3.0	U	3.0	U			0.150	U	P
Vanadium			0.7	U	0.7	U			0.035	U	P
Zinc			7.0	U	7.0	U			0.350	U	P
Cyanide											

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WODSS126S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0301

Matrix (soil/water): SOIL Level (low/med): MED

% Solids for Sample: 75.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony	75-125	12.9514		0.1786	U	27.08	47.8	N	P
Arsenic	75-125	34.9139		9.0028		27.08	95.7		P
Barium	75-125	579.9724		57.2297		541.67	96.5		P
Beryllium	75-125	13.3273		0.3174		13.51	96.3		P
Cadmium	75-125	13.5982		0.0740	B	13.51	100.1		P
Calcium									NR
Chromium	75-125	67.4418		14.1724		54.17	98.3		P
Cobalt	75-125	136.3273		3.5887		135.12	98.2		P
Copper	75-125	74.5172		8.0065		67.26	98.9		P
Iron									NR
Lead	75-125	57.6479		32.7988		27.08	91.8		P
Magnesium									NR
Manganese									NR
Mercury	75-125	0.9025		0.0892		0.77	105.6		CV
Nickel	75-125	140.1188		7.2397		135.12	98.3		P
Potassium									NR
Selenium	75-125	24.5363		0.7097	B	27.08	88.0		P
Silver	75-125	62.2073		0.3545	B	67.26	92.0		P
Sodium									NR
Thallium	75-125	25.2258		0.1786	U	27.08	93.2		P
Vanadium	75-125	149.4202		21.5736		135.12	94.6		P
Zinc	75-125	163.5611		33.1987		135.12	96.5		P
Cyanide									NR

Comments:

TETRA TECH NUS

PHIL- 17005

TO: G. GLENN **DATE:** APRIL 2, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – PH, TOC, and GRAIN SIZE
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0301

SAMPLES: **5/Solid/**

WOD-SS-126
WOD-SS-127
WOD-SS-128
WOD-SS-DUP10
WOD-SS-139

1/Aqueous/

FB-022103
RB-022103

OVERVIEW

The sample set for the Waste Oil Dump Remedial Investigation – NASA Wallops Island, Virginia, SDG B0301 consists of five soil environmental samples (designated WOD-SS-), one field blank (designated FB-), and one rinsate blank (designated RB-). All soil samples were analyzed for pH and Grain Size. The rinsate blank was analyzed for Total Organic Carbon (TOC). One field duplicate pair (samples WOD-SS-128/WOD-SS-DUP10) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 21, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 9045C for pH, EPA Method 415.1 for TOC, and ASTM Method D422 for Grain Size.

SUMMARY

All parameters were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, laboratory duplicate precision, field duplicate precision, logbook documentation, and calculations.

NOTES

The Relative Percent Difference (RPD) for all field duplicate results were within the quality control limit of 50%.

EXECUTIVE SUMMARY

Laboratory Performance: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Results as Reported by the Laboratory
2. Appendix B - Support Documentation

APPENDIX A

Results as Reported by the Laboratory

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WODSS126
Lab ID: B0301-12

Project: Wallops Island
Collection Date: 02/21/03 9:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.5		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WODSS127
Lab ID: B0301-13

Project: Wallops Island
Collection Date: 02/21/03 9:58

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	5.9		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WODSS128
Lab ID: B0301-14

Project: Wallops Island
Collection Date: 02/21/03 10:12

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.6		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WODSSDUP10
Lab ID: B0301-15

Project: Wallops Island
Collection Date: 02/21/03 11:12

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.7		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: WODSS139
Lab ID: B0301-16

Project: Wallops Island
Collection Date: 02/21/03 11:02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
SOIL AND WASTE PH					**SW9045C_S**		
pH	6.4		1.0	pH Units	1	02/25/2003	R1962

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: RB-022103
Lab ID: B0301-17

Project: Wallops Island
Collection Date: 02/21/03 12:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION					**E415.1_TOC_W**		
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *24-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: FB-022103
Lab ID: B0301-18

Project: Wallops Island
Collection Date: 02/21/03 12:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2403
Date Received: 2/25/03

Approved by: _____
R.I. Analytical

Sample #: 001 B0301-12C GRAB 02/21/03 @0930

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.40	99.60
No. 10	1.94	97.66
No. 20	11.61	86.05
No. 40	18.02	68.03
No. 60	19.35	48.68
No. 140	29.08	19.60
No. 200	5.75	13.85

001142

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2403
Date Received: 2/25/03

Approved by: _____
R.I. Analytical

Sample #: 002 B0301-13C GRAB 02/21/03 @0958

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.90	99.10
No. 10	2.02	97.08
No. 20	6.95	90.13
No. 40	19.28	70.85
No. 60	26.47	44.38
No. 140	35.97	8.41
No. 200	3.42	4.99

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2403
Date Received: 2/25/03

Approved by: _____
R.I. Analytical

Sample #: 005 B0301-16C GRAB 02/21/03 @1102

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.49	99.51
No. 10	4.88	94.63
No. 20	9.52	85.11
No. 40	17.93	67.18
No. 60	17.91	49.27
No. 140	24.60	24.67
No. 200	7.13	17.54

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2403
Date Received: 2/25/03

Approved by: _____
R.I. Analytical

Sample #: 003 B0301-14C GRAB 02/21/03 @1012

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.00	100.00
No. 10	1.43	98.57
No. 20	10.74	87.83
No. 40	15.58	72.25
No. 60	19.67	52.58
No. 140	41.31	11.27
No. 200	3.84	7.43

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0302-2403
Date Received: 2/25/03

Approved by: _____
R.I. Analytical

Sample #: 004 B0301-15C GRAB 02/21/03 @1112

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.07	99.93
No. 10	2.88	97.05
No. 20	14.35	82.70
No. 40	17.07	65.63
No. 60	19.72	45.91
No. 140	37.27	8.64
No. 200	3.26	5.38

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0301

CHAIN-OF-CUSTODY RECORD

Subcontractor:
RI Analytical Laboratory
41 Illinois Ave
Warwick, RI 02886

(401) 737-8500

25-Feb-03

Sample ID	Matrix	Collection Date	Requested Tests						
			D422						
B0301-12C	Soil	2/21/03 9:30:00 AM	1						
B0301-13C	Soil	2/21/03 9:58:00 AM	1						
B0301-14C	Soil	2/21/03 10:12:00 AM	1						
B0301-15C	Soil	2/21/03 11:12:00 AM	1						
B0301-16C	Soil	2/21/03 11:02:00 AM	1						

1) D422 or equivalent method for the analysis of GRAIN SIZE

0302 - 0240 3

Comments: Please analyze these samples as quickly as possible. After analysis, the samples do not need to be returned and can be disposed per your standard laboratory practices. PO#296- INCLUDE ALL RAW DATA.

0114

		Date/Time			Date/Time
Relinquished by:	J. Davis	2-25-03	**Received by:**	M. Sousa	2-25 1645 ICDD
Relinquished by:			**Received by:**		

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 2/25/03
Date Reported: 3/03/03
P.O. #: 296
Work Order #: 0302-02403

DESCRIPTION: PROJECT# B0301 (FIVE SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

001136

APPENDIX B

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		LAB PROJECT #:
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE	B0301
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	TURNAROUND TIME:
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	1 Liter Amber glass TCL VOC + MTBE	1 Liter Amber glass TCL SVOC	500 ml poly HNO3 TAL Pest	500 ml poly HNO3 TAL metals	Dissolved metals 0.45um Groovil Sample	TCL VOC 40z Amber glass widemouth	TCL SVOC + PCB 40z Amber glass widemouth	TAL Metals + Hg 40z Amber glass widemouth	TAL Hg Mercuric 80z Amber glass widemouth	COMMENTS
TB-022603	2/20/03 0730		X	X			-01	2	2										Trip Blank
MW3R	2/20/03 0955		X	X			-02	5	2	1	1	1							
WFF9-GW1	2/20/03 1305		X	X			-03	5	2	1	1	1							
MW1	2/20/03 1630		X	X			-04	5	2	1	1	1							Rinsate Blank
FB-022003	2/20/03 1725		X	X			-05	5	2	1	1	1							Field Blank
RB-022003	2/20/03 1710		X	X			-06	5	2	1	1	1							
MW3R-F	2/20/03 0955		X	X			-07	1					1						
WFF9-GW1-F	2/20/03 1305		X	X			-08	1					1						
MW1-F	2/20/03 1630		X	X			-09	1					1						
FB-022003-F	2/20/03 1725		X	X			-10	1					1						
RB-022003-F	2/20/03 1715		X	X			-11	1					1						
WOD-SS-126	2/21/03 0930		X		X		-12	16						9	2	2	2	1	DO MS/MSD

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Morgan	2/21/03 1800	Tim Shuman	2-22-03 0930
		/		/
		/		/

ADDITIONAL REMARKS: shipped via Federal Express Airbill NO 8286 8464 5278 Blank water was provided by the laboratory

COOLER TEMP: 6°C

0015

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #:
NAME: Gauth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 646	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: Sieve Enviro sampler	TCL VOC 40ml Amber Glass Wildmouth	TCL SVOC 40z Amber Glass Wildmouth PCB	TAL metals 40z Amber Glass Wildmouth PH	TOL 0/0 Moisture 60z Amber Glass Wildmouth	Grain Size 8oz	TCL VOC 40ml VOA Vial HCl	TOC 40ml VOA Vial HCl	TCL SVOC 1 Liter Amber Glass	TCL PCB 1 Liter Amber Glass	TAL Metals 500ml poly HNO3			COMMENTS
WOD-SS-127	2/21/03 0958		X		X		-13	7	3	1	1	1	1									
WOD-SS-128	2/21/03 1012		X		X		-14	7	3	1	1	1	1									
WOD-SS-Dup10	2/21/03 1112		X		X		-15	7	3	1	1	1	1									
WOD-SS-139	2/21/03 1102		X		X		-16	7	3	1	1	1	1									
RB-022103	2/21/03 1210		X	X			-17	7						2	2	1	1	1				Rinsate Blank
FB-022103	2/21/03 1220		X	X			-16	7						2	2	1	1	1				Field Blank
	/																					
	/																					
	/																					
	/																					
	/																					
	/																					

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	2/21/03 1800	Tim Shelton	2/22/03 0930	Shipped via Federal Express Airbill NO 8286 8464 5278 Laboratory supplied blank water	6 °C
		/		/		
		/		/		

0016

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous and five soil samples that were collected on February 20, 2003, and received at Mitkem on February 21, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH and TOC. The analysis results for pH and TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of several surrogates in both the matrix spike and matrix spike. Replicate RPDs were within the QC limits with the exception of methylene chloride.

Sample analysis: due to high concentration of target analytes, samples WOD-SS-126 and WOD-SS-127 were analyzed using medium level analysis. The matrix spike and matrix spike duplicate for WOD-SS-126 was analyzed using low-level analysis. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone, 3-nitroaniline, 4-nitroaniline, N-nitrosodiphenylamine and 3,3'-dichlorobenzidine in S3RLCSD and high recovery of 2,2'-oxybis (1-chloroproane), N-nitrosdiphenylamine and carbazole in S3SLCS. Replicate RPDs were within the QC limits with the exception of 2,4-dinitrophenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of low recovery of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception 4-nitroaniline and fluoranthene.

Sample analysis: no other unusual observation was made for the analysis.

4. Pesticides Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in both columns for samples MW3R and WFF9-GW1.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

5. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WOD-SS-126. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WOD-SS-126. Spike recoveries were within the QC limits with the exception of antimony. Antimony is flagged with an "N" flag on Form 1's of associated samples. A post digest spike was performed for antimony with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WOD-SS-126. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. pH Analysis:

Sample analysis: no unusual observation was made for the analysis.

8. Grain size Analysis:

Grain size analysis was performed by sub-contract laboratory RI Analytical Laboratories of Warwick, RI. The RIAL report is included following the blue section divider after the metals section of the data report.

9. TOC Analysis:

The TOC results for aqueous samples are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The analyses for Total Organic Carbon for the soil samples were subcontracted to STL Burlington of Colchester, VT. The TOC results are not available at this time, but will be submitted as a separate addendum to this report when received from STL Burlington.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 21, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC/SVOC/PCB CTO 848, NASA WALLOPS ISLAND SDG B0320**		
SAMPLES:	1/Aqueous TB-022503* 1/Soil WOD-SU-127-0203		

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0320 consists of one (1) trip blank, and one (1) environmental soil sample. The environmental sample was analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on February 25, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated (J).
- The aqueous volatile continuing calibration performed on the "V2" instrument on March 4 at 09:44 exceeded the 25% (but was <50%) difference quality control criteria for 4-methyl-2-pentanone, 2-hexanone, and methylene chloride. The positive result for methylene chloride in the trip blank was qualified as estimated (J). No qualifications were made to the remaining aforementioned compounds because they were non-detected.

- The semivolatile initial calibration performed on March 12 exceeded the 30% (and was >50%) relative percent difference (RPD) quality control criteria for 3-nitroaniline. The result for 3-nitroaniline in sample WOD-SU-127-0203 was qualified as estimated (UJ).

- The semivolatile continuing calibration performed on March 15 at 00:31 exceeded the 25% (and was >50%) percent difference quality control criteria for benzaldehyde. The result for benzaldehyde in sample WOD-SU-127-0203 was qualified as estimated (UJ).

- The following compound was detected in the trip blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	2.0 ug/kg	20 ug/kg

Sample aliquot, percent solids, and dilution factors were taken into consideration when applying the blank action levels. Positive results for methylene chloride below the blank action level were qualified as non-detected (B). The trip blank was not qualified for method blank contamination.

Notes

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The aqueous volatile initial calibration performed on the "V2" instrument on February 26 exceeded the 30% (but was <50%) RPD quality control criteria for acetone. No qualifications were made on this basis because the result for acetone was non-detected in the aqueous sample.

The soil volatile continuing calibration performed on the "V5" instrument on March 4 at 13:48 exceeded the 30% (but was <50%) percent difference quality control criteria for 1,2,4-trichlorobenzene. No qualifications were made on this basis because the result for 1,2,4-trichlorobenzene was non-detected in the soil sample.

The semivolatile initial calibration performed on March 12 exceeded the 30% (but was <50%) RPD quality control criteria for 4-chloroaniline, carbazole, and benzaldehyde. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile continuing calibration performed on March 15 at 00:31 exceeded the 25% (but was <50%) percent difference quality control criteria for 4-chloroaniline, hexachlorocyclopentadiene, and atrazine. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile continuing calibration performed on March 15 at 16:32 exceeded the 25% (but was <50%) difference quality control criteria for 2,2'-oxybis(1-chloropropane), 4-chloroaniline, carbazole, 3,3'-dichlorobenzidine, and atrazine (and was >50%) for hexachlorocyclopentadiene, benzaldehyde, 3-nitroaniline, and 4-nitroaniline. No qualifications were made on this basis because no environmental samples were quantitated using this calibration.

The recoveries of 2,2'-oxybis(1-chloropropane), N-nitrosodiphenylamine, and carbazole exceeded the percent recovery quality control criteria in the semivolatile blank spike. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0320 MEDIA: WATER DATA FRACTION:

nsample	TB-022503
samp_date	2/25/2003
lab_id	B0320-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	2		
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-022503
samp_date	2/25/2003
lab_id	B0320-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	J	C
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0320 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	9	U	
1,1,2,2-TETRACHLOROETHANE	9	U	
1,1,2-TRICHLOROETHANE	9	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	9	U	
1,1-DICHLOROETHANE	9	U	
1,1-DICHLOROETHENE	9	U	
1,2,4-TRICHLOROBENZENE	9	U	
1,2,4-TRIMETHYLBENZENE	9	U	
1,2-DIBROMO-3-CHLOROPROPANE	9	U	
1,2-DIBROMOETHANE	9	U	
1,2-DICHLOROBENZENE	9	U	
1,2-DICHLOROETHANE	9	U	
1,2-DICHLOROPROPANE	9	U	
1,3,5-TRIMETHYLBENZENE	9	U	
1,3-DICHLOROBENZENE	9	U	
1,4-DICHLOROBENZENE	9	U	
2-BUTANONE	9	U	
2-HEXANONE	9	U	
4-METHYL-2-PENTANONE	9	U	
ACETONE	8	J	P
BENZENE	9	U	
BROMODICHLOROMETHANE	9	U	
BROMOFORM	9	U	
BROMOMETHANE	9	U	
CARBON DISULFIDE	9	U	
CARBON TETRACHLORIDE	9	U	
CHLOROBENZENE	9	U	
CHLORODIBROMOMETHANE	9	U	
CHLOROETHANE	9	U	
CHLOROFORM	9	U	

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02B
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	9	U	
CIS-1,2-DICHLOROETHENE	9	U	
CIS-1,3-DICHLOROPROPENE	9	U	
CYCLOHEXANE	9	U	
DICHLORODIFLUOROMETHANE	9	U	
ETHYLBENZENE	9	U	
ISOPROPYLBENZENE	9	U	
M+P-XYLENES	9	U	
METHYL ACETATE	9	U	
METHYL CYCLOHEXANE	9	U	
METHYL TERT-BUTYL ETHER	9	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	9	U	
STYRENE	9	U	
TETRACHLOROETHENE	9	U	
TOLUENE	9	U	
TOTAL XYLENES	9	U	
TRANS-1,2-DICHLOROETHENE	9	U	
TRANS-1,3-DICHLOROPROPENE	9	U	
TRICHLOROETHENE	9	U	
TRICHLOROFLUOROMETHANE	9	U	
VINYL CHLORIDE	9	U	

PROJ_NO: 4740

SDG: B0320 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	360	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	360	U	
2,4,5-TRICHLOROPHENOL	920	U	
2,4,6-TRICHLOROPHENOL	360	U	
2,4-DICHLOROPHENOL	360	U	
2,4-DIMETHYLPHENOL	360	U	
2,4-DINITROPHENOL	920	U	
2,4-DINITROTOLUENE	360	U	
2,6-DINITROTOLUENE	360	U	
2-CHLORONAPHTHALENE	360	U	
2-CHLOROPHENOL	360	U	
2-METHYLNAPHTHALENE	360	U	
2-METHYLPHENOL	360	U	
2-NITROANILINE	920	U	
2-NITROPHENOL	360	U	
3,3'-DICHLOROBENZIDINE	360	U	
3-NITROANILINE	920	UJ	C
4,6-DINITRO-2-METHYLPHENOL	920	U	
4-BROMOPHENYL PHENYL ETHER	360	U	
4-CHLORO-3-METHYLPHENOL	360	U	
4-CHLOROANILINE	360	U	
4-CHLOROPHENYL PHENYL ETHER	360	U	
4-METHYLPHENOL	360	U	
4-NITROANILINE	920	U	
4-NITROPHENOL	920	U	
ACENAPHTHENE	360	U	
ACENAPHTHYLENE	360	U	
ACETOPHENONE	360	U	
ANTHRACENE	360	U	
ATRAZINE	360	U	

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	360	UJ	C
BENZO(A)ANTHRACENE	360	U	
BENZO(A)PYRENE	360	U	
BENZO(B)FLUORANTHENE	360	U	
BENZO(G,H,I)PERYLENE	360	U	
BENZO(K)FLUORANTHENE	360	U	
BIS(2-CHLOROETHOXY)METHANE	360	U	
BIS(2-CHLOROETHYL)ETHER	360	U	
BIS(2-ETHYLHEXYL)PHTHALATE	190	J	P
BUTYL BENZYL PHTHALATE	360	U	
CAPROLACTAM	360	U	
CARBAZOLE	360	U	
CHRYSENE	360	U	
DIBENZO(A,H)ANTHRACENE	360	U	
DIBENZOFURAN	360	U	
DIETHYL PHTHALATE	360	U	
DIMETHYL PHTHALATE	360	U	
DI-N-BUTYL PHTHALATE	360	U	
DI-N-OCTYL PHTHALATE	360	U	
FLUORANTHENE	360	U	
FLUORENE	360	U	
HEXACHLOROBENZENE	360	U	
HEXACHLOROBUTADIENE	360	U	
HEXACHLOROCYCLOPENTADIENE	360	U	
HEXACHLOROETHANE	360	U	
INDENO(1,2,3-CD)PYRENE	360	U	
ISOPHORONE	360	U	
NAPHTHALENE	360	U	
NITROBENZENE	360	U	
N-NITROSO-DI-N-PROPYLAMINE	360	U	

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	360	U	
PENTACHLOROPHENOL	920	U	
PHENANTHRENE	360	U	
PHENOL	360	U	
PYRENE	360	U	

PROJ_NO: 4740

SDG: B0320 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02A
qc_type	NM
units	UG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	36	U	
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

Appendix B

Results as Reported by the Laboratory

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: B0320-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5241

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: B0320-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5241

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	2	
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: B0320-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5241

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02B

Sample wt/vol: 6.2 (g/mL) G Lab File ID: V5E4267

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. 10 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	9	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02B

Sample wt/vol: 6.2 (g/mL) G Lab File ID: V5E4267

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. 10 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	9	U
95-47-6	o-Xylene	9	U
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	9	U
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02B

Sample wt/vol: 6.2 (g/mL) G Lab File ID: V5E4267

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. 10 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S3C2356

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S3C2356

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02A

Sample wt/vol: 30.8 (g/mL) G Lab File ID: E1D9611F

% Moisture: 10 decanted: (Y/N) N Date Received: 02/26/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

Appendix C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0320
NAME: Garth Glenn	FAX:	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl; TCL VOC; 5 gram Encore Sampler; TCL VOC 40z Amber Glass Wildmouth; TCL SVOC + PCB 40z Amber Glass Wildmouth; TAL Metals % Moisture	COMMENTS
TB-022503	2/25/03 0715		X	X			01	2	2	Trip Blank
~~WOO-SW-126~~ DW	/									
WOO-SW-127-0203	2/25/03 1520		X		X		02	5	3 1 1	
~~WOO-SW-128~~ DW	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Donald Whalen	2/25/03 1630		2-26-03 0900	Fed Ex airbill # 8286 8470 8060	3C
		/		/		
		/		/		

600000

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.
-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

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Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0320

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0227LCSS	LCS	B0320	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	PBS	0227PBS	M_BLANK	B0320	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	HG	02/25/03	02/27/03	02/28/03	2	1	3
%	LCSS	0227LCSS	LCS	B0320	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	PBS	0227PBS	M_BLANK	B0320	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	M	02/25/03	02/27/03	02/27/03	2	0	2
%	SBLK3S	MB-5840	M_BLANK	B0320	OS	/ /	02/28/03	03/15/03	0	15	0
%	SBLK3SLCS	LCS-5840	LCS	B0320	OS	/ /	02/28/03	03/15/03	0	15	0
%	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	OS	02/25/03	02/28/03	03/15/03	3	15	18
UG/L	TB-022503	B0320-01A	NORMAL	B0320	OV	02/25/03	03/04/03	03/04/03	7	0	7
%	VBLK2E	V2B0304A	M_BLANK	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK2ELCS	V2L0304A	LCS	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5L	V5B0304A	M_BLANK	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCS	V5L0304A	LCS	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCSD	V5L0304B	LCSD	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	WOD-SU-127-0203	B0320-02B	NORMAL	B0320	OV	02/25/03	03/04/03	03/04/03	7	0	7
%	BBLK1G	MB-5838	M_BLANK	B0320	PCB	/ /	02/28/03	03/04/03	0	4	0
%	BBLK1GLCS	LCS-5838	LCS	B0320	PCB	/ /	02/28/03	03/04/03	0	4	0
%	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	PCB	02/25/03	02/28/03	03/04/03	3	4	7

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0320

Mitkem Project ID: B0320

March 24, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and one soil samples that were collected on February 25, 2003, and received at Mitkem on February 26, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of 2,2'-oxybis (1-chloropropane), N-nitrosodiphenylamine and carbazole.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/24/03

ALKANE NARRATIVE REPORT
Report date : 03/17/2003
SDG: B0320

Client Sample ID: SV1270203 Lab Sample ID: B0320-02A File ID: S3C2356

Compound	RT	Est. Conc.	Q
Cyclic alkane	15.67	200	J

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0320

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0320-01A	TB-022503	
B0320-02A	SV1270203	WOD-SV-127-0203
B0320-02B	SV1270203	WOD-SV-127-0203

**** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"***

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: V2F5112 BFB Injection Date: 02/26/03

Instrument ID: V2 BFB Injection Time: 1222

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.4
75	30.0 - 60.0% of mass 95	44.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.3 (7.2)1
176	95.0 - 101.0% of mass 174	70.3 (95.4)1
177	5.0 - 9.0% of mass 176	4.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502A	V2S0226A	V2F5113	02/26/03	1249
02	VSTD0052A	V2S0226B	V2F5114	02/26/03	1317
03	VSTD2002A	V2S0226D	V2F5116	02/26/03	1415
04	VSTD1002A	V2S0226E	V2F5117	02/26/03	1443
05	VSTD0202A	V2S0226F	V2F5118	02/26/03	1512
06					
07					
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19					
20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.372	0.293	0.292	0.298	0.284	0.308	11.7
* Chloromethane	0.520	0.413	0.405	0.410	0.381	0.426	12.7*
Vinyl Chloride	0.388	0.309	0.310	0.313	0.294	0.323	11.5
Bromomethane	0.248	0.188	0.184	0.155	0.133	0.182	23.8
Chloroethane	0.208	0.158	0.162	0.146	0.132	0.161	17.6
Trichlorofluoromethane	0.341	0.274	0.278	0.287	0.285	0.293	9.3
1,1-Dichloroethene	0.225	0.211	0.218	0.215	0.205	0.215	3.5
Acetone	0.127	0.075	0.061	0.064	0.055	0.076	38.3
Carbon Disulfide	0.904	0.711	0.721	0.718	0.691	0.749	11.7
Methylene Chloride	0.272	0.235	0.233	0.225	0.219	0.237	8.7
trans-1,2-Dichloroethene	0.245	0.236	0.237	0.229	0.220	0.233	4.0
Methyl tert-butyl ether	0.664	0.536	0.556	0.536	0.495	0.557	11.4
* 1,1-Dichloroethane	0.489	0.486	0.495	0.484	0.471	0.485	1.8*
2-Butanone	0.132	0.108	0.100	0.099	0.092	0.106	14.4
cis-1,2-Dichloroethene	0.290	0.277	0.277	0.273	0.259	0.275	4.0
Chloroform	0.448	0.447	0.458	0.448	0.429	0.446	2.4
1,1,1-Trichloroethane	0.369	0.361	0.373	0.362	0.355	0.364	1.9
Carbon Tetrachloride	0.301	0.297	0.311	0.307	0.302	0.304	1.8
1,2-Dichloroethane	0.314	0.316	0.323	0.307	0.284	0.309	4.9
Benzene	1.017	1.006	1.020	0.982	0.900	0.985	5.0
Trichloroethene	0.245	0.248	0.244	0.248	0.240	0.245	1.4
1,2-Dichloropropane	0.249	0.249	0.254	0.242	0.228	0.244	4.2
Bromodichloromethane	0.336	0.339	0.348	0.340	0.335	0.340	1.6
cis-1,3-Dichloropropene	0.403	0.414	0.430	0.423	0.415	0.417	2.5
4-Methyl-2-pentanone	0.315	0.206	0.204	0.206	0.198	0.226	22.1
Toluene	0.985	0.992	1.018	0.986	0.908	0.978	4.2
trans-1,3-Dichloropropene	0.332	0.352	0.378	0.368	0.359	0.358	4.8
1,1,2-Trichloroethane	0.196	0.200	0.200	0.195	0.192	0.197	1.6
Tetrachloroethene	0.319	0.310	0.296	0.305	0.296	0.305	3.2
2-Hexanone	0.242	0.193	0.195	0.208	0.202	0.208	9.6
Dibromochloromethane	0.364	0.360	0.352	0.358	0.358	0.358	1.2
1,2-Dibromoethane	0.303	0.315	0.311	0.322	0.319	0.314	2.3
* Chlorobenzene	0.955	0.950	0.941	0.897	0.809	0.910	6.7*
Ethylbenzene	0.486	0.494	0.497	0.488	0.447	0.482	4.2
m,p-Xylene	0.608	0.614	0.603	0.563	0.521	0.582	6.8
o-Xylene	0.596	0.599	0.605	0.568	0.522	0.578	5.9
Xylene (Total)	0.604	0.609	0.603	0.565	0.521	0.580	6.5

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.983	1.023	1.021	0.944	0.882	0.971	6.1
Bromoform	*	0.239	0.240	0.231	0.242	0.238	0.238	1.9*
Isopropylbenzene		1.412	1.463	1.480	1.447	1.355	1.431	3.5
1,1,2,2-Tetrachloroethane	*	0.885	0.833	0.814	0.779	0.782	0.819	5.3*
1,3,5-Trimethylbenzene		2.724	2.653	2.654	2.465	2.485	2.596	4.4
1,2,4-Trimethylbenzene		2.717	2.651	2.732	2.625	2.679	2.681	1.7
1,3-Dichlorobenzene		1.491	1.468	1.456	1.474	1.556	1.489	2.7
1,4-Dichlorobenzene		1.525	1.476	1.460	1.488	1.506	1.491	1.7
1,2-Dichlorobenzene		1.411	1.346	1.325	1.342	1.312	1.347	2.8
1,2-Dibromo-3-chloropropane		0.126	0.113	0.106	0.112	0.119	0.115	6.6
1,2,4-Trichlorobenzene		0.552	0.654	0.690	0.774	0.870	0.708	17.0
1,1,2-Trichlo-1,2,2-trifluor		0.279	0.221	0.223	0.219	0.214	0.231	11.7
Methyl Acetate		0.218	0.168	0.160	0.160	0.149	0.171	15.8
Cyclohexane		0.558	0.443	0.460	0.444	0.456	0.472	10.3
Methylcyclohexane		0.509	0.410	0.412	0.407	0.391	0.426	11.1
Dibromofluoromethane		0.250	0.257	0.244	0.258	0.248	0.251	2.4
1,2-Dichloroethane-d4		0.061	0.065	0.061	0.064	0.061	0.062	3.2
Toluene-d8		1.332	1.320	1.230	1.312	1.215	1.282	4.3
Bromofluorobenzene		0.527	0.508	0.491	0.516	0.495	0.507	2.9

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: V2F5230 BFB Injection Date: 03/04/03

Instrument ID: V2 BFB Injection Time: 0925

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.4
75	30.0 - 60.0% of mass 95	40.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	85.1
175	5.0 - 9.0% of mass 174	5.9 (6.9)1
176	95.0 - 101.0% of mass 174	81.7 (96.0)1
177	5.0 - 9.0% of mass 176	5.4 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502E	V2S0304A	V2F5231	03/04/03	0944
02	VBLK2E	V2B0304A	V2F5233	03/04/03	1056
03	V2ELCS	V2L0304A	V2F5234	03/04/03	1130
04	TB-022503	B0320-01A	V2F5241	03/04/03	1453
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V2 Calibration Date: 03/04/03 Time: 0944

Lab File ID: V2F5231 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.308	0.272	0.01	11.7	20.0	
Chloromethane	0.426	0.397	0.1	6.8	20.0	
Vinyl Chloride	0.323	0.315	0.01	2.5	20.0	
Bromomethane	0.182	0.223	0.01	22.5	20.0	<-
Chloroethane	0.161	0.175	0.01	8.7	20.0	
Trichlorofluoromethane	0.293	0.305	0.01	4.1	20.0	
1,1-Dichloroethene	0.215	0.235	0.01	9.3	20.0	
Acetone	0.076	0.085	0.01	11.8	20.0	
Carbon Disulfide	0.749	0.824	0.01	10.0	20.0	
Methylene Chloride	0.237	0.320	0.01	35.0	20.0	<-
trans-1,2-Dichloroethene	0.233	0.258	0.01	10.7	20.0	
Methyl tert-butyl ether	0.557	0.554	0.01	0.5	20.0	
1,1-Dichloroethane	0.485	0.482	0.1	0.6	20.0	
2-Butanone	0.106	0.100	0.01	5.7	20.0	
cis-1,2-Dichloroethene	0.275	0.280	0.01	1.8	20.0	
Chloroform	0.446	0.466	0.01	4.5	20.0	
1,1,1-Trichloroethane	0.364	0.362	0.01	0.5	20.0	
Carbon Tetrachloride	0.304	0.303	0.01	0.3	20.0	
1,2-Dichloroethane	0.309	0.306	0.01	1.0	20.0	
Benzene	0.985	1.033	0.01	4.9	20.0	
Trichloroethene	0.245	0.245	0.01	0.0	20.0	
1,2-Dichloropropane	0.244	0.242	0.01	0.8	20.0	
Bromodichloromethane	0.340	0.338	0.01	0.6	20.0	
cis-1,3-Dichloropropene	0.417	0.398	0.01	4.6	20.0	
4-Methyl-2-pentanone	0.226	0.164	0.01	27.4	20.0	<-
Toluene	0.978	1.005	0.01	2.8	20.0	
trans-1,3-Dichloropropene	0.358	0.347	0.01	3.1	20.0	
1,1,2-Trichloroethane	0.197	0.205	0.01	4.1	20.0	
Tetrachloroethene	0.305	0.319	0.01	4.6	20.0	
2-Hexanone	0.208	0.152	0.01	26.9	20.0	<-
Dibromochloromethane	0.358	0.362	0.01	1.1	20.0	
1,2-Dibromoethane	0.314	0.317	0.01	1.0	20.0	
Chlorobenzene	0.910	0.949	0.3	4.3	20.0	
Ethylbenzene	0.482	0.474	0.01	1.6	20.0	
m,p-Xylene	0.582	0.597	0.01	2.6	20.0	
o-Xylene	0.578	0.586	0.01	1.4	20.0	
Xylene (Total)	0.580	0.594	0.01	2.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V2 Calibration Date: 03/04/03 Time: 0944

Lab File ID: V2F5231 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	0.971	1.023	0.01	5.4	20.0	
Bromoform	0.238	0.252	0.1	5.9	20.0	
Isopropylbenzene	1.431	1.404	0.01	1.9	20.0	
1,1,2,2-Tetrachloroethane	0.819	0.755	0.3	7.8	20.0	
1,3,5-Trimethylbenzene	2.596	2.259	0.01	13.0	20.0	
1,2,4-Trimethylbenzene	2.681	2.285	0.01	14.8	20.0	
1,3-Dichlorobenzene	1.489	1.368	0.01	8.1	20.0	
1,4-Dichlorobenzene	1.491	1.384	0.01	7.2	20.0	
1,2-Dichlorobenzene	1.347	1.264	0.01	6.2	20.0	
1,2-Dibromo-3-chloropropane	0.115	0.094	0.01	18.3	20.0	
1,2,4-Trichlorobenzene	0.708	0.550	0.01	22.3	20.0	<-
1,1,2-Trichlo-1,2,2-trifluor	0.231	0.252	0.01	9.1	20.0	
Methyl Acetate	0.171	0.172	0.01	0.6	20.0	
Cyclohexane	0.472	0.423	0.01	10.4	20.0	
Methylcyclohexane	0.426	0.406	0.01	4.7	20.0	
Dibromofluoromethane	0.251	0.262	0.01	4.4	20.0	
1,2-Dichloroethane-d4	0.062	0.066	0.01	6.4	20.0	
Toluene-d8	1.282	1.298	0.01	1.2	20.0	
Bromofluorobenzene	0.507	0.517	0.01	2.0	20.0	

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: V5E4160 BFB Injection Date: 02/27/03

Instrument ID: V5 BFB Injection Time: 1640

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.8
75	30.0 - 60.0% of mass 95	39.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.3
175	5.0 - 9.0% of mass 174	6.1 (7.8)1
176	95.0 - 101.0% of mass 174	73.8 (95.4)1
177	5.0 - 9.0% of mass 176	4.7 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD2005F	V5S0227C	V5E4163	02/27/03	1802
02	VSTD1005F	V5S0227D	V5E4164	02/27/03	1831
03	VSTD0505F	V5S0227A	V5E4165	02/27/03	1901
04	VSTD0205F	V5S0227E	V5E4166	02/27/03	1930
05	VSTD0055F	V5S0227B	V5E4167	02/27/03	1959
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V5 Calibration Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Calibration Time(s): 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E4167 RRF20 =V5E4166
RRF50 =V5E4165 RRF100=V5E4164 RRF200=V5E4163

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD	
Dichlorodifluoromethane		0.358	0.336	0.379	0.360	0.362	0.359	4.3	
Chloromethane	*	0.308	0.313	0.358	0.329	0.317	0.325	6.1	*
Vinyl Chloride		0.274	0.292	0.322	0.304	0.293	0.297	5.9	
Bromomethane		0.274	0.230	0.242	0.209	0.179	0.227	15.7	
Chloroethane		0.133	0.142	0.158	0.146	0.132	0.142	7.5	
Trichlorofluoromethane		0.310	0.349	0.400	0.389	0.381	0.366	10.0	
1,1-Dichloroethene		0.204	0.216	0.248	0.232	0.223	0.225	7.5	
Acetone		0.137	0.089	0.084	0.077	0.073	0.092	28.2	
Carbon Disulfide		0.689	0.684	0.771	0.741	0.698	0.717	5.3	
Methylene Chloride		0.458	0.301	0.313	0.301	0.281	0.331	21.8	
trans-1,2-Dichloroethene		0.276	0.274	0.294	0.284	0.274	0.280	3.1	
Methyl tert-butyl ether		0.726	0.774	0.831	0.790	0.763	0.777	5.0	
1,1-Dichloroethane	*	0.470	0.468	0.501	0.492	0.474	0.481	3.0	*
2-Butanone		0.094	0.116	0.124	0.121	0.114	0.114	10.3	
cis-1,2-Dichloroethene		0.297	0.282	0.306	0.292	0.279	0.291	3.8	
Chloroform		0.456	0.455	0.479	0.465	0.457	0.462	2.2	
1,1,1-Trichloroethane		0.365	0.343	0.385	0.372	0.365	0.366	4.1	
Carbon Tetrachloride		0.328	0.319	0.354	0.347	0.345	0.339	4.3	
1,2-Dichloroethane		0.389	0.370	0.405	0.383	0.375	0.384	3.6	
Benzene		0.955	0.911	0.991	0.931	0.878	0.933	4.6	
Trichloroethene		0.258	0.248	0.273	0.266	0.255	0.260	3.7	
1,2-Dichloropropane		0.260	0.246	0.268	0.254	0.236	0.253	4.8	
Bromodichloromethane		0.334	0.332	0.369	0.359	0.352	0.349	4.5	
cis-1,3-Dichloropropene		0.397	0.392	0.432	0.417	0.400	0.408	4.1	
4-Methyl-2-pentanone		0.229	0.247	0.272	0.258	0.235	0.248	7.0	
Toluene		1.090	1.026	1.109	1.045	1.015	1.057	3.9	
trans-1,3-Dichloropropene		0.342	0.372	0.402	0.388	0.382	0.377	5.9	
1,1,2-Trichloroethane		0.233	0.227	0.249	0.236	0.230	0.235	3.6	
Tetrachloroethene		0.291	0.275	0.308	0.294	0.289	0.291	4.0	
2-Hexanone		0.243	0.250	0.274	0.266	0.247	0.256	5.2	
Dibromochloromethane		0.355	0.369	0.411	0.403	0.407	0.389	6.5	
1,2-Dibromoethane		0.371	0.371	0.407	0.400	0.398	0.389	4.4	
Chlorobenzene	*	1.091	1.022	1.087	1.049	1.014	1.053	3.4	*
Ethylbenzene		0.565	0.527	0.587	0.562	0.546	0.557	4.0	
Xylene (Total)		0.704	0.659	0.714	0.676	0.644	0.679	4.3	
Styrene		1.162	1.123	1.232	1.189	1.122	1.166	4.0	
Bromoform	*	0.262	0.267	0.305	0.302	0.314	0.290	8.3	*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V5 Calibration Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Calibration Time(s): 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E4167 RRF20 =V5E4166
RRF50 =V5E4165 RRF100=V5E4164 RRF200=V5E4163

COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Isopropylbenzene	1.793	1.708	1.858	1.799	1.790	1.790	3.0
1,1,2,2-Tetrachloroethane *	0.948	0.889	0.927	0.851	0.830	0.889	5.6*
1,3,5-Trimethylbenzene	3.504	3.170	3.292	3.023	2.781	3.154	8.6
1,2,4-Trimethylbenzene	3.439	3.176	3.345	3.116	2.911	3.197	6.4
1,3-Dichlorobenzene	1.686	1.512	1.651	1.543	1.448	1.568	6.3
1,4-Dichlorobenzene	1.681	1.526	1.646	1.561	1.480	1.579	5.3
1,2-Dichlorobenzene	1.587	1.451	1.539	1.431	1.332	1.468	6.8
1,2-Dibromo-3-chloropropane	0.123	0.129	0.142	0.150	0.155	0.140	9.7
1,2,4-Trichlorobenzene	0.761	0.767	0.850	0.882	0.887	0.829	7.4
1,1,2-Trichlo-1,2,2-trifluor	0.191	0.227	0.225	0.201	0.200	0.209	7.7
Methyl Acetate	0.199	0.214	0.214	0.207	0.193	0.205	4.6
Cyclohexane	0.368	0.387	0.451	0.433	0.428	0.413	8.3
Methylcyclohexane	0.385	0.388	0.420	0.413	0.380	0.397	4.5
Dibromofluoromethane	0.302	0.291	0.309	0.299	0.313	0.303	2.9
1,2-Dichloroethane-d4	0.059	0.065	0.066	0.064	0.065	0.064	4.7
Toluene-d8	1.423	1.339	1.395	1.348	1.420	1.385	2.8
Bromofluorobenzene	0.578	0.576	0.612	0.597	0.609	0.594	2.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: V2B0304A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5233

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: V2B0304A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5233

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK2E

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) WATER Lab Sample ID: V2B0304A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5233

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: V5E4260 BFB Injection Date: 03/04/03

Instrument ID: V5 BFB Injection Time: 1331

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.3
75	30.0 - 60.0% of mass 95	40.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.1
175	5.0 - 9.0% of mass 174	5.9 (7.6)1
176	95.0 - 101.0% of mass 174	74.7 (96.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505L	V5S0304A	V5E4261	03/04/03	1348
02	VBLK5L	V5B0304A	V5E4263	03/04/03	1527
03	V5LLCS	V5L0304A	V5E4264	03/04/03	1559
04	V5LLCSD	V5L0304A	V5E4265	03/04/03	1628
05	SV1270203	B0320-02B	V5E4267	03/04/03	1727
06					
07					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V5 Calibration Date: 03/04/03 Time: 1348

Lab File ID: V5E4261 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.359	0.274	0.01	23.7	20.0	<-
Chloromethane	0.325	0.315	0.1	3.1	20.0	
Vinyl Chloride	0.297	0.298	0.01	0.3	20.0	
Bromomethane	0.227	0.208	0.01	8.4	20.0	
Chloroethane	0.142	0.153	0.01	7.7	20.0	
Trichlorofluoromethane	0.366	0.361	0.01	1.4	20.0	
1,1-Dichloroethene	0.225	0.229	0.01	1.8	20.0	
Acetone	0.092	0.103	0.01	12.0	20.0	
Carbon Disulfide	0.717	0.547	0.01	23.7	20.0	<-
Methylene Chloride	0.331	0.264	0.01	20.2	20.0	<-
trans-1,2-Dichloroethene	0.280	0.289	0.01	3.2	20.0	
Methyl tert-butyl ether	0.777	0.780	0.01	0.4	20.0	
1,1-Dichloroethane	0.481	0.491	0.1	2.1	20.0	
2-Butanone	0.114	0.127	0.01	11.4	20.0	
cis-1,2-Dichloroethene	0.291	0.293	0.01	0.7	20.0	
Chloroform	0.462	0.470	0.01	1.7	20.0	
1,1,1-Trichloroethane	0.366	0.360	0.01	1.6	20.0	
Carbon Tetrachloride	0.339	0.332	0.01	2.1	20.0	
1,2-Dichloroethane	0.384	0.396	0.01	3.1	20.0	
Benzene	0.933	0.921	0.01	1.3	20.0	
Trichloroethene	0.260	0.264	0.01	1.5	20.0	
1,2-Dichloropropane	0.253	0.247	0.01	2.4	20.0	
Bromodichloromethane	0.349	0.356	0.01	2.0	20.0	
cis-1,3-Dichloropropene	0.408	0.420	0.01	2.9	20.0	
4-Methyl-2-pentanone	0.248	0.220	0.01	11.3	20.0	
Toluene	1.057	1.030	0.01	2.6	20.0	
trans-1,3-Dichloropropene	0.377	0.397	0.01	5.3	20.0	
1,1,2-Trichloroethane	0.235	0.234	0.01	0.4	20.0	
Tetrachloroethene	0.291	0.299	0.01	2.7	20.0	
2-Hexanone	0.256	0.222	0.01	13.3	20.0	
Dibromochloromethane	0.389	0.403	0.01	3.6	20.0	
1,2-Dibromoethane	0.389	0.391	0.01	0.5	20.0	
Chlorobenzene	1.053	1.015	0.3	3.6	20.0	
Ethylbenzene	0.557	0.529	0.01	5.0	20.0	
m,p-Xylene	0.682	0.644	0.01	5.6	20.0	
o-Xylene	0.675	0.636	0.01	5.8	20.0	
Xylene (Total)	0.679	0.642	0.01	5.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: V5 Calibration Date: 03/04/03 Time: 1348

Lab File ID: V5E4261 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.166	1.066	0.01	8.6	20.0	
Bromoform	0.290	0.302	0.1	4.1	20.0	
Isopropylbenzene	1.790	1.614	0.01	9.8	20.0	
1,1,2,2-Tetrachloroethane	0.889	0.908	0.3	2.1	20.0	
1,3,5-Trimethylbenzene	3.154	2.972	0.01	5.8	20.0	
1,2,4-Trimethylbenzene	3.197	3.037	0.01	5.0	20.0	
1,3-Dichlorobenzene	1.568	1.514	0.01	3.4	20.0	
1,4-Dichlorobenzene	1.579	1.502	0.01	4.9	20.0	
1,2-Dichlorobenzene	1.468	1.354	0.01	7.8	20.0	
1,2-Dibromo-3-chloropropane	0.140	0.141	0.01	0.7	20.0	
1,2,4-Trichlorobenzene	0.829	0.611	0.01	26.3	20.0	<-
1,1,2-Trichlo-1,2,2-trifluor	0.209	0.160	0.01	23.4	20.0	<-
Methyl Acetate	0.205	0.208	0.01	1.5	20.0	
Cyclohexane	0.413	0.334	0.01	19.1	20.0	
Methylcyclohexane	0.397	0.375	0.01	5.5	20.0	
Dibromofluoromethane	0.303	0.314	0.01	3.6	20.0	
1,2-Dichloroethane-d4	0.064	0.066	0.01	3.1	20.0	
Toluene-d8	1.385	1.374	0.01	0.8	20.0	
Bromofluorobenzene	0.594	0.567	0.01	4.5	20.0	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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30.					

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		39	78	58-131
Chloromethane	50		46	92	63-120
Vinyl Chloride	50		48	96	61-134
Bromomethane	50		41	82	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		51	102	67-127
Acetone	50		50	100	0-154
Carbon Disulfide	50		35	70	63-126
Methylene Chloride	50		42	84	62-128
trans-1,2-Dichloroethen	50		49	98	76-120
Methyl tert-butyl ether	50		49	98	52-130
1,1-Dichloroethane	50		50	100	74-118
2-Butanone	50		56	112	14-154
cis-1,2-Dichloroethene	50		49	98	83-115
Chloroform	50		51	102	77-120
1,1,1-Trichloroethane	50		51	102	72-126
Carbon Tetrachloride	50		52	104	69-135
1,2-Dichloroethane	50		53	106	65-126
Benzene	50		50	100	78-121
Trichloroethene	50		50	100	75-125
1,2-Dichloropropane	50		48	96	78-117
Bromodichloromethane	50		51	102	75-118
cis-1,3-Dichloropropene	50		50	100	78-120
4-Methyl-2-pentanone	50		45	90	45-141
Toluene	50		48	96	80-126
trans-1,3-Dichloroprope	50		53	106	73-123
1,1,2-Trichloroethane	50		49	98	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		50	100	65-134
2-Hexanone	50		44	88	37-136
Dibromochloromethane	50		51	102	76-115
1,2-Dibromoethane	50		50	100	72-117
Chlorobenzene	50		47	94	78-117
Ethylbenzene	50		47	94	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		52	104	67-126
Isopropylbenzene	50		45	90	80-135
1,1,2,2-Tetrachloroetha	50		48	96	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		46	92	73-126
1,3-Dichlorobenzene	50		46	92	75-115
1,4-Dichlorobenzene	50		46	92	72-110
1,2-Dichlorobenzene	50		45	90	78-113
1,2-Dibromo-3-chloropro	50		52	104	52-128
1,2,4-Trichlorobenzene	50		40	80	49-126
1,1,2-Trichlo-1,2,2-tri	50		44	88	70-130
Methyl Acetate	50		53	106	70-130
Cyclohexane	50		39	78	70-130
Methylcyclohexane	50		46	92	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	43	86	10	40	58-131
Chloromethane	50	47	94	2	40	63-120
Vinyl Chloride	50	50	100	4	40	61-134
Bromomethane	50	44	88	7	40	10-215
Chloroethane	50	50	100	6	40	55-146
Trichlorofluoromethane	50	52	104	8	40	63-126
1,1-Dichloroethene	50	53	106	4	40	67-127
Acetone	50	52	104	4	40	0-154
Carbon Disulfide	50	38	76	8	40	63-126
Methylene Chloride	50	49	98	15	40	62-128
trans-1,2-Dichloroethen	50	52	104	6	40	76-120
Methyl tert-butyl ether	50	52	104	6	40	52-130
1,1-Dichloroethane	50	53	106	6	40	74-118
2-Butanone	50	57	114	2	40	14-154
cis-1,2-Dichloroethene	50	52	104	6	40	83-115
Chloroform	50	53	106	4	40	77-120
1,1,1-Trichloroethane	50	53	106	4	40	72-126
Carbon Tetrachloride	50	54	108	4	40	69-135
1,2-Dichloroethane	50	56	112	6	40	65-126
Benzene	50	52	104	4	40	78-121
Trichloroethene	50	54	108	8	40	75-125
1,2-Dichloropropane	50	51	102	6	40	78-117
Bromodichloromethane	50	53	106	4	40	75-118
cis-1,3-Dichloropropene	50	52	104	4	40	78-120
4-Methyl-2-pentanone	50	48	96	6	40	45-141
Toluene	50	50	100	4	40	80-126
trans-1,3-Dichloroprope	50	54	108	2	40	73-123
1,1,2-Trichloroethane	50	52	104	6	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	54	108	8	40	65-134
2-Hexanone	50	47	94	6	40	37-136
Dibromochloromethane	50	54	108	6	40	76-115
1,2-Dibromoethane	50	51	102	2	40	72-117
Chlorobenzene	50	50	100	6	40	78-117
Ethylbenzene	50	48	96	2	40	79-129
Xylene (Total)	150	150	100	7	40	83-125
Styrene	50	49	98	6	40	83-122
Bromoform	50	54	108	4	40	67-126
Isopropylbenzene	50	48	96	6	40	80-135
1,1,2,2-Tetrachloroetha	50	51	102	6	40	70-117
1,3,5-Trimethylbenzene	50	49	98	6	40	72-133
1,2,4-Trimethylbenzene	50	50	100	8	40	73-126
1,3-Dichlorobenzene	50	50	100	8	40	75-115
1,4-Dichlorobenzene	50	50	100	8	40	72-110
1,2-Dichlorobenzene	50	49	98	8	40	78-113
1,2-Dibromo-3-chloropro	50	54	108	4	40	52-128
1,2,4-Trichlorobenzene	50	45	90	12	40	49-126
1,1,2-Trichlo-1,2,2-tri	50	48	96	9	40	70-130
Methyl Acetate	50	54	108	2	40	70-130
Cyclohexane	50	42	84	7	40	70-130
Methylcyclohexane	50	49	98	6	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0320	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/7/03

Sample W00-SU-127-0203 Methylene Chloride = ~~5~~ ug/kg

$$MeCl = \frac{(32974)(50\ ng/mL)(5\ mL)}{(934733)(0.331)(6.2\ g)(0.9)} = 4.77\ ng/g = ug/kg$$

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02B

Sample wt/vol: 6.2 (g/mL) G Lab File ID: V5E4267

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. 10 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	8	J
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	9	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02B

Sample wt/vol: 6.2 (g/mL) G Lab File ID: V5E4267

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: not dec. 10 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	9	U
95-47-6	o-Xylene	9	U
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	9	U
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030304.B\V5E4267.D
Report Date: 13-Mar-2003 14:23

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030304.B\V5E4267.D
Lab Smp Id: B0320-02B Client Smp ID: SV1270203
Inj Date : 04-MAR-2003 17:27
Operator : KEN Inst ID: v5.i
Smp Info : TETRA,B0320-02B,SV1270203,V5B0304A,,B0320
Misc Info : 26-FEB-03,,,,,,,6.2,,10
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030304.B\v58260H.m
Meth Date : 13-Mar-2003 14:20 mtl Quant Type: ISTD
Cal Date : 27-FEB-2003 19:59 Cal File: V5E4167.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	6.200	Weight of sample (g)
M	10.000	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/Kg)
9	Acetone	43	3.426	3.475	(0.547)	16054	9.33360	8(a)
14	Methylene Chloride	84	3.869	3.908	(0.618)	32974	5.33219	5(a)
$ 30	Dibromofluoromethane	113	5.583	5.612	(0.891)	317705	56.0859	50
$ 35	1,2-Dichloroethane-d4	102	5.917	5.937	(0.945)	71862	60.1228	54
* 38	Fluorobenzene	96	6.262	6.282	(1.000)	934733	50.0000	
$ 47	Toluene-d8	98	7.887	7.897	(0.833)	965364	49.8989	45
* 57	Chlorobenzene-d5	117	9.473	9.473	(1.000)	698396	50.0000	
$ 68	Bromofluorobenzene	95	10.832	10.832	(1.143)	383456	46.1802	41
* 81	1,4-Dichlorobenzene-d4	152	12.221	12.211	(1.000)	279268	50.0000	

SB 3/13/03

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.390					1.399	3.2*
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*
2-Chlorophenol	* 1.371					1.295	3.5*
2-Methylphenol	* 1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*
4-Methylphenol	* 1.129					1.108	1.6*
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*
Hexachloroethane	* 0.627					0.609	2.4*
Nitrobenzene	* 0.406					0.416	4.6*
Isophorone	* 0.535					0.541	2.3*
2-Nitrophenol	* 0.219					0.207	5.1*
2,4-Dimethylphenol	* 0.383					0.349	7.8*
2,4-Dichlorophenol	* 0.356					0.321	8.1*
Naphthalene	* 1.196					1.127	4.2*
4-Chloroaniline	* 0.251					0.255	31.9*
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*
Hexachlorobutadiene	* 0.220					0.214	4.2*
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*
2-Methylnaphthalene	* 1.032					0.959	7.5*
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*
2-Chloronaphthalene	* 1.346					1.224	7.1*
2-Nitroaniline	* 0.518					0.527	2.8*
Dimethylphthalate	* 1.415					1.385	1.7*
Acenaphthylene	* 1.879					1.819	2.1*
2,6-Dinitrotoluene	* 0.318					0.308	2.6*
3-Nitroaniline	* 0.274					0.181	52.2*
Acenaphthene	* 1.311					1.218	5.3*
2,4-Dinitrophenol	* 0.201					0.167	17.9*
4-Nitrophenol	* 0.265					0.267	6.2*
Dibenzofuran	* 2.250					2.192	5.6*
2,4-Dinitrotoluene	* 0.456					0.427	7.5*
Diethylphthalate	* 1.413					1.367	3.2*
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*
Fluorene	* 1.325					1.349	7.0*
4-Nitroaniline	* 0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177					0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407					0.394	20.1*
4-Bromophenyl-phenylether	* 0.262					0.243	5.7*
Hexachlorobenzene	* 0.255					0.236	5.7*
Pentachlorophenol	* 0.166					0.143	15.2*
Phenanthrene	* 1.296					1.190	7.1*
Anthracene	* 1.261					1.166	6.3*
Carbazole	* 0.612					0.572	31.8*
Di-n-butylphthalate	* 1.451					1.374	4.8*
Fluoranthene	* 1.230					1.143	7.2*
Pyrene	* 1.223					1.206	1.6*
Butylbenzylphthalate	* 0.629					0.613	2.3*
3,3'-Dichlorobenzidine	0.136					0.147	12.9
Benzo(a)anthracene	* 1.092					1.086	1.1*
Chrysene	* 0.963					1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824					0.878	6.6*
Di-n-octylphthalate	* 2.687					2.408	13.8*
Benzo(b)fluoranthene	* 1.959					1.686	12.1*
Benzo(k)fluoranthene	* 1.683					1.669	6.2*
Benzo(a)pyrene	* 1.582					1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678					1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479					1.323	8.0*
Benzo(g,h,i)perylene	* 1.338					1.245	6.0*
1,1'-Biphenyl	* 1.686					1.644	3.2*
Acetophenone	* 1.856					1.809	2.4*
Atrazine	* 0.173					0.178	9.6*
Benzaldehyde	* 0.213					0.477	40.0*
Caprolactum	* 0.097					0.099	1.1*
Nitrobenzene-d5	0.436					0.440	2.2*
2-Fluorobiphenyl	* 1.695					1.579	4.7*
Terphenyl-d14	* 0.882					0.901	1.7*
Phenol-d5	* 1.296					1.322	4.2*
2-Fluorophenol	* 1.164					1.122	3.9*
2,4,6-Tribromophenol	* 0.128					0.116	8.5*
2-Chlorophenol-d4	* 1.326					1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981					0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SV1270203	61	62	82	54	67	68	65	62	0
02	SBLK3S	81	77	107	92	93	85	88	76	0
03	S3SLCS	80	74	98	91	92	92	89	75	0
04										
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06										
07										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: S3C2342 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 0011

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.3
68	Less than 2.0% of mass 69	0.7 (1.4)1
69	Mass 69 relative abundance	50.4
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.6
197	Less than 1.0% of mass 198	0.7
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.8
365	Greater than 1.0% of mass 198	5.42
441	Present, but less than mass 443	13.7
442	40.0 - 99.9% of mass 198	93.3
443	17.0 - 23.0% of mass 442	18.0 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Q	SS0315A	S3C2343	03/15/03	0031
02	SV1270203	B0320-02A	S3C2356	03/15/03	0918
03					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.517	0.050	8.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.225	0.050	10.2	100
2-Chlorophenol	1.295	1.304	0.050	0.7	100
2-Methylphenol	1.130	1.099	0.050	-2.7	100
2,2'-oxybis(1-Chloropropane)	1.228	1.446	0.050	17.8	100
4-Methylphenol	1.108	1.097	0.050	-1.0	100
N-Nitroso-di-n-propylamine	0.820	0.870	0.050	6.1	100
Hexachloroethane	0.609	0.622	0.050	2.1	100
Nitrobenzene	0.416	0.470	0.050	13.0	100
Isophorone	0.541	0.572	0.050	5.7	100
2-Nitrophenol	0.207	0.210	0.050	1.4	20.0
2,4-Dimethylphenol	0.349	0.290	0.050	-16.9	100
2,4-Dichlorophenol	0.321	0.301	0.050	-6.2	20.0
Naphthalene	1.127	1.074	0.050	-4.7	100
4-Chloroaniline	0.255	0.138	0.050	-45.9	100
bis(2-Chloroethoxy)methane	0.396	0.434	0.050	9.6	100
Hexachlorobutadiene	0.214	0.210	0.050	-1.9	20.0
4-Chloro-3-Methylphenol	0.331	0.325	0.050	-1.8	20.0
2-Methylnaphthalene	0.959	0.817	0.050	-14.8	100
Hexachlorocyclopentadiene	0.323	0.241	0.050	-25.4	100
2,4,6-Trichlorophenol	0.387	0.384	0.050	-0.8	100
2,4,5-Trichlorophenol	0.412	0.390	0.050	-5.3	100
2-Chloronaphthalene	1.224	1.162	0.050	-5.1	100
2-Nitroaniline	0.527	0.614	0.050	16.5	100
Dimethylphthalate	1.385	1.393	0.050	0.6	100
Acenaphthylene	1.819	1.788	0.050	-1.7	100
2,6-Dinitrotoluene	0.308	0.323	0.050	4.9	100
3-Nitroaniline	0.181	0.206	0.050	13.8	100
Acenaphthene	1.218	1.146	0.050	-5.9	20.0
2,4-Dinitrophenol	0.167	0.129	0.050	-22.8	100
4-Nitrophenol	0.267	0.242	0.050	-9.4	100
Dibenzofuran	2.192	2.012	0.050	-8.2	100
2,4-Dinitrotoluene	0.427	0.396	0.050	-7.2	100
Diethylphthalate	1.367	1.319	0.050	-3.5	100
4-Chlorophenyl-phenylether	0.656	0.621	0.050	-5.3	100
Fluorene	1.349	1.223	0.050	-9.3	100
4-Nitroaniline	0.150	0.174	0.050	16.0	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.142	0.050	-10.7	100
N-Nitrosodiphenylamine(1)	0.394	0.424	0.050	7.6	20.0
4-Bromophenyl-phenylether	0.243	0.227	0.050	-6.6	100
Hexachlorobenzene	0.236	0.224	0.050	-5.1	100
Pentachlorophenol	0.143	0.115	0.050	-19.6	20.0
Phenanthrene	1.190	1.104	0.050	-7.2	100
Anthracene	1.166	1.026	0.050	-12.0	100
Carbazole	0.572	0.654	0.050	14.3	100
Di-n-butylphthalate	1.374	1.326	0.050	-3.5	100
Fluoranthene	1.143	1.052	0.050	-8.0	20.0
Pyrene	1.206	1.229	0.050	1.9	100
Butylbenzylphthalate	0.613	0.629	0.050	2.6	100
3,3'-Dichlorobenzidine	0.147	0.119	0.050	-19.0	100
Benzo(a)anthracene	1.086	1.057	0.050	-2.7	100
Chrysene	1.034	1.026	0.050	-0.8	100
bis(2-Ethylhexyl)phthalate	0.878	0.891	0.050	1.5	100
Di-n-octylphthalate	2.408	2.294	0.050	-4.7	20.0
Benzo(b)fluoranthene	1.686	1.556	0.050	-7.7	100
Benzo(k)fluoranthene	1.669	1.640	0.050	-1.7	100
Benzo(a)pyrene	1.448	1.328	0.050	-8.3	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.597	0.050	4.0	100
Dibenzo(a,h)anthracene	1.323	1.346	0.050	1.7	100
Benzo(g,h,i)perylene	1.245	1.354	0.050	8.8	100
1,1'-Biphenyl	1.644	1.598	0.050	-2.8	100
Acetophenone	1.809	1.734	0.050	-4.1	100
Atrazine	0.178	0.118	0.050	-33.7	100
Benzaldehyde	0.477	0.806	0.050	69.0	100
Caprolactum	0.099	0.110	0.050	11.1	100
Nitrobenzene-d5	0.440	0.502	0.050	14.1	100
2-Fluorobiphenyl	1.579	1.541	0.050	-2.4	100
Terphenyl-d14	0.901	0.888	0.050	-1.4	100
Phenol-d5	1.322	1.428	0.050	8.0	100
2-Fluorophenol	1.122	1.196	0.050	6.6	100
2,4,6-Tribromophenol	0.116	0.109	0.050	-6.0	100
2-Chlorophenol-d4	1.291	1.313	0.050	1.7	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.892	0.050	-3.5	100

All other compounds must meet a minimum RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Lab File ID: S3C2361 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 1611

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.7 (1.5)1
69	Mass 69 relative abundance	47.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.2
365	Greater than 1.0% of mass 198	5.04
441	Present, but less than mass 443	14.5
442	40.0 - 99.9% of mass 198	97.9
443	17.0 - 23.0% of mass 442	20.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503R	SS0315B	S3C2362	03/15/03	1632
02	SBLK3S	MB-5840	S3C2366	03/15/03	1926
03	S3SLCS	LCS-5840	S3C2367	03/15/03	2008
04					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.489	0.050	6.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.241	0.050	11.6	100
2-Chlorophenol	1.295	1.314	0.050	1.5	100
2-Methylphenol	1.130	1.136	0.050	0.5	100
2,2'-oxybis(1-Chloropropane)	1.228	1.600	0.050	30.3	100
4-Methylphenol	1.108	1.196	0.050	7.9	100
N-Nitroso-di-n-propylamine	0.820	0.880	0.050	7.3	100
Hexachloroethane	0.609	0.575	0.050	-5.6	100
Nitrobenzene	0.416	0.415	0.050	-0.2	100
Isophorone	0.541	0.560	0.050	3.5	100
2-Nitrophenol	0.207	0.203	0.050	-1.9	20.0
2,4-Dimethylphenol	0.349	0.287	0.050	-17.8	100
2,4-Dichlorophenol	0.321	0.300	0.050	-6.5	20.0
Naphthalene	1.127	1.076	0.050	-4.5	100
4-Chloroaniline	0.255	0.141	0.050	-44.7	100
bis(2-Chloroethoxy)methane	0.396	0.404	0.050	2.0	100
Hexachlorobutadiene	0.214	0.176	0.050	-17.8	20.0
4-Chloro-3-Methylphenol	0.331	0.343	0.050	3.6	20.0
2-Methylnaphthalene	0.959	0.924	0.050	-3.6	100
Hexachlorocyclopentadiene	0.323	0.161	0.050	-50.2	100
2,4,6-Trichlorophenol	0.387	0.360	0.050	-7.0	100
2,4,5-Trichlorophenol	0.412	0.376	0.050	-8.7	100
2-Chloronaphthalene	1.224	1.127	0.050	-7.9	100
2-Nitroaniline	0.527	0.550	0.050	4.4	100
Dimethylphthalate	1.385	1.392	0.050	0.5	100
Acenaphthylene	1.819	1.844	0.050	1.4	100
2,6-Dinitrotoluene	0.308	0.308	0.050	0.0	100
3-Nitroaniline	0.181	0.293	0.050	61.9	100
Acenaphthene	1.218	1.188	0.050	-2.5	20.0
2,4-Dinitrophenol	0.167	0.136	0.050	-18.6	100
4-Nitrophenol	0.267	0.237	0.050	-11.2	100
Dibenzofuran	2.192	2.056	0.050	-6.2	100
2,4-Dinitrotoluene	0.427	0.415	0.050	-2.8	100
Diethylphthalate	1.367	1.418	0.050	3.7	100
4-Chlorophenyl-phenylether	0.656	0.602	0.050	-8.2	100
Fluorene	1.349	1.295	0.050	-4.0	100
4-Nitroaniline	0.150	0.236	0.050	57.3	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.139	0.050	-12.6	100
N-Nitrosodiphenylamine(1)	0.394	0.438	0.050	11.2	20.0
4-Bromophenyl-phenylether	0.243	0.220	0.050	-9.5	100
Hexachlorobenzene	0.236	0.234	0.050	-0.8	100
Pentachlorophenol	0.143	0.135	0.050	-5.6	20.0
Phenanthrene	1.190	1.111	0.050	-6.6	100
Anthracene	1.166	1.062	0.050	-8.9	100
Carbazole	0.572	0.843	0.050	47.4	100
Di-n-butylphthalate	1.374	1.432	0.050	4.2	100
Fluoranthene	1.143	1.085	0.050	-5.1	20.0
Pyrene	1.206	1.230	0.050	2.0	100
Butylbenzylphthalate	0.613	0.689	0.050	12.4	100
3,3'-Dichlorobenzidine	0.147	0.220	0.050	49.6	100
Benzo(a)anthracene	1.086	1.066	0.050	-1.8	100
Chrysene	1.034	1.010	0.050	-2.3	100
bis(2-Ethylhexyl)phthalate	0.878	1.012	0.050	15.3	100
Di-n-octylphthalate	2.408	2.799	0.050	16.2	20.0
Benzo(b)fluoranthene	1.686	1.630	0.050	-3.3	100
Benzo(k)fluoranthene	1.669	1.665	0.050	-0.2	100
Benzo(a)pyrene	1.448	1.343	0.050	-7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.535	0.050	-0.1	100
Dibenzo(a,h)anthracene	1.323	1.303	0.050	-1.5	100
Benzo(g,h,i)perylene	1.245	1.247	0.050	0.2	100
1,1'-Biphenyl	1.644	1.522	0.050	-7.4	100
Acetophenone	1.809	1.862	0.050	2.9	100
Atrazine	0.178	0.123	0.050	-30.9	100
Benzaldehyde	0.477	0.903	0.050	89.3	100
Caprolactum	0.099	0.115	0.050	16.2	100
Nitrobenzene-d5	0.440	0.435	0.050	-1.1	100
2-Fluorobiphenyl	1.579	1.415	0.050	-10.4	100
Terphenyl-d14	0.901	0.935	0.050	3.8	100
Phenol-d5	1.322	1.403	0.050	6.1	100
2-Fluorophenol	1.122	1.182	0.050	5.3	100
2,4,6-Tribromophenol	0.116	0.119	0.050	2.6	100
2-Chlorophenol-d4	1.291	1.331	0.050	3.1	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.889	0.050	-3.8	100

All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U
92-52-4	1,1'-Biphenyl	330	U
98-86-2	Acetophenone	330	U
1912-24-9	Atrazine	330	U
100-52-7	Benzaldehyde	330	U
105-60-2	Caprolactum	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		800	96	45-109
bis(2-Chloroethyl)Ether	830		750	90	43-104
2-Chlorophenol	830		710	86	43-107
2-Methylphenol	830		700	84	45-108
2,2'-oxybis(1-Chloropro	830		960	116*	41-105
4-Methylphenol	830		760	92	48-109
N-Nitroso-di-n-prop.(1)	830		800	96	44-111
Hexachloroethane	830		630	76	40-102
Nitrobenzene	830		700	84	44-108
Isophorone	830		920	111	42-113
2-Nitrophenol	830		650	78	42-111
2,4-Dimethylphenol	830		460	55	37-107
2,4-Dichlorophenol	830		620	75	49-110
Naphthalene	830		650	78	44-112
4-Chloroaniline	830		500	60	4-102
bis(2-Chloroethoxy)meth	830		730	88	46-108
Hexachlorobutadiene	830		550	66	41-108
4-Chloro-3-Methylphenol	830		720	87	56-117
2-Methylnaphthalene	830		500	60	46-110
Hexachlorocyclopentadie	830		330	40	10-118
2,4,6-Trichlorophenol	830		630	76	53-115
2,4,5-Trichlorophenol	830		630	76	59-113
2-Chloronaphthalene	830		640	77	52-112
2-Nitroaniline	830		580	70	63-117
Dimethylphthalate	830		710	86	62-117
Acenaphthylene	830		700	84	58-112
2,6-Dinitrotoluene	830		720	87	60-118
3-Nitroaniline	830		900	108	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		680	82	53-116
2,4-Dinitrophenol	830		420	51	15-136
4-Nitrophenol	830		590	71	50-129
Dibenzofuran	830		510	61	61-112
2,4-Dinitrotoluene	830		700	84	59-123
Diethylphthalate	830		760	92	61-120
4-Chlorophenyl-phenylet	830		650	78	59-116
Fluorene	830		670	81	63-115
4-Nitroaniline	830		960	116	35-124
4,6-Dinitro-2-methylphe	830		530	64	33-130
N-Nitrosodiphenylamine	830		1300	157*	50-150
4-Bromophenyl-phenyleth	830		650	78	66-110
Hexachlorobenzene	830		710	86	67-112
Pentachlorophenol	830		580	70	19-130
Phenanthrene	830		680	82	70-115
Anthracene	830		680	82	63-117
Carbazole	830		1100	132*	62-122
Di-n-butylphthalate	830		790	95	70-120
Fluoranthene	830		670	81	64-121
Pyrene	830		810	98	66-120
Butylbenzylphthalate	830		870	105	63-123
3,3'-Dichlorobenzidine	830		940	113	8-124
Benzo(a)anthracene	830		730	88	50-129
Chrysene	830		710	86	41-150
bis(2-Ethylhexyl)phthal	830		860	104	64-115
Di-n-octylphthalate	830		830	100	69-137
Benzo(b)fluoranthene	830		700	84	61-129
Benzo(k)fluoranthene	830		740	89	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: S3SLCS Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	830		690	83	66-119
Indeno(1,2,3-cd)pyrene	830		740	89	56-128
Dibenzo(a,h)anthracene	830		720	87	58-128
Benzo(g,h,i)perylene	830		720	87	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 60 outside limits

COMMENTS: _____

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S3C2356

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: 10 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)Ether	360	U
95-57-8	2-Chlorophenol	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitroso-di-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
120-83-2	2,4-Dichlorophenol	360	U
91-20-3	Naphthalene	360	U
106-47-8	4-Chloroaniline	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-Methylphenol	360	U
91-57-6	2-Methylnaphthalene	360	U
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	920	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	920	U
131-11-3	Dimethylphthalate	360	U
208-96-8	Acenaphthylene	360	U
606-20-2	2,6-Dinitrotoluene	360	U
99-09-2	3-Nitroaniline	920	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	920	U
100-02-7	4-Nitrophenol	920	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: B0320-02A

Sample wt/vol: 30.2 (g/mL) G Lab File ID: S3C2356

Level: (low/med) LOW Date Received: 02/26/03

% Moisture: 10 decanted: (Y/N) N Date Extracted:02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl-phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	920	U
534-52-1	4,6-Dinitro-2-methylphenol	920	U
86-30-6	N-Nitrosodiphenylamine (1)	360	U
101-55-3	4-Bromophenyl-phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	920	U
85-01-8	Phenanthrene	360	U
120-12-7	Anthracene	360	U
86-74-8	Carbazole	360	U
84-74-2	Di-n-butylphthalate	360	U
206-44-0	Fluoranthene	360	U
129-00-0	Pyrene	360	U
85-68-7	Butylbenzylphthalate	360	U
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	360	U
218-01-9	Chrysene	360	U
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
117-84-0	Di-n-octylphthalate	360	U
205-99-2	Benzo(b)fluoranthene	360	U
207-08-9	Benzo(k)fluoranthene	360	U
50-32-8	Benzo(a)pyrene	360	U
193-39-5	Indeno(1,2,3-cd)pyrene	360	U
53-70-3	Dibenzo(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	360	U
92-52-4	1,1'-Biphenyl	360	U
98-86-2	Acetophenone	360	U
1912-24-9	Atrazine	360	U
100-52-7	Benzaldehyde	360	U
105-60-2	Caprolactum	360	U

(1) - Cannot be separated from Diphenylamine

Data File: S3C2356.D
Report Date: 17-Mar-2003 19:36

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030315.B\S3C2356.D
Lab Smp Id: B0320-02A Client Smp ID: SV1270203
Inj Date : 15-MAR-2003 09:18
Operator : WC Inst ID: s3.i
Smp Info : B0320-02A,SV1270203,5840,,,B0320
Misc Info : ,,,2,,,,30.2,10,,28-FEB-03,26-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030315.B\S3_8270C.m
Meth Date : 15-Mar-2003 14:43 mtl Quant Type: ISTD
Cal Date : 12-MAR-2003 15:21 Cal File: S3C2284.D
Als bottle: 26
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848SL.sub
Target Version: 4.03
Processing Host: TARGET4

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.200	Weight of sample extracted (g)
M	10.000	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
$	3 2-Fluorophenol	112	5.653	5.621	(0.721)	283636	49.9520	1800
$	5 Phenol-d5	99	7.266	7.245	(0.926)	269596	40.3137	1500
$	9 2-Chlorophenol-d4	132	7.464	7.448	(0.952)	318655	48.8007	1800
*	12 1,4-Dichlorobenzene-d4	152	7.843	7.833	(1.000)	202371	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	8.126	8.116	(1.036)	144478	30.9039	1100
$	22 Nitrobenzene-d5	82	8.901	8.901	(0.866)	240854	30.7333	1100
*	31 Naphthalene-d8	136	10.274	10.269	(1.000)	712220	40.0000	
$	41 2-Fluorobiphenyl	172	12.453	12.454	(0.902)	514552	30.9027	1100
*	48 Acenaphthene-d10	164	13.810	13.805	(1.000)	421908	40.0000	
$	60 2,4,6-Tribromophenol	330	15.440	15.424	(0.916)	94252	51.1835	1900
*	64 Phenanthrene-d10	188	16.850	16.840	(1.000)	635628	40.0000	
$	72 Terphenyl-d14	244	20.141	20.125	(0.904)	445654	41.2481	1500
*	76 Chrysene-d12	240	22.272	22.251	(1.000)	479680	40.0000	

Data File: S3C2356.D
Report Date: 17-Mar-2003 19:36

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
78 bis(2-Ethylhexyl)phthalate	149	22.320	22.315	(1.002)	54898	5.21421	190(a)
* 83 Perylene-d12	264	25.077	25.045	(1.000)	274754	40.0000	

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

3/17/03

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740 SDG-B0320	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/7/03

Sample WOD-SU-127-0203 bis(2-ethylhexyl)phthalate = 190 ug/kg

$$b.s\,(2EHP) = \frac{(54898)(40\,ng)(1000\,uL)}{(479680)(0.878)(1\,mL)(30.2\,g)(0.9)} = 191.8\,ng/g = ug/kg$$

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BE	AR1660BE	03/03/03	2314	6.78	22.14
23	BBLK1G	MB-5838	03/04/03	0320	6.78	22.13
24	B1GLCS	LCS-5838	03/04/03	0355	6.78	22.13
25	SV1270203	B0320-02A	03/04/03	0506	6.78	22.14
26	AR1660BF	AR1660BF	03/04/03	0837	6.78	22.14
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BE	AR1660BE	03/03/03	2314	8.45	25.35
23	BBLK1G	MB-5838	03/04/03	0320	8.45	25.35
24	B1GLCS	LCS-5838	03/04/03	0355	8.45	25.35
25	SV1270203	B0320-02A	03/04/03	0506	8.45	25.35
26	AR1660BF	AR1660BF	03/04/03	0837	8.45	25.35
27						
28						
29						
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11134.000	0.01	6.7	15.0
(2)	24115.960	21559.000	0.01	10.6	15.0
(3)	14202.320	12700.000	0.01	10.6	15.0
Aroclor-1260	29455.240	27101.000	0.01	8.0	15.0
(2)	40190.280	41223.000	0.01	2.6	15.0
(3)	23147.960	21874.000	0.01	5.5	15.0
Tetrachloro-m-xylene	503358.00	485050.00	0.01	3.6	15.0
Decachlorobiphenyl	581298.00	532600.00	0.01	8.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43868.000	0.01	6.6	15.0
(2)	24183.600	22133.000	0.01	8.5	15.0
(3)	20737.640	19515.000	0.01	5.9	15.0
Aroclor-1260	45409.320	43643.000	0.01	3.9	15.0
(2)	46248.440	44244.000	0.01	4.3	15.0
(3)	64584.960	66421.000	0.01	2.8	15.0
Tetrachloro-m-xylene	741526.00	715600.00	0.01	3.5	15.0
Decachlorobiphenyl	711418.00	717500.00	0.01	0.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11226.000	0.01	5.9	15.0
(2)	24115.960	22229.000	0.01	7.8	15.0
(3)	14202.320	12983.000	0.01	8.6	15.0
Aroclor-1260	29455.240	27725.000	0.01	5.9	15.0
(2)	40190.280	42546.000	0.01	5.9	15.0
(3)	23147.960	22817.000	0.01	1.4	15.0
Tetrachloro-m-xylene	503358.00	489150.00	0.01	2.8	15.0
Decachlorobiphenyl	581298.00	540150.00	0.01	7.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44591.000	0.01	5.0	15.0
(2)	24183.600	22512.000	0.01	6.9	15.0
(3)	20737.640	19933.000	0.01	3.9	15.0
Aroclor-1260	45409.320	44767.000	0.01	1.4	15.0
(2)	46248.440	46068.000	0.01	0.4	15.0
(3)	64584.960	67661.000	0.01	4.8	15.0
Tetrachloro-m-xylene	741526.00	723800.00	0.01	2.4	15.0
Decachlorobiphenyl	711418.00	721600.00	0.01	1.4	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix: (soil/water) SOIL Lab Sample ID: MB-5838

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9608F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1G	93	96	80	91			0
02	B1GLCS	91	96	83	94			0
03	SV1270203	67	68	61	68			0
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (42-147)
S2 (DCB) = Decachlorobiphenyl (29-155)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Matrix Spike - Sample No.: B1GLCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		310	94	62-155
Aroclor-1260	330		320	97	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 7, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0320

SAMPLES: 1/SOIL/

WOD-SU-127-0203

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0320, consists of one (1) soil environmental sample.

The sample was analyzed for target analyte list (TAL) metals. The sample was collected by Tetra Tech NUS February 25, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7471A.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, laboratory control sample (LCS) results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	59.1 ug/L	14.78 mg/kg
Antimony	3.0 ug/L	0.75 mg/kg
Magnesium	66.4 ug/L	16.6 mg/kg
Manganese[(1)]	0.066 mg/kg	0.33 mg/kg
Potassium	83.7 ug/L	20.93 mg/kg
Zinc	8.8 ug/L	2.2 mg/kg

[(1)] Maximum concentration present in soil preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No validation action was required for these analytes because the results were either greater than the action level or they were nondetects.

Notes

Sample WOD-SU-127-0203 was reported incorrectly by the laboratory as WOD-SV-127-0203. The data reviewer amended the database.

Matrix spike, laboratory duplicate, and serial dilution analyses were not performed for this SDG.

Executive Summary

Laboratory Performance: No quality control issues were noted for this SDG.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0320 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SU-127-0203
samp_date	2/25/2003
lab_id	B0320-02A
qc_type	NM
units	MG/KG
Pct_Solids	90
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	5140		
ANTIMONY	0.15	U	
ARSENIC	2.6		
BARIUM	19.9		
BERYLLIUM	0.14		
CADMIUM	0.035	U	
CALCIUM	47.8		
CHROMIUM	5.6		
COBALT	1.7		
COPPER	1.9		
IRON	4200		
LEAD	3.4		
MAGNESIUM	387		
MANGANESE	68.9		
MERCURY	0.015	U	
NICKEL	3.1		
POTASSIUM	180		
SELENIUM	0.45	U	
SILVER	0.24		
SODIUM	12.4		
THALLIUM	0.15	U	
VANADIUM	8.4		
ZINC	8.9		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1270203

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320__

Matrix (soil/water): SOIL Lab Sample ID: B0320-02A_____

Level (low/med): MED_____ Date Received: 02/26/03_____

% Solids: 90.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5140			P
7440-36-0	Antimony	0.15	U		P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	19.9			P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.035	U		P
7440-70-2	Calcium	47.8			P
7440-47-3	Chromium	5.6			P
7440-48-4	Cobalt	1.7	B		P
7440-50-8	Copper	1.9			P
7439-89-6	Iron	4200			P
7439-92-1	Lead	3.4			P
7439-95-4	Magnesium	387			P
7439-96-5	Manganese	68.9			P
7439-97-6	Mercury	0.015	U		CV
7440-02-0	Nickel	3.1			P
7440-09-7	Potassium	180			P
7782-49-2	Selenium	0.45	U		P
7440-22-4	Silver	0.24	B		P
7440-23-5	Sodium	12.4	B		P
7440-28-0	Thallium	0.15	U		P
7440-62-2	Vanadium	8.4			P
7440-66-6	Zinc	8.9			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

Percent Moisture and Percent Solids Report

Mitkem Sample ID	Client Sample ID	Analyzed	Percent Moisture	Percent Solids	Validated
B0320-02A	WOD-SV-127-0203	02/26/2003	10	90	No

000425

APPENDIX C

SUPPORT DOCUMENTATION

B0320

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0227LCSS	LCS	B0320	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	PBS	0227PBS	M_BLANK	B0320	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	HG	02/25/03	02/27/03	02/28/03	2	1	3
%	LCSS	0227LCSS	LCS	B0320	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	PBS	0227PBS	M_BLANK	B0320	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	M	02/25/03	02/27/03	02/27/03	2	0	2
%	SBLK3S	MB-5840	M_BLANK	B0320	OS	/ /	02/28/03	03/15/03	0	15	0
%	SBLK3SLCS	LCS-5840	LCS	B0320	OS	/ /	02/28/03	03/15/03	0	15	0
%	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	OS	02/25/03	02/28/03	03/15/03	3	15	18
UG/L	TB-022503	B0320-01A	NORMAL	B0320	OV	02/25/03	03/04/03	03/04/03	7	0	7
%	VBLK2E	V2B0304A	M_BLANK	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK2ELCS	V2L0304A	LCS	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5L	V5B0304A	M_BLANK	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCS	V5L0304A	LCS	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCSD	V5L0304B	LCSD	B0320	OV	/ /	03/04/03	03/04/03	0	0	0
%	WOD-SU-127-0203	B0320-02B	NORMAL	B0320	OV	02/25/03	03/04/03	03/04/03	7	0	7
%	BBLK1G	MB-5838	M_BLANK	B0320	PCB	/ /	02/28/03	03/04/03	0	4	0
%	BBLK1GLCS	LCS-5838	LCS	B0320	PCB	/ /	02/28/03	03/04/03	0	4	0
%	WOD-SU-127-0203	B0320-02A	NORMAL	B0320	PCB	02/25/03	02/28/03	03/04/03	3	4	7

MITKEM CORPORATION
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0320
NAME: Garth Glenn	FAX:	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl	TCL VOC	5 gram Encore Sampler	TCL VOC 40# Amber glass widemouth	TCL SVOC + PCB 40# Amber glass widemouth	TAL Metals % Moisture	COMMENTS
TB-022503	2/25/03 0715		X	X			01	2	2						Trip Blank
~~W03-SW-126~~ DW	/														
W00-SW-127-0203	2/25/03 1520		X		X		02	5		3	1	1 ✓			
~~W00-SW-128~~ DW	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														
	/														

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Donald W Kuker	2/25/03 1630	[signature]	2-26-03 0900		3°
		/		/	Fed Ex airbill # 8286 8470 8060	
		/		/		

600000

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0320

Mitkem Project ID: B0320

March 24, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and one soil samples that were collected on February 25, 2003, and received at Mitkem on February 26, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussions with the client. Sample identifications were shortened where necessary due to limitations in the data reporting software. A table of sample identifications showing full client ID and laboratory ID follows this narrative, along with the Mitkem Work Order.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of 2,2'-oxybis (1-chloropropane), N-nitrosodiphenylamine and carbazole.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/24/03

*Mitkem and Client Sample ID Summary Report**

Mitkem Workorder: B0320

Client Name: Tetra Tech NUS, Inc.

Mitkem Sample ID	*Reported Client Sample ID*	*Full Client Sample ID*
B0320-01A	TB-022503	
B0320-02A	SV1270203	WOD-SV-127-0203
B0320-02B	SV1270203	WOD-SV-127-0203

** If client sample ID has not been truncated, the full client sample ID is listed in the column labeled "Reported Client Sample ID"*

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0320__

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
__SV1270203_____	__B0320-02A_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Reinol A. Covian

Date: 3/14/03 Title: Chemist

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	59.1	B	17.0	U	17.0	U			-1.182	B	P
Antimony	3.0	U	3.0	B	3.0	U			0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U			0.150	U	P
Barium	4.0	U	4.0	U	4.0	U			0.200	U	P
Beryllium	0.5	U	0.5	U	0.5	U			0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U			0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U			12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U			0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U			0.045	U	P
Copper	4.0	U	4.0	U	4.0	U			0.200	U	P
Iron	26.0	U	26.0	U	26.0	U			1.300	U	P
Lead	4.0	U	4.0	U	4.0	U			0.200	U	P
Magnesium	8.0	U	8.0	U	66.4	B			-0.405	B	P
Manganese	0.8	U	0.8	U	0.8	U			0.066	B	P
Mercury	0.1	U	0.1	U					0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U			0.040	U	P
Potassium	83.7	B	78.0	U	78.0	U			3.900	U	P
Selenium	9.0	U	9.0	U	9.0	U			0.450	U	P
Silver	2.0	U	2.0	U	2.0	U			0.100	U	P
Sodium	83.0	U	83.0	U	83.0	U			4.150	U	P
Thallium	3.0	U	3.0	U	3.0	U			0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U			0.035	U	P
Zinc	8.8	B	7.0	U	7.0	U			0.350	U	P
Cyanide											

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0320___

ICP ID Number: OPTIMA_1A____ Date: 02/01/03___

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium	589.59		1000	83.0	P
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0320___

ICP ID Number: Date: 02/01/03___

Flame AA ID Number: COMM_FIMS___

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

U.S. EPA - CLP

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0320_____

Method: P___

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/27/03	0.50	50
PBS	02/27/03	1.00	50
SV1270203	02/27/03	1.12	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM_ Case No.: _____ SAS No.: SDG No.: B0320_____

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/27/03	0.60	100
PBS	02/27/03	0.60	100
SV1270203	02/27/03	0.72	100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0320

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/27/03 End Date: 02/27/03

EPA Sample No.	D/F	Time	%R	Analytes																						
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1742		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S1	1.00	1746		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S2	1.00	1751		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S3	1.00	1755		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1759																									
ZZZZZZ	1.00	1803																									
ZZZZZZ	1.00	1805																									
ZZZZZZ	1.00	1809																									
ZZZZZZ	1.00	1813																									
ICV	1.00	1818		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1822		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1827		X						X				X		X											
ICSAB	1.00	1831		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1835																									
ZZZZZZ	1.00	1839																									
ZZZZZZ	1.00	1843																									
ZZZZZZ	1.00	1847																									
ZZZZZZ	1.00	1851																									
ZZZZZZ	1.00	1855																									
ZZZZZZ	1.00	1859																									
ZZZZZZ	1.00	1904																									
CCV	1.00	1908		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1912		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBS	1.00	1916		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSS	1.00	1920		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1924																									
SV1270203	1.00	1933		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1937																									
ZZZZZZ	1.00	1941																									
ZZZZZZ	1.00	1945																									
ICSA	1.00	1949		X						X				X		X											
ICSAB	1.00	1954		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0320__

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/27/03___ End Date: 02/27/03___

EPA Sample No.	D/F	Time	% R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV	1.00	1958		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCB	1.00	2002		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	

FORM XIV - IN SW846

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0320__

Instrument ID Number: OPTIMA_1A Method: P___

Start Date: 02/28/03 End Date: 02/28/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0846																	X							
S1	1.00	0849																	X							
S2	1.00	0851																	X							
S3	1.00	0853																	X							
ZZZZZZ	1.00	0855																								
ICV	1.00	0858																	X							
ICB	1.00	0900																	X							
ICSA	1.00	0902																								
ICSAB	1.00	0905																	X							
ZZZZZZ	1.00	0907																								
ZZZZZZ	1.00	0909																								
ZZZZZZ	1.00	0911																								
PBS	1.00	0914																	X							
CCV	1.00	0916																	X							
CCB	1.00	0918																	X							
LCSS	1.00	0921																	X							
SV1270203	1.00	0923																	X							
ZZZZZZ	1.00	0925																								
ZZZZZZ	1.00	0928																								
ZZZZZZ	1.00	0930																								
ICSA	1.00	0932																								
ICSAB	1.00	0935																	X							
CCV	1.00	0937																	X							
CCB	1.00	0939																	X							

FORM XIV - IN SW846

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0320__

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 02/28/03___ End Date: 02/28/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1048																				X				
S1	1.00	1050																				X				
S2	1.00	1053																				X				
S3	1.00	1055																				X				
ZZZZZZ	1.00	1057																								
ICV	1.00	1100																				X				
ICB	1.00	1102																				X				
ICSA	1.00	1104																								
ICSAB	1.00	1107																				X				
ZZZZZZ	1.00	1109																								
ZZZZZZ	1.00	1111																								
ZZZZZZ	1.00	1113																								
PBS	1.00	1116																				X				
CCV	1.00	1118																				X				
CCB	1.00	1120																				X				
LCSS	1.00	1123																				X				
SV1270203	1.00	1125																				X				
ZZZZZZ	1.00	1127																								
ZZZZZZ	1.00	1130																								
ZZZZZZ	1.00	1132																								
ICSA	1.00	1134																								
ICSAB	1.00	1137																				X				
CCV	1.00	1139																				X				
CCB	1.00	1141																				X				

FORM XIV - IN SW846

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0320__

Instrument ID Number: COMM_FIMS Method: CV_

Start Date: 02/28/03___ End Date: 02/28/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1157																X									
S0.2	1.00	1158																X									
S1	1.00	1200																X									
S2	1.00	1201																X									
S5	1.00	1202																X									
S10	1.00	1204																X									
ICV	1.00	1205																X									
ICB	1.00	1206																X									
PBS	1.00	1208																X									
LCSS	1.00	1209																X									
SV1270203	1.00	1210																X									
ZZZZZZ	1.00	1212																									
ZZZZZZ	1.00	1213																									
ZZZZZZ	1.00	1214																									
ZZZZZZ	1.00	1216																									
ZZZZZZ	1.00	1217																									
CCV	1.00	1218																X									
CCB	1.00	1220																X									

FORM XIV - IN SW846

V 292.402	51360.1	0.4474	mg/L	0.00366	0.4474	mg/L	0.00366	0.82%
Zn 206.200	28569.4	2.5854	mg/L	0.02148	2.5854	mg/L	0.02148	0.83%
Na 330.237	-1814.9	-0.9456	mg/L	0.02307	-0.9456	mg/L	0.02307	2.44%
Cd 226.502	414.8	0.0066	mg/L	0.00001	0.0066	mg/L	0.00001	0.15%
Ti 334.940	5561140.5	8.8207	mg/L	0.03008	8.8207	mg/L	0.03008	0.34%
Ca 227.546	21469.0	196.14	mg/L	0.120	196.14	mg/L	0.120	0.06%

Sequence No.: 27
Sample ID: B0311-04A,5827
Analyst:
Sample Wt:
Dilution:

2/28/03

Autosampler Location: 80
Date Collected: 2/27/03 7:27:48 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0311-04A,5827

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1424.8	0.0020	mg/L	0.00018	0.0020	mg/L	0.00018	8.91%
Al 308.215	757443.7	23.569	mg/L	0.0247	23.569	mg/L	0.0247	0.10%
As 188.979	84.4	0.0558	mg/L	0.00193	0.0558	mg/L	0.00193	3.46%
Ba 233.527	14186.3	0.3064	mg/L	0.00131	0.3064	mg/L	0.00131	0.43%
Be 313.107	-4820.2	0.0007	mg/L	0.00003	0.0007	mg/L	0.00003	4.93%
Co 228.616	436.7	0.0291	mg/L	0.00016	0.0291	mg/L	0.00016	0.54%
Cr 267.716	3063.0	0.0576	mg/L	0.00022	0.0576	mg/L	0.00022	0.38%
Cu 324.752	48482.1	0.2021	mg/L	0.00009	0.2021	mg/L	0.00009	0.04%
Fe 273.955	1986297.0	62.161	mg/L	0.0778	62.161	mg/L	0.0778	0.13%
Mg 279.077	183672.9	12.560	mg/L	0.0347	12.560	mg/L	0.0347	0.28%
Mn 257.610	195101.7	0.4670	mg/L	0.00070	0.4670	mg/L	0.00070	0.15%
Ni 231.604	391.6	0.0683	mg/L	0.00013	0.0683	mg/L	0.00013	0.18%
Pb 220.353	948.7	0.5185	mg/L	0.00161	0.5185	mg/L	0.00161	0.31%
Sb 206.836	2.3	0.0021	mg/L	0.00171	0.0021	mg/L	0.00171	82.33%
Se 196.026	-9.9	0.0039	mg/L	0.00028	0.0039	mg/L	0.00028	7.30%
Tl 190.801	-22.5	-0.0073	mg/L	0.00142	-0.0073	mg/L	0.00142	19.35%
V 292.402	10760.3	0.0937	mg/L	0.00006	0.0937	mg/L	0.00006	0.06%
Zn 206.200	6331.2	0.5730	mg/L	0.00088	0.5730	mg/L	0.00088	0.15%
Na 330.237	-360.2	-0.1723	mg/L	0.06499	-0.1723	mg/L	0.06499	37.73%
Cd 226.502	85.4	0.0010	mg/L	0.00024	0.0010	mg/L	0.00024	23.50%
Ti 334.940	1179882.2	1.8714	mg/L	0.00059	1.8714	mg/L	0.00059	0.03%
Ca 227.546	4287.3	39.127	mg/L	0.1702	39.127	mg/L	0.1702	0.44%

Sequence No.: 28
Sample ID: B0320-02A,5827
Analyst:
Sample Wt: Sample: WOD-SU-1270203
Dilution:

Autosampler Location: 28
Date Collected: 2/27/03 7:31:54 PM
Sample Prep Volume:
Data Type: Original

90 % Solid
1.12 g
50 mL

Mean Data: B0320-02A,5827

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1616.9	0.0047	mg/L	0.00030	0.0047	mg/L	0.00030	6.32%
Al 308.215	3330446.3	103.65	mg/L	0.419	103.65	mg/L	0.419	0.40%
As 188.979	80.3	0.0519	mg/L	0.00042	0.0519	mg/L	0.00042	0.82%
Ba 233.527	18609.1	0.4019	mg/L	0.00173	0.4019	mg/L	0.00173	0.43%
Be 313.107	388.9	0.0029	mg/L	0.00000	0.0029	mg/L	0.00000	0.08%
Co 228.616	489.8	0.0333	mg/L	0.00027	0.0333	mg/L	0.00027	0.82%
Cr 267.716	6012.4	0.1124	mg/L	0.00083	0.1124	mg/L	0.00083	0.74%
Cu 324.752	7645.1	0.0377	mg/L	0.00053	0.0377	mg/L	0.00053	1.40%
Fe 273.955	2704171.0	84.636	mg/L	0.0441	84.636	mg/L	0.0441	0.05%
Mg 279.077	114376.4	7.8095	mg/L	0.09968	7.8095	mg/L	0.09968	1.28%
Mn 257.610	580699.1	1.3889	mg/L	0.00077	1.3889	mg/L	0.00077	0.06%
Ni 231.604	216.6	0.0626	mg/L	0.00001	0.0626	mg/L	0.00001	0.02%
Pb 220.353	255.6	0.0688	mg/L	0.00470	0.0688	mg/L	0.00470	6.83%
Sb 206.836	-1.2	-0.0031	mg/L	0.00056	-0.0031	mg/L	0.00056	17.77%
Se 196.026	-20.4	0.0028	mg/L	0.00219	0.0028	mg/L	0.00219	77.13%
Tl 190.801	-30.8	-0.0063	mg/L	0.00124	-0.0063	mg/L	0.00124	19.60%
V 292.402	18956.0	0.1689	mg/L	0.00147	0.1689	mg/L	0.00147	0.87%
Zn 206.200	1996.8	0.1799	mg/L	0.00119	0.1799	mg/L	0.00119	0.66%
Na 330.237	-576.9	-0.3230	mg/L	0.00367	-0.3230	mg/L	0.00367	1.14%

$0.0688 \frac{mg}{L} \times \frac{50\ mL}{1.12\ g} = \frac{3.07}{0.90} = 3.4\ mg/kg$ ✓

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 30, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC/SVOC/PCB CTO 848, NASA WALLOPS ISLAND SDG B0327**		
SAMPLES:	1/Aqueous		
	TB-022603*		
	3/Soil		
	WOD-SS-134	WOD-SS-135	WOD-SU-126-0203

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0327 consists of one (1) trip blank, and three (3) environmental soil samples. The environmental samples were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on February 26, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- The following compounds were detected in the trip blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	65 ug/L	650 ug/L
Acetone	40 ug/L	400 ug/L

Sample aliquot and dilution factors were taken into consideration when applying the blank action levels. Positive results below the blank action level for the aforementioned compounds have

been qualified (B) due to blank contamination.

- Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated (J).

- Sample WOD-SS-135 was <30% solids. All positive and non-detected results were qualified as estimated (J, UJ) in all fractions of sample WOD-SS-135.

- The aqueous volatile initial calibration performed on February 26 on the "V2" instrument exceeded the 30% (but was <50%) difference quality control criteria for acetone. The positive result for acetone in sample TB-022603 was qualified as estimated (J).

- The percent recovery of internal standards chlorobenzene-d5 and 1,4-dichlorobenzene-d4 were below the -50% quality control criteria in sample WOD-SS-134. All non-detected results for 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, 2-hexanone, dichlorobromomethane, bromoform, chlorobenzene, ethylbenzene, isopropylbenzene, m+p-xylene, o-xylene, styrene, tetrachloroethene, total xylenes, and 1,2,4-trichlorobenzene were qualified as estimated (UJ) in sample WOD-SS-134.

- The semivolatile initial calibration performed on March 12 exceeded the 30% (and was >50%) relative percent standard deviation (%RSD) quality control criteria for 3-nitroaniline. All results for 3-nitroaniline were qualified as estimated (UJ).

- The semivolatile initial calibration performed on March 12 exceeded the 30% (but was <50%) RPD quality control criteria for benzaldehyde. Positive and non-detected results for benzaldehyde were qualified as estimated (J, UJ).

- The semivolatile continuing calibration performed on March 15 at 00:31 exceeded the 25% (and was >50%) difference quality control criteria for benzaldehyde. Positive and non-detected results for benzaldehyde were qualified as estimated (J, UJ).

- The positive result for Aroclor 1260 in sample WOD-SS-135 exceeded the 25% difference between analytical columns quality control criteria. The result was qualified as estimated (J).

Notes

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The soil volatile continuing calibration performed on March 4 at 13:48 exceeded the 25% (but was <50%) difference quality control criteria for 1,2,4-trichlorobenzene. No qualifications were made on this basis because all results for 1,2,4-trichlorobenzene were non-detected.

The semivolatile initial calibration performed on March 12 exceeded the 30% (but was <50%) RSD quality control criteria for 4-chloroaniline and carbazole. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile continuing calibration performed on March 15 at 00:31 exceeded the 25% (but was <50%) percent difference quality control criteria for 4-chloroaniline, hexachlorocyclopentadiene, and atrazine. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile continuing calibration performed on March 15 at 16:32 exceeded the 25% (but was <50%) percent difference quality control criteria for 2,2'-oxybis(1-chloropropane), 4-chloroaniline, carbazole, 3,3'-dichlorobenzidine, and atrazine, (and was >50%) for hexachlorocyclopentadiene, 3-nitroaniline, 4-nitroaniline,

and benzaldehyde. No qualifications were made on this basis because no environmental samples were analyzed using this calibration.

The semivolatile blank spike exceeded the laboratory's percent recovery quality control criteria for carbazole, 2,2'-oxybis(1-chloropropane), and N-nitrosodiphenylamine. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances, internal standard non-compliances, method blank contamination, and percent difference between analytical columns non-compliance.

Other Factors Affecting Data Quality: Sample WOD-SS-135 was <30% solids.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0327 MEDIA: WATER DATA FRACTION:

nsample	TB-022603
samp_date	2/26/2003
lab_id	B0327-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	40	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-022603
samp_date	2/26/2003
lab_id	B0327-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	65		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03B
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	23	U	
1,1,2,2-TETRACHLOROETHANE	23	UJ	N
1,1,2-TRICHLOROETHANE	23	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	23	U	
1,1-DICHLOROETHANE	23	U	
1,1-DICHLOROETHENE	23	U	
1,2,4-TRICHLOROBENZENE	23	UJ	N
1,2,4-TRIMETHYLBENZENE	23	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	23	UJ	N
1,2-DIBROMOETHANE	23	U	
1,2-DICHLOROBENZENE	23	UJ	N
1,2-DICHLOROETHANE	23	U	
1,2-DICHLOROPROPANE	23	U	
1,3,5-TRIMETHYLBENZENE	23	UJ	N
1,3-DICHLOROBENZENE	23	UJ	N
1,4-DICHLOROBENZENE	23	UJ	N
2-BUTANONE	23	U	
2-HEXANONE	23	UJ	N
4-METHYL-2-PENTANONE	23	U	
ACETONE	71	B	B
BENZENE	23	U	
BROMODICHLOROMETHANE	23	UJ	N
BROMOFORM	23	UJ	N
BROMOMETHANE	23	U	
CARBON DISULFIDE	6	J	P
CARBON TETRACHLORIDE	23	U	
CHLOROBENZENE	23	UJ	N
CHLORODIBROMOMETHANE	23	U	
CHLOROETHANE	23	U	
CHLOROFORM	23	U	

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03B
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	23	U	
CIS-1,2-DICHLOROETHENE	23	U	
CIS-1,3-DICHLOROPROPENE	23	U	
CYCLOHEXANE	23	U	
DICHLORODIFLUOROMETHANE	23	U	
ETHYLBENZENE	23	UJ	N
ISOPROPYLBENZENE	23	UJ	N
M+P-XYLENES	23	UJ	N
METHYL ACETATE	23	U	
METHYL CYCLOHEXANE	23	U	
METHYL TERT-BUTYL ETHER	23	U	
METHYLENE CHLORIDE	5	B	B
O-XYLENE	23	UJ	N
STYRENE	23	UJ	N
TETRACHLOROETHENE	23	UJ	N
TOLUENE	23	U	
TOTAL XYLENES	23	UJ	N
TRANS-1,2-DICHLOROETHENE	23	U	
TRANS-1,3-DICHLOROPROPENE	23	U	
TRICHLOROETHENE	23	U	
TRICHLOROFLUOROMETHANE	23	U	
VINYL CHLORIDE	23	U	

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04B
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	74	UJ	Y
1,1,2,2-TETRACHLOROETHANE	74	UJ	Y
1,1,2-TRICHLOROETHANE	74	UJ	Y
1,1,2-TRICHLOROTRIFLUOROETHANE	74	UJ	Y
1,1-DICHLOROETHANE	74	UJ	Y
1,1-DICHLOROETHENE	74	UJ	Y
1,2,4-TRICHLOROBENZENE	74	UJ	Y
1,2,4-TRIMETHYLBENZENE	74	UJ	Y
1,2-DIBROMO-3-CHLOROPROPANE	74	UJ	Y
1,2-DIBROMOETHANE	74	UJ	Y
1,2-DICHLOROBENZENE	74	UJ	Y
1,2-DICHLOROETHANE	74	UJ	Y
1,2-DICHLOROPROPANE	74	UJ	Y
1,3,5-TRIMETHYLBENZENE	74	UJ	Y
1,3-DICHLOROBENZENE	74	UJ	Y
1,4-DICHLOROBENZENE	74	UJ	Y
2-BUTANONE	74	UJ	Y
2-HEXANONE	74	UJ	Y
4-METHYL-2-PENTANONE	74	UJ	Y
ACETONE	320	B	B
BENZENE	74	UJ	Y
BROMODICHLOROMETHANE	74	UJ	Y
BROMOFORM	74	UJ	Y
BROMOMETHANE	74	UJ	Y
CARBON DISULFIDE	13	J	PY
CARBON TETRACHLORIDE	74	UJ	Y
CHLOROBENZENE	74	UJ	Y
CHLORODIBROMOMETHANE	74	UJ	Y
CHLOROETHANE	74	UJ	Y
CHLOROFORM	74	UJ	Y

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: OV

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04B
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	74	UJ	Y
CIS-1,2-DICHLOROETHENE	74	UJ	Y
CIS-1,3-DICHLOROPROPENE	74	UJ	Y
CYCLOHEXANE	74	UJ	Y
DICHLORODIFLUOROMETHANE	74	UJ	Y
ETHYLBENZENE	74	UJ	Y
ISOPROPYLBENZENE	74	UJ	Y
M+P-XYLENES	74	UJ	Y
METHYL ACETATE	69	J	PY
METHYL CYCLOHEXANE	74	UJ	Y
METHYL TERT-BUTYL ETHER	74	UJ	Y
METHYLENE CHLORIDE	25	B	B
O-XYLENE	74	UJ	Y
STYRENE	74	UJ	Y
TETRACHLOROETHENE	74	UJ	Y
TOLUENE	74	UJ	Y
TOTAL XYLENES	74	UJ	Y
TRANS-1,2-DICHLOROETHENE	74	UJ	Y
TRANS-1,3-DICHLOROPROPENE	74	UJ	Y
TRICHLOROETHENE	74	UJ	Y
TRICHLOROFLUOROMETHANE	74	UJ	Y
VINYL CHLORIDE	74	UJ	Y

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	9	U	
1,1,2,2-TETRACHLOROETHANE	9	U	
1,1,2-TRICHLOROETHANE	9	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	9	U	
1,1-DICHLOROETHANE	9	U	
1,1-DICHLOROETHENE	9	U	
1,2,4-TRICHLOROBENZENE	9	U	
1,2,4-TRIMETHYLBENZENE	9	U	
1,2-DIBROMO-3-CHLOROPROPANE	9	U	
1,2-DIBROMOETHANE	9	U	
1,2-DICHLOROBENZENE	9	U	
1,2-DICHLOROETHANE	9	U	
1,2-DICHLOROPROPANE	9	U	
1,3,5-TRIMETHYLBENZENE	9	U	
1,3-DICHLOROBENZENE	9	U	
1,4-DICHLOROBENZENE	9	U	
2-BUTANONE	9	U	
2-HEXANONE	9	U	
4-METHYL-2-PENTANONE	9	U	
ACETONE	20	B	B
BENZENE	9	U	
BROMODICHLOROMETHANE	9	U	
BROMOFORM	9	U	
BROMOMETHANE	9	U	
CARBON DISULFIDE	9	U	
CARBON TETRACHLORIDE	9	U	
CHLOROBENZENE	9	U	
CHLORODIBROMOMETHANE	9	U	
CHLOROETHANE	9	U	
CHLOROFORM	9	U	

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02B
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	9	U	
CIS-1,2-DICHLOROETHENE	9	U	
CIS-1,3-DICHLOROPROPENE	9	U	
CYCLOHEXANE	9	U	
DICHLORODIFLUOROMETHANE	9	U	
ETHYLBENZENE	9	U	
ISOPROPYLBENZENE	9	U	
M+P-XYLENES	9	U	
METHYL ACETATE	9	U	
METHYL CYCLOHEXANE	9	U	
METHYL TERT-BUTYL ETHER	9	U	
METHYLENE CHLORIDE	6	B	B
O-XYLENE	9	U	
STYRENE	9	U	
TETRACHLOROETHENE	9	U	
TOLUENE	9	U	
TOTAL XYLENES	9	U	
TRANS-1,2-DICHLOROETHENE	9	U	
TRANS-1,3-DICHLOROPROPENE	9	U	
TRICHLOROETHENE	9	U	
TRICHLOROFLUOROMETHANE	9	U	
VINYL CHLORIDE	9	U	

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03A
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	620	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	620	U	
2,4,5-TRICHLOROPHENOL	1600	U	
2,4,6-TRICHLOROPHENOL	620	U	
2,4-DICHLOROPHENOL	620	U	
2,4-DIMETHYLPHENOL	620	U	
2,4-DINITROPHENOL	1600	U	
2,4-DINITROTOLUENE	620	U	
2,6-DINITROTOLUENE	620	U	
2-CHLORONAPHTHALENE	620	U	
2-CHLOROPHENOL	620	U	
2-METHYLNAPHTHALENE	620	U	
2-METHYLPHENOL	620	U	
2-NITROANILINE	1600	U	
2-NITROPHENOL	620	U	
3,3'-DICHLOROBENZIDINE	620	U	
3-NITROANILINE	1600	UJ	C
4,6-DINITRO-2-METHYLPHENOL	1600	U	
4-BROMOPHENYL PHENYL ETHER	620	U	
4-CHLORO-3-METHYLPHENOL	620	U	
4-CHLOROANILINE	620	U	
4-CHLOROPHENYL PHENYL ETHER	620	U	
4-METHYLPHENOL	620	U	
4-NITROANILINE	1600	U	
4-NITROPHENOL	1600	U	
ACENAPHTHENE	620	U	
ACENAPHTHYLENE	620	U	
ACETOPHENONE	620	U	
ANTHRACENE	620	U	
ATRAZINE	620	U	

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03A
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	180	J	CP
BENZO(A)ANTHRACENE	620	U	
BENZO(A)PYRENE	620	U	
BENZO(B)FLUORANTHENE	620	U	
BENZO(G,H,I)PERYLENE	620	U	
BENZO(K)FLUORANTHENE	620	U	
BIS(2-CHLOROETHOXY)METHANE	620	U	
BIS(2-CHLOROETHYL)ETHER	620	U	
BIS(2-ETHYLHEXYL)PHTHALATE	70	J	P
BUTYL BENZYL PHTHALATE	620	U	
CAPROLACTAM	620	U	
CARBAZOLE	620	U	
CHRYSENE	620	U	
DIBENZO(A,H)ANTHRACENE	620	U	
DIBENZOFURAN	620	U	
DIETHYL PHTHALATE	620	U	
DIMETHYL PHTHALATE	620	U	
DI-N-BUTYL PHTHALATE	620	U	
DI-N-OCTYL PHTHALATE	620	U	
FLUORANTHENE	620	U	
FLUORENE	620	U	
HEXACHLOROBENZENE	620	U	
HEXACHLOROBUTADIENE	620	U	
HEXACHLOROCYCLOPENTADIENE	620	U	
HEXACHLOROETHANE	620	U	
INDENO(1,2,3-CD)PYRENE	620	U	
ISOPHORONE	620	U	
NAPHTHALENE	620	U	
NITROBENZENE	620	U	
N-NITROSO-DI-N-PROPYLAMINE	620	U	

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03A
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	620	U	
PENTACHLOROPHENOL	1600	U	
PHENANTHRENE	620	U	
PHENOL	620	U	
PYRENE	620	U	

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04A
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	1200	UJ	Y
2,2'-OXYBIS(1-CHLOROPROPANE)	1200	UJ	Y
2,4,5-TRICHLOROPHENOL	3000	UJ	Y
2,4,6-TRICHLOROPHENOL	1200	UJ	Y
2,4-DICHLOROPHENOL	1200	UJ	Y
2,4-DIMETHYLPHENOL	1200	UJ	Y
2,4-DINITROPHENOL	3000	UJ	Y
2,4-DINITROTOLUENE	1200	UJ	Y
2,6-DINITROTOLUENE	1200	UJ	Y
2-CHLORONAPHTHALENE	1200	UJ	Y
2-CHLOROPHENOL	1200	UJ	Y
2-METHYLNAPHTHALENE	1200	UJ	Y
2-METHYLPHENOL	1200	UJ	Y
2-NITROANILINE	3000	UJ	Y
2-NITROPHENOL	1200	UJ	Y
3,3'-DICHLOROBENZIDINE	1200	UJ	Y
3-NITROANILINE	3000	UJ	CY
4,6-DINITRO-2-METHYLPHENOL	3000	UJ	Y
4-BROMOPHENYL PHENYL ETHER	1200	UJ	Y
4-CHLORO-3-METHYLPHENOL	1200	UJ	Y
4-CHLOROANILINE	1200	UJ	Y
4-CHLOROPHENYL PHENYL ETHER	1200	UJ	Y
4-METHYLPHENOL	1200	UJ	Y
4-NITROANILINE	3000	UJ	Y
4-NITROPHENOL	3000	UJ	Y
ACENAPHTHENE	1200	UJ	Y
ACENAPHTHYLENE	1200	UJ	Y
ACETOPHENONE	1200	UJ	Y
ANTHRACENE	1200	UJ	Y
ATRAZINE	1200	UJ	Y

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04A
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	1500	J	CY
BENZO(A)ANTHRACENE	1200	UJ	Y
BENZO(A)PYRENE	1200	UJ	Y
BENZO(B)FLUORANTHENE	180	J	PY
BENZO(G,H,I)PERYLENE	1200	UJ	Y
BENZO(K)FLUORANTHENE	1200	UJ	Y
BIS(2-CHLOROETHOXY)METHANE	1200	UJ	Y
BIS(2-CHLOROETHYL)ETHER	1200	UJ	Y
BIS(2-ETHYLHEXYL)PHTHALATE	170	J	PY
BUTYL BENZYL PHTHALATE	1200	UJ	Y
CAPROLACTAM	1200	UJ	Y
CARBAZOLE	1200	UJ	Y
CHRYSENE	1200	UJ	Y
DIBENZO(A,H)ANTHRACENE	1200	UJ	Y
DIBENZOFURAN	1200	UJ	Y
DIETHYL PHTHALATE	1200	UJ	Y
DIMETHYL PHTHALATE	1200	UJ	Y
DI-N-BUTYL PHTHALATE	1200	UJ	Y
DI-N-OCTYL PHTHALATE	1200	UJ	Y
FLUORANTHENE	160	J	PY
FLUORENE	1200	UJ	Y
HEXACHLOROBENZENE	1200	UJ	Y
HEXACHLOROBUTADIENE	1200	UJ	Y
HEXACHLOROCYCLOPENTADIENE	1200	UJ	Y
HEXACHLOROETHANE	1200	UJ	Y
INDENO(1,2,3-CD)PYRENE	1200	UJ	Y
ISOPHORONE	1200	UJ	Y
NAPHTHALENE	1200	UJ	Y
NITROBENZENE	1200	UJ	Y
N-NITROSO-DI-N-PROPYLAMINE	1200	UJ	Y

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04A
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	1200	UJ	Y
PENTACHLOROPHENOL	3000	UJ	Y
PHENANTHRENE	1200	UJ	Y
PHENOL	1200	UJ	Y
PYRENE	170	J	PY

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: OS

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1-BIPHENYL	380	U	
2,2'-OXYBIS(1-CHLOROPROPANE)	380	U	
2,4,5-TRICHLOROPHENOL	950	U	
2,4,6-TRICHLOROPHENOL	380	U	
2,4-DICHLOROPHENOL	380	U	
2,4-DIMETHYLPHENOL	380	U	
2,4-DINITROPHENOL	950	U	
2,4-DINITROTOLUENE	380	U	
2,6-DINITROTOLUENE	380	U	
2-CHLORONAPHTHALENE	380	U	
2-CHLOROPHENOL	380	U	
2-METHYLNAPHTHALENE	380	U	
2-METHYLPHENOL	380	U	
2-NITROANILINE	950	U	
2-NITROPHENOL	380	U	
3,3'-DICHLOROBENZIDINE	380	U	
3-NITROANILINE	950	UJ	C
4,6-DINITRO-2-METHYLPHENOL	950	U	
4-BROMOPHENYL PHENYL ETHER	380	U	
4-CHLORO-3-METHYLPHENOL	380	U	
4-CHLOROANILINE	380	U	
4-CHLOROPHENYL PHENYL ETHER	380	U	
4-METHYLPHENOL	380	U	
4-NITROANILINE	950	U	
4-NITROPHENOL	950	U	
ACENAPHTHENE	380	U	
ACENAPHTHYLENE	380	U	
ACETOPHENONE	380	U	
ANTHRACENE	380	U	
ATRAZINE	380	U	

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZALDEHYDE	380	UJ	C
BENZO(A)ANTHRACENE	380	U	
BENZO(A)PYRENE	380	U	
BENZO(B)FLUORANTHENE	380	U	
BENZO(G,H,I)PERYLENE	380	U	
BENZO(K)FLUORANTHENE	380	U	
BIS(2-CHLOROETHOXY)METHANE	380	U	
BIS(2-CHLOROETHYL)ETHER	380	U	
BIS(2-ETHYLHEXYL)PHTHALATE	63	J	P
BUTYL BENZYL PHTHALATE	380	U	
CAPROLACTAM	380	U	
CARBAZOLE	380	U	
CHRYSENE	380	U	
DIBENZO(A,H)ANTHRACENE	380	U	
DIBENZOFURAN	380	U	
DIETHYL PHTHALATE	380	U	
DIMETHYL PHTHALATE	380	U	
DI-N-BUTYL PHTHALATE	380	U	
DI-N-OCTYL PHTHALATE	380	U	
FLUORANTHENE	380	U	
FLUORENE	380	U	
HEXACHLOROBENZENE	380	U	
HEXACHLOROBUTADIENE	380	U	
HEXACHLOROCYCLOPENTADIENE	380	U	
HEXACHLOROETHANE	380	U	
INDENO(1,2,3-CD)PYRENE	380	U	
ISOPHORONE	380	U	
NAPHTHALENE	380	U	
NITROBENZENE	380	U	
N-NITROSO-DI-N-PROPYLAMINE	380	U	

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
N-NITROSODIPHENYLAMINE	380	U	
PENTACHLOROPHENOL	950	U	
PHENANTHRENE	380	U	
PHENOL	380	U	
PYRENE	380	U	

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: PE

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03A
qc_type	NM
units	UG/KG
Pct_Solids	53
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	62	U	
AROCLOR-1221	62	U	
AROCLOR-1232	62	U	
AROCLOR-1242	62	U	
AROCLOR-1248	62	U	
AROCLOR-1254	62	U	
AROCLOR-1260	62	U	

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04A
qc_type	NM
units	UG/KG
Pct_Solids	27
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	120	UJ	Y
AROCLOR-1221	120	UJ	Y
AROCLOR-1232	120	UJ	Y
AROCLOR-1242	120	UJ	Y
AROCLOR-1248	120	UJ	Y
AROCLOR-1254	120	UJ	Y
AROCLOR-1260	220	J	UY

nsample	WOD-SU-126-0203
samp_date	2/26/2003
lab_id	B0327-02A
qc_type	NM
units	UG/KG
Pct_Solids	85
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	39	U	
AROCLOR-1221	39	U	
AROCLOR-1232	39	U	
AROCLOR-1242	39	U	
AROCLOR-1248	39	U	
AROCLOR-1254	39	U	
AROCLOR-1260	39	U	

Appendix B

Results as Reported by the Laboratory

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: B0327-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5209

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	40	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	65	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: B0327-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5209

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: B0327-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5209

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4268

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 47 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	23	U
74-87-3	Chloromethane	23	U
75-01-4	Vinyl Chloride	23	U
74-83-9	Bromomethane	23	U
75-00-3	Chloroethane	23	U
75-69-4	Trichlorofluoromethane	23	U
75-35-4	1,1-Dichloroethene	23	U
67-64-1	Acetone	71	
75-15-0	Carbon Disulfide	6	J
75-09-2	Methylene Chloride	5	J
156-60-5	trans-1,2-Dichloroethene	23	U
1634-04-4	Methyl tert-butyl ether	23	U
75-34-3	1,1-Dichloroethane	23	U
78-93-3	2-Butanone	23	U
156-59-2	cis-1,2-Dichloroethene	23	U
67-66-3	Chloroform	23	U
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
107-06-2	1,2-Dichloroethane	23	U
71-43-2	Benzene	23	U
79-01-6	Trichloroethene	23	U
78-87-5	1,2-Dichloropropane	23	U
75-27-4	Bromodichloromethane	23	U
10061-01-5	cis-1,3-Dichloropropene	23	U
108-10-1	4-Methyl-2-pentanone	23	U
108-88-3	Toluene	23	U
10061-02-6	trans-1,3-Dichloropropene	23	U
79-00-5	1,1,2-Trichloroethane	23	U
127-18-4	Tetrachloroethene	23	U
591-78-6	2-Hexanone	23	U
124-48-1	Dibromochloromethane	23	U
106-93-4	1,2-Dibromoethane	23	U
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4268

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 47 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	23	U
95-47-6	o-Xylene	23	U
1330-20-7	Xylene (Total)	23	U
100-42-5	Styrene	23	U
75-25-2	Bromoform	23	U
98-82-8	Isopropylbenzene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
108-67-8	1,3,5-Trimethylbenzene	23	U
95-63-6	1,2,4-Trimethylbenzene	23	U
541-73-1	1,3-Dichlorobenzene	23	U
106-46-7	1,4-Dichlorobenzene	23	U
95-50-1	1,2-Dichlorobenzene	23	U
96-12-8	1,2-Dibromo-3-chloropropane	23	U
120-82-1	1,2,4-Trichlorobenzene	23	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	23	U
79-20-9	Methyl Acetate	23	U
110-81-7	Cyclohexane	23	U
108-87-2	Methylcyclohexane	23	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03B

Sample wt/vol: 4.1 (g/mL) G Lab File ID: V5E4268

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 47 Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	75-18-3	DIMETHYL SULFIDE	3.50	10	NJ
2.					
3.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04B

Sample wt/vol: 2.5 (g/mL) G Lab File ID: V5E4246

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 73 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	74	U
74-87-3	Chloromethane	74	U
75-01-4	Vinyl Chloride	74	U
74-83-9	Bromomethane	74	U
75-00-3	Chloroethane	74	U
75-69-4	Trichlorofluoromethane	74	U
75-35-4	1,1-Dichloroethene	74	U
67-64-1	Acetone	320	
75-15-0	Carbon Disulfide	13	J
75-09-2	Methylene Chloride	25	J
156-60-5	trans-1,2-Dichloroethene	74	U
1634-04-4	Methyl tert-butyl ether	74	U
75-34-3	1,1-Dichloroethane	74	U
78-93-3	2-Butanone	74	U
156-59-2	cis-1,2-Dichloroethene	74	U
67-66-3	Chloroform	74	U
71-55-6	1,1,1-Trichloroethane	74	U
56-23-5	Carbon Tetrachloride	74	U
107-06-2	1,2-Dichloroethane	74	U
71-43-2	Benzene	74	U
79-01-6	Trichloroethene	74	U
78-87-5	1,2-Dichloropropane	74	U
75-27-4	Bromodichloromethane	74	U
10061-01-5	cis-1,3-Dichloropropene	74	U
108-10-1	4-Methyl-2-pentanone	74	U
108-88-3	Toluene	74	U
10061-02-6	trans-1,3-Dichloropropene	74	U
79-00-5	1,1,2-Trichloroethane	74	U
127-18-4	Tetrachloroethene	74	U
591-78-6	2-Hexanone	74	U
124-48-1	Dibromochloromethane	74	U
106-93-4	1,2-Dibromoethane	74	U
108-90-7	Chlorobenzene	74	U
100-41-4	Ethylbenzene	74	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04B

Sample wt/vol: 2.5 (g/mL) G Lab File ID: V5E4246

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 73 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	74	U
95-47-6	o-Xylene	74	U
1330-20-7	Xylene (Total)	74	U
100-42-5	Styrene	74	U
75-25-2	Bromoform	74	U
98-82-8	Isopropylbenzene	74	U
79-34-5	1,1,2,2-Tetrachloroethane	74	U
108-67-8	1,3,5-Trimethylbenzene	74	U
95-63-6	1,2,4-Trimethylbenzene	74	U
541-73-1	1,3-Dichlorobenzene	74	U
106-46-7	1,4-Dichlorobenzene	74	U
95-50-1	1,2-Dichlorobenzene	74	U
96-12-8	1,2-Dibromo-3-chloropropane	74	U
120-82-1	1,2,4-Trichlorobenzene	74	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	74	U
79-20-9	Methyl Acetate	69	J
110-81-7	Cyclohexane	74	U
108-87-2	Methylcyclohexane	74	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04B

Sample wt/vol: 2.5 (g/mL) G Lab File ID: V5E4246

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 73 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.89	28	J
2.	66-25-1	HEXANAL	8.75	200	NJ
3.		UNKNOWN	11.07	64	J
4.					
5.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02B

Sample wt/vol: 6.3 (g/mL) G Lab File ID: V5E4244

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 15 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9	U
74-87-3	Chloromethane	9	U
75-01-4	Vinyl Chloride	9	U
74-83-9	Bromomethane	9	U
75-00-3	Chloroethane	9	U
75-69-4	Trichlorofluoromethane	9	U
75-35-4	1,1-Dichloroethene	9	U
67-64-1	Acetone	20	
75-15-0	Carbon Disulfide	9	U
75-09-2	Methylene Chloride	6	J
156-60-5	trans-1,2-Dichloroethene	9	U
1634-04-4	Methyl tert-butyl ether	9	U
75-34-3	1,1-Dichloroethane	9	U
78-93-3	2-Butanone	9	U
156-59-2	cis-1,2-Dichloroethene	9	U
67-66-3	Chloroform	9	U
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
107-06-2	1,2-Dichloroethane	9	U
71-43-2	Benzene	9	U
79-01-6	Trichloroethene	9	U
78-87-5	1,2-Dichloropropane	9	U
75-27-4	Bromodichloromethane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
108-10-1	4-Methyl-2-pentanone	9	U
108-88-3	Toluene	9	U
10061-02-6	trans-1,3-Dichloropropene	9	U
79-00-5	1,1,2-Trichloroethane	9	U
127-18-4	Tetrachloroethene	9	U
591-78-6	2-Hexanone	9	U
124-48-1	Dibromochloromethane	9	U
106-93-4	1,2-Dibromoethane	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02B

Sample wt/vol: 6.3 (g/mL) G Lab File ID: V5E4244

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 15 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	9	U
95-47-6	o-Xylene	9	U
1330-20-7	Xylene (Total)	9	U
100-42-5	Styrene	9	U
75-25-2	Bromoform	9	U
98-82-8	Isopropylbenzene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-67-8	1,3,5-Trimethylbenzene	9	U
95-63-6	1,2,4-Trimethylbenzene	9	U
541-73-1	1,3-Dichlorobenzene	9	U
106-46-7	1,4-Dichlorobenzene	9	U
95-50-1	1,2-Dichlorobenzene	9	U
96-12-8	1,2-Dibromo-3-chloropropane	9	U
120-82-1	1,2,4-Trichlorobenzene	9	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	9	U
79-20-9	Methyl Acetate	9	U
110-81-7	Cyclohexane	9	U
108-87-2	Methylcyclohexane	9	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02B

Sample wt/vol: 6.3 (g/mL) G Lab File ID: V5E4244

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 15 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.75	4	J
2.					
3.					
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2358

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	620	U
111-44-4	bis(2-Chloroethyl)Ether	620	U
95-57-8	2-Chlorophenol	620	U
95-48-7	2-Methylphenol	620	U
108-60-1	2,2'-oxybis(1-Chloropropane)	620	U
106-44-5	4-Methylphenol	620	U
621-64-7	N-Nitroso-di-n-propylamine	620	U
67-72-1	Hexachloroethane	620	U
98-95-3	Nitrobenzene	620	U
78-59-1	Isophorone	620	U
88-75-5	2-Nitrophenol	620	U
105-67-9	2,4-Dimethylphenol	620	U
120-83-2	2,4-Dichlorophenol	620	U
91-20-3	Naphthalene	620	U
106-47-8	4-Chloroaniline	620	U
111-91-1	bis(2-Chloroethoxy)methane	620	U
87-68-3	Hexachlorobutadiene	620	U
59-50-7	4-Chloro-3-Methylphenol	620	U
91-57-6	2-Methylnaphthalene	620	U
77-47-4	Hexachlorocyclopentadiene	620	U
88-06-2	2,4,6-Trichlorophenol	620	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	620	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	620	U
208-96-8	Acenaphthylene	620	U
606-20-2	2,6-Dinitrotoluene	620	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	620	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	620	U
121-14-2	2,4-Dinitrotoluene	620	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2358

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	620	U
7005-72-3	4-Chlorophenyl-phenylether	620	U
86-73-7	Fluorene	620	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	620	U
101-55-3	4-Bromophenyl-phenylether	620	U
118-74-1	Hexachlorobenzene	620	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	620	U
120-12-7	Anthracene	620	U
86-74-8	Carbazole	620	U
84-74-2	Di-n-butylphthalate	620	U
206-44-0	Fluoranthene	620	U
129-00-0	Pyrene	620	U
85-68-7	Butylbenzylphthalate	620	U
91-94-1	3,3'-Dichlorobenzidine	620	U
56-55-3	Benzo(a)anthracene	620	U
218-01-9	Chrysene	620	U
117-81-7	bis(2-Ethylhexyl)phthalate	70	J
117-84-0	Di-n-octylphthalate	620	U
205-99-2	Benzo(b)fluoranthene	620	U
207-08-9	Benzo(k)fluoranthene	620	U
50-32-8	Benzo(a)pyrene	620	U
193-39-5	Indeno(1,2,3-cd)pyrene	620	U
53-70-3	Dibenzo(a,h)anthracene	620	U
191-24-2	Benzo(g,h,i)perylene	620	U
92-52-4	1,1'-Biphenyl	620	U
98-86-2	Acetophenone	620	U
1912-24-9	Atrazine	620	U
100-52-7	Benzaldehyde	180	J
105-60-2	Caprolactum	620	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2358

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.50	570	J
2.	57-10-3	HEXADECANOIC ACID	18.07	830	NJ
3.	1686-67-5	PHENANTHRENE, 7-ETHENYL-1,2,	18.12	1000	NJ
4.		UNKNOWN	19.83	850	J
5.	123-95-5	OCTADECANOIC ACID, BUTYL EST	21.29	1500	NJ
6.		UNKNOWN	21.74	2000	J
7.		UNKNOWN	22.06	2700	J
8.		UNKNOWN	22.60	910	J
9.		UNKNOWN	22.92	730	J
10.		UNKNOWN	23.36	1200	J
11.		UNKNOWN	23.91	1300	J
12.	59-02-9	VITAMIN E	26.49	5000	NJ
13.	35060-26-5	D:B-FRIEDO-18,19-SECOLUP-19-	27.97	9700	NJ
14.		UNKNOWN	28.85	4800	J
15.		UNKNOWN	29.36	2000	J
16.		UNKNOWN	29.78	5000	J
17.	1058-61-3	STIGMAST-4-EN-3-ONE	30.67	3300	NJ
18.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2359

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 73 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1200	U
111-44-4	bis(2-Chloroethyl)Ether	1200	U
95-57-8	2-Chlorophenol	1200	U
95-48-7	2-Methylphenol	1200	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1200	U
106-44-5	4-Methylphenol	1200	U
621-64-7	N-Nitroso-di-n-propylamine	1200	U
67-72-1	Hexachloroethane	1200	U
98-95-3	Nitrobenzene	1200	U
78-59-1	Isophorone	1200	U
88-75-5	2-Nitrophenol	1200	U
105-67-9	2,4-Dimethylphenol	1200	U
120-83-2	2,4-Dichlorophenol	1200	U
91-20-3	Naphthalene	1200	U
106-47-8	4-Chloroaniline	1200	U
111-91-1	bis(2-Chloroethoxy)methane	1200	U
87-68-3	Hexachlorobutadiene	1200	U
59-50-7	4-Chloro-3-Methylphenol	1200	U
91-57-6	2-Methylnaphthalene	1200	U
77-47-4	Hexachlorocyclopentadiene	1200	U
88-06-2	2,4,6-Trichlorophenol	1200	U
95-95-4	2,4,5-Trichlorophenol	3000	U
91-58-7	2-Chloronaphthalene	1200	U
88-74-4	2-Nitroaniline	3000	U
131-11-3	Dimethylphthalate	1200	U
208-96-8	Acenaphthylene	1200	U
606-20-2	2,6-Dinitrotoluene	1200	U
99-09-2	3-Nitroaniline	3000	U
83-32-9	Acenaphthene	1200	U
51-28-5	2,4-Dinitrophenol	3000	U
100-02-7	4-Nitrophenol	3000	U
132-64-9	Dibenzofuran	1200	U
121-14-2	2,4-Dinitrotoluene	1200	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2359

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 73 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1200	U
7005-72-3	4-Chlorophenyl-phenylether	1200	U
86-73-7	Fluorene	1200	U
100-01-6	4-Nitroaniline	3000	U
534-52-1	4,6-Dinitro-2-methylphenol	3000	U
86-30-6	N-Nitrosodiphenylamine (1)	1200	U
101-55-3	4-Bromophenyl-phenylether	1200	U
118-74-1	Hexachlorobenzene	1200	U
87-86-5	Pentachlorophenol	3000	U
85-01-8	Phenanthrene	1200	U
120-12-7	Anthracene	1200	U
86-74-8	Carbazole	1200	U
84-74-2	Di-n-butylphthalate	1200	U
206-44-0	Fluoranthene	160	J
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	1200	U
91-94-1	3,3'-Dichlorobenzidine	1200	U
56-55-3	Benzo(a)anthracene	1200	U
218-01-9	Chrysene	1200	U
117-81-7	bis(2-Ethylhexyl)phthalate	170	J
117-84-0	Di-n-octylphthalate	1200	U
205-99-2	Benzo(b)fluoranthene	180	J
207-08-9	Benzo(k)fluoranthene	1200	U
50-32-8	Benzo(a)pyrene	1200	U
193-39-5	Indeno(1,2,3-cd)pyrene	1200	U
53-70-3	Dibenzo(a,h)anthracene	1200	U
191-24-2	Benzo(g,h,i)perylene	1200	U
92-52-4	1,1'-Biphenyl	1200	U
98-86-2	Acetophenone	1200	U
1912-24-9	Atrazine	1200	U
100-52-7	Benzaldehyde	1500	
105-60-2	Caprolactum	1200	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: S3C2359

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 73 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	87-44-5	CARYOPHYLLENE	13.10	1800	NJ
2.	57-10-3	HEXADECANOIC ACID	13.86	1800	NJ
3.	544-63-8	TETRADECANOIC ACID	16.30	1600	NJ
4.		UNKNOWN	16.60	1200	J
5.		UNKNOWN	16.96	1200	J
6.		UNKNOWN	17.22	1100	J
7.		UNKNOWN	17.42	1500	J
8.	57-10-3	HEXADECANOIC ACID	18.08	2200	NJ
9.		UNKNOWN	19.41	1600	J
10.		UNKNOWN	19.83	2100	J
11.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.28	2100	NJ
12.		UNKNOWN	22.05	1300	J
13.		UNKNOWN	23.01	2100	J
14.		UNKNOWN	23.27	1400	J
15.	301-02-0	9-OCTADECENAMIDE, (Z)-	23.92	3100	NJ
16.		UNKNOWN	28.01	60000	J
17.		UNKNOWN	28.87	20000	J
18.					
19.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2357

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)Ether	380	U
95-57-8	2-Chlorophenol	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitroso-di-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
120-83-2	2,4-Dichlorophenol	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-Methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	950	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	950	U
131-11-3	Dimethylphthalate	380	U
208-96-8	Acenaphthylene	380	U
606-20-2	2,6-Dinitrotoluene	380	U
99-09-2	3-Nitroaniline	950	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	950	U
100-02-7	4-Nitrophenol	950	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2357

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl-phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	950	U
534-52-1	4,6-Dinitro-2-methylphenol	950	U
86-30-6	N-Nitrosodiphenylamine (1)	380	U
101-55-3	4-Bromophenyl-phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	950	U
85-01-8	Phenanthrene	380	U
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butylphthalate	380	U
206-44-0	Fluoranthene	380	U
129-00-0	Pyrene	380	U
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	380	U
218-01-9	Chrysene	380	U
117-81-7	bis(2-Ethylhexyl)phthalate	63	J
117-84-0	Di-n-octylphthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	U
207-08-9	Benzo(k)fluoranthene	380	U
50-32-8	Benzo(a)pyrene	380	U
193-39-5	Indeno(1,2,3-cd)pyrene	380	U
53-70-3	Dibenzo(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	380	U
92-52-4	1,1'-Biphenyl	380	U
98-86-2	Acetophenone	380	U
1912-24-9	Atrazine	380	U
100-52-7	Benzaldehyde	380	U
105-60-2	Caprolactum	380	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02A

Sample wt/vol: 30.7 (g/mL) G Lab File ID: S3C2357

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 15 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.52	160	J
2.		UNKNOWN	19.83	1100	J
3.	646-13-9	OCTADECANOIC ACID, 2-METHYLP	21.28	1000	NJ
4.		UNKNOWN	23.91	930	J
5.		UNKNOWN	27.90	270	J
6.					
7.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.3 (g/mL) G Lab File ID: E1D9636F

% Moisture: 47 decanted: (Y/N) N Date Received: 02/27/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	62	U
11104-28-2	Aroclor-1221	62	U
11141-16-5	Aroclor-1232	62	U
53469-21-9	Aroclor-1242	62	U
12672-29-6	Aroclor-1248	62	U
11097-69-1	Aroclor-1254	62	U
11096-82-5	Aroclor-1260	62	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9637F

% Moisture: 73 decanted: (Y/N) N Date Received: 02/27/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	120	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	120	U
53469-21-9	Aroclor-1242	120	U
12672-29-6	Aroclor-1248	120	U
11097-69-1	Aroclor-1254	120	U
11096-82-5	Aroclor-1260	220	P

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

SV1260203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-02A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9635F

% Moisture: 15 decanted: (Y/N) N Date Received: 02/27/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	39	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.
-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

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From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

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Doug

B0327

HOLDING TIME
05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0227LCSS	LCS	B0327	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	PBS	0227PBS	M_BLANK	B0327	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	WOD-SS-134	B0327-03A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
MG/KG	WOD-SS-135	B0327-04A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
MG/KG	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
%	LCSS	0227LCSS	LCS	B0327	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	PBS	0227PBS	M_BLANK	B0327	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	WOD-SS-134	B0327-03A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
MG/KG	WOD-SS-135	B0327-04A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
MG/KG	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
%	SBLK3S	MB-5840	M_BLANK	B0327	OS	/ /	02/28/03	03/15/03	0	15	0
%	SBLK3SLCS	LCS-5840	LCS	B0327	OS	/ /	02/28/03	03/15/03	0	15	0
%	WOD-SS-134	B0327-03A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
%	WOD-SS-135	B0327-04A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
%	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
UG/L	TB-022603	B0327-01A	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
UG/L	VBLK2D	V2B0303A	M_BLANK	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK2DLCS	V2L0303A	LCS	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5K	V5B0303A	M_BLANK	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5KLCS	V5L0303A	LCS	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5L	V5B0304A	M_BLANK	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCS	V5L0304A	LCS	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCSD	V5L0304B	LCSD	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	WOD-SS-134	B0327-03B	NORMAL	B0327	OV	02/26/03	03/04/03	03/04/03	6	0	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-135	B0327-04B	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
%	WOD-SU-126-0203	B0327-02B	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
%	BBLK1G	MB-5838	M_BLANK	B0327	PCB	/ /	02/28/03	03/04/03	0	4	0
%	BBLK1GLCS	LCS-5838	LCS	B0327	PCB	/ /	02/28/03	03/04/03	0	4	0
%	WOD-SS-134	B0327-03A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
%	WOD-SS-135	B0327-04A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
%	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
S.U.	WOD-SS-134	B0327-03A	NORMAL	B0327	PH	02/26/03	03/07/03	03/07/03	9	0	9
S.U.	WOD-SS-135	B0327-04A	NORMAL	B0327	PH	02/26/03	03/07/03	03/07/03	9	0	9

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

March 25, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0327

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

MITKEM CORPORATION

* Data Summary Pack *

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0327

Mitkem Project ID: B0327

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and three soil samples that were collected on February 26, 2003, and received at Mitkem on February 27, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: internal standard area counts were within the QC criteria with the exception of sample WOD-SS-134. The sample was not re-analyzed as all surrogate recoveries were within the QC limits. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery 2,2'-oxybis (1-chloropropane), N-nitrosodiphenylamine and carbazole in S3SLCS.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

ALKANE NARRATIVE REPORT
Report date : 03/17/2003
SDG: B0327

Client Sample ID: SV1260203 Lab Sample ID: B0327-02A File ID: S3C2357

Compound	RT	Est. Conc.	Q
Cyclic alkane	15.67	240	J

Client Sample ID: WOD-SS-134 Lab Sample ID: B0327-03A File ID: S3C2358

Compound	RT	Est. Conc.	Q
Straight-chain Alkane	24.53	2400	J
Straight-chain Alkane	26.00	1800	J

Client Sample ID: WOD-SS-135 Lab Sample ID: B0327-04A File ID: S3C2359

Compound	RT	Est. Conc.	Q
Straight-chain Alkane	24.53	2900	J

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE	LAB PROJECT #: B0327
NAME: Garth Glenn	FAX: 610 491 9645	NAME	FAX	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220 cm 2/26/03		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA vial HCl	TCL VOC 5 grm encore sampler	TCL VOC 40z Amber glass widemouth	TCL SVOC PCB 40z Amber glass widemouth	TAL Metals % moisture 40z Amber glass widemouth	TAL Metals + Pet 40z Amber glass widemouth	TAL % Moisture 80z Amber glass widemouth	COMMENTS
TB-022603	2/26/03 0715		X	X			01	2	2							Trip Blank
WOD-SW-126-0203	2/26/03 0824		X		X		02	5		3	1	1				
WOD-SS-134	2/26/03 0940		X		X		03	7		3	1		1	1	1	
WOD-SS-135	2/26/03 1000		X		X		04	7		3	1		1	1	1	
	/															
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/26/03 1700	[signature]	2-27-03 0900	Trip Blank was provided by the Lab	3C
		/		/	Samples shipped via Airbill NO	
		/		/	8286 8471 2636	

0100

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: V2F5112 BFB Injection Date: 02/26/03

Instrument ID: V2 BFB Injection Time: 1222

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.4
75	30.0 - 60.0% of mass 95	44.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.3 (7.2)1
176	95.0 - 101.0% of mass 174	70.3 (95.4)1
177	5.0 - 9.0% of mass 176	4.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502A	V2S0226A	V2F5113	02/26/03	1249
02	VSTD0052A	V2S0226B	V2F5114	02/26/03	1317
03	VSTD2002A	V2S0226D	V2F5116	02/26/03	1415
04	VSTD1002A	V2S0226E	V2F5117	02/26/03	1443
05	VSTD0202A	V2S0226F	V2F5118	02/26/03	1512
06					
07					
08					
09					
10					
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17					
18					
19					
20					
21					
22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.372	0.293	0.292	0.298	0.284	0.308	11.7
Chloromethane	*	0.520	0.413	0.405	0.410	0.381	0.426	12.7*
Vinyl Chloride		0.388	0.309	0.310	0.313	0.294	0.323	11.5
Bromomethane		0.248	0.188	0.184	0.155	0.133	0.182	23.8
Chloroethane		0.208	0.158	0.162	0.146	0.132	0.161	17.6
Trichlorofluoromethane		0.341	0.274	0.278	0.287	0.285	0.293	9.3
1,1-Dichloroethene		0.225	0.211	0.218	0.215	0.205	0.215	3.5
Acetone		0.127	0.075	0.061	0.064	0.055	0.076	38.3
Carbon Disulfide		0.904	0.711	0.721	0.718	0.691	0.749	11.7
Methylene Chloride		0.272	0.235	0.233	0.225	0.219	0.237	8.7
trans-1,2-Dichloroethene		0.245	0.236	0.237	0.229	0.220	0.233	4.0
Methyl tert-butyl ether		0.664	0.536	0.556	0.536	0.495	0.557	11.4
1,1-Dichloroethane	*	0.489	0.486	0.495	0.484	0.471	0.485	1.8*
2-Butanone		0.132	0.108	0.100	0.099	0.092	0.106	14.4
cis-1,2-Dichloroethene		0.290	0.277	0.277	0.273	0.259	0.275	4.0
Chloroform		0.448	0.447	0.458	0.448	0.429	0.446	2.4
1,1,1-Trichloroethane		0.369	0.361	0.373	0.362	0.355	0.364	1.9
Carbon Tetrachloride		0.301	0.297	0.311	0.307	0.302	0.304	1.8
1,2-Dichloroethane		0.314	0.316	0.323	0.307	0.284	0.309	4.9
Benzene		1.017	1.006	1.020	0.982	0.900	0.985	5.0
Trichloroethene		0.245	0.248	0.244	0.248	0.240	0.245	1.4
1,2-Dichloropropane		0.249	0.249	0.254	0.242	0.228	0.244	4.2
Bromodichloromethane		0.336	0.339	0.348	0.340	0.335	0.340	1.6
cis-1,3-Dichloropropene		0.403	0.414	0.430	0.423	0.415	0.417	2.5
4-Methyl-2-pentanone		0.315	0.206	0.204	0.206	0.198	0.226	22.1
Toluene		0.985	0.992	1.018	0.986	0.908	0.978	4.2
trans-1,3-Dichloropropene		0.332	0.352	0.378	0.368	0.359	0.358	4.8
1,1,2-Trichloroethane		0.196	0.200	0.200	0.195	0.192	0.197	1.6
Tetrachloroethene		0.319	0.310	0.296	0.305	0.296	0.305	3.2
2-Hexanone		0.242	0.193	0.195	0.208	0.202	0.208	9.6
Dibromochloromethane		0.364	0.360	0.352	0.358	0.358	0.358	1.2
1,2-Dibromoethane		0.303	0.315	0.311	0.322	0.319	0.314	2.3
Chlorobenzene	*	0.955	0.950	0.941	0.897	0.809	0.910	6.7*
Ethylbenzene		0.486	0.494	0.497	0.488	0.447	0.482	4.2
m,p-Xylene		0.608	0.614	0.603	0.563	0.521	0.582	6.8
o-Xylene		0.596	0.599	0.605	0.568	0.522	0.578	5.9
Xylene (Total)		0.604	0.609	0.603	0.565	0.521	0.580	6.5

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.983	1.023	1.021	0.944	0.882	0.971	6.1
Bromoform	*	0.239	0.240	0.231	0.242	0.238	0.238	1.9*
Isopropylbenzene		1.412	1.463	1.480	1.447	1.355	1.431	3.5
1,1,2,2-Tetrachloroethane	*	0.885	0.833	0.814	0.779	0.782	0.819	5.3*
1,3,5-Trimethylbenzene		2.724	2.653	2.654	2.465	2.485	2.596	4.4
1,2,4-Trimethylbenzene		2.717	2.651	2.732	2.625	2.679	2.681	1.7
1,3-Dichlorobenzene		1.491	1.468	1.456	1.474	1.556	1.489	2.7
1,4-Dichlorobenzene		1.525	1.476	1.460	1.488	1.506	1.491	1.7
1,2-Dichlorobenzene		1.411	1.346	1.325	1.342	1.312	1.347	2.8
1,2-Dibromo-3-chloropropane		0.126	0.113	0.106	0.112	0.119	0.115	6.6
1,2,4-Trichlorobenzene		0.552	0.654	0.690	0.774	0.870	0.708	17.0
1,1,2-Trichlo-1,2,2-trifluor		0.279	0.221	0.223	0.219	0.214	0.231	11.7
Methyl Acetate		0.218	0.168	0.160	0.160	0.149	0.171	15.8
Cyclohexane		0.558	0.443	0.460	0.444	0.456	0.472	10.3
Methylcyclohexane		0.509	0.410	0.412	0.407	0.391	0.426	11.1
Dibromofluoromethane		0.250	0.257	0.244	0.258	0.248	0.251	2.4
1,2-Dichloroethane-d4		0.061	0.065	0.061	0.064	0.061	0.062	3.2
Toluene-d8		1.332	1.320	1.230	1.312	1.215	1.282	4.3
Bromofluorobenzene		0.527	0.508	0.491	0.516	0.495	0.507	2.9

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK2D	103	100	104	88	0
02	V2DLCS	103	102	100	99	0
03	TB-022603	105	100	101	80	0
04						
05						
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29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER (BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: V2F5200 BFB Injection Date: 03/03/03

Instrument ID: V2 BFB Injection Time: 0928

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.4
75	30.0 - 60.0% of mass 95	39.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	82.1
175	5.0 - 9.0% of mass 174	6.1 (7.4)1
176	95.0 - 101.0% of mass 174	78.9 (96.2)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502D	V2S0303A	V2F5201	03/03/03	1100
02	VBLK2D	V2B0303A	V2F5202	03/03/03	1140
03	V2DLCS	V2L0303A	V2F5204	03/03/03	1242
04	TB-022603	B0327-01A	V2F5209	03/03/03	1506
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
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16					
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19					
20					
21					
22					

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V2 Calibration Date: 03/03/03 Time: 1100

Lab File ID: V2F5201 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.308	0.262	0.01	14.9	20.0	
Chloromethane	0.426	0.364	0.1	14.6	20.0	
Vinyl Chloride	0.323	0.302	0.01	6.5	20.0	
Bromomethane	0.182	0.205	0.01	12.6	20.0	
Chloroethane	0.161	0.166	0.01	3.1	20.0	
Trichlorofluoromethane	0.293	0.327	0.01	11.6	20.0	
1,1-Dichloroethene	0.215	0.226	0.01	5.1	20.0	
Acetone	0.076	0.065	0.01	14.5	20.0	
Carbon Disulfide	0.749	0.764	0.01	2.0	20.0	
Methylene Chloride	0.237	0.246	0.01	3.8	20.0	
trans-1,2-Dichloroethene	0.233	0.248	0.01	6.4	20.0	
Methyl tert-butyl ether	0.557	0.557	0.01	0.0	20.0	
1,1-Dichloroethane	0.485	0.460	0.1	5.2	20.0	
2-Butanone	0.105	0.098	0.01	6.7	20.0	
cis-1,2-Dichloroethene	0.275	0.273	0.01	0.7	20.0	
Chloroform	0.446	0.435	0.01	2.5	20.0	
1,1,1-Trichloroethane	0.364	0.354	0.01	2.7	20.0	
Carbon Tetrachloride	0.304	0.294	0.01	3.3	20.0	
1,2-Dichloroethane	0.309	0.284	0.01	8.1	20.0	
Benzene	0.985	0.973	0.01	1.2	20.0	
Trichloroethene	0.245	0.244	0.01	0.4	20.0	
1,2-Dichloropropane	0.244	0.230	0.01	5.7	20.0	
Bromodichloromethane	0.340	0.319	0.01	6.2	20.0	
cis-1,3-Dichloropropene	0.417	0.381	0.01	8.6	20.0	
4-Methyl-2-pentanone	0.226	0.175	0.01	22.6	20.0	<-
Toluene	0.978	0.966	0.01	1.2	20.0	
trans-1,3-Dichloropropene	0.358	0.331	0.01	7.5	20.0	
1,1,2-Trichloroethane	0.197	0.190	0.01	3.6	20.0	
Tetrachloroethene	0.305	0.321	0.01	5.2	20.0	
2-Hexanone	0.208	0.169	0.01	18.8	20.0	
Dibromochloromethane	0.358	0.338	0.01	5.6	20.0	
1,2-Dibromoethane	0.314	0.304	0.01	3.2	20.0	
Chlorobenzene	0.910	0.905	0.3	0.5	20.0	
Ethylbenzene	0.482	0.471	0.01	2.3	20.0	
m,p-Xylene	0.582	0.582	0.01	0.0	20.0	
o-Xylene	0.578	0.567	0.01	1.9	20.0	
Xylene (Total)	0.580	0.577	0.01	0.5	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V2 Calibration Date: 03/03/03 Time: 1100

Lab File ID: V2F5201 Init. Calib. Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Init. Calib. Times: 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	0.971	0.972	0.01	0.1	20.0	
Bromoform	0.238	0.234	0.1	1.7	20.0	
Isopropylbenzene	1.431	1.404	0.01	1.9	20.0	
1,1,2,2-Tetrachloroethane	0.819	0.704	0.3	14.0	20.0	
1,3,5-Trimethylbenzene	2.596	2.248	0.01	13.4	20.0	
1,2,4-Trimethylbenzene	2.681	2.252	0.01	16.0	20.0	
1,3-Dichlorobenzene	1.489	1.342	0.01	9.9	20.0	
1,4-Dichlorobenzene	1.491	1.346	0.01	9.7	20.0	
1,2-Dichlorobenzene	1.347	1.230	0.01	8.7	20.0	
1,2-Dibromo-3-chloropropane	0.115	0.090	0.01	21.7	20.0	<-
1,2,4-Trichlorobenzene	0.708	0.615	0.01	13.1	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.231	0.235	0.01	1.7	20.0	
Methyl Acetate	0.138	0.160	0.01	15.9	20.0	
Cyclohexane	0.472	0.420	0.01	11.0	20.0	
Methylcyclohexane	0.426	0.401	0.01	5.9	20.0	
Dibromofluoromethane	0.251	0.253	0.01	0.8	20.0	
1,2-Dichloroethane-d4	0.062	0.063	0.01	1.6	20.0	
Toluene-d8	1.282	1.276	0.01	0.5	20.0	
Bromofluorobenzene	0.507	0.502	0.01	1.0	20.0	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: V2B0303A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5202

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: V2B0303A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5202

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) WATER Lab Sample ID: V2B0303A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5202

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V2DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		42	84	48-135
Chloromethane	50		42	84	60-118
Vinyl Chloride	50		46	92	65-113
Bromomethane	50		58	116	73-122
Chloroethane	50		52	104	72-118
Trichlorofluoromethane	50		54	108	68-129
1,1-Dichloroethene	50		53	106	67-121
Acetone	50		38	76	38-161
Carbon Disulfide	50		53	106	53-137
Methylene Chloride	50		54	108	59-132
trans-1,2-Dichloroethen	50		55	110	71-124
Methyl tert-butyl ether	50		50	100	75-123
1,1-Dichloroethane	50		50	100	83-116
2-Butanone	50		46	92	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		51	102	81-122
Carbon Tetrachloride	50		51	102	79-125
1,2-Dichloroethane	50		48	96	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		52	104	77-121
1,2-Dichloropropane	50		49	98	81-116
Bromodichloromethane	50		50	100	90-114
cis-1,3-Dichloropropene	50		47	94	78-119
4-Methyl-2-pentanone	50		37	74	57-138
Toluene	50		52	104	81-121
trans-1,3-Dichloroprope	50		48	96	85-118
1,1,2-Trichloroethane	50		52	104	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V2DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		54	108	73-121
2-Hexanone	50		38	76	53-145
Dibromochloromethane	50		50	100	80-124
1,2-Dibromoethane	50		50	100	80-124
Chlorobenzene	50		52	104	82-118
Ethylbenzene	50		50	100	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		53	106	77-128
Bromoform	50		52	104	77-130
Isopropylbenzene	50		51	102	58-148
1,1,2,2-Tetrachloroetha	50		45	90	76-125
1,3,5-Trimethylbenzene	50		44	88	76-116
1,2,4-Trimethylbenzene	50		43	86	77-117
1,3-Dichlorobenzene	50		47	94	80-116
1,4-Dichlorobenzene	50		46	92	80-114
1,2-Dichlorobenzene	50		48	96	81-116
1,2-Dibromo-3-chloropro	50		39	78	71-126
1,2,4-Trichlorobenzene	50		41	82	67-114
1,1,2-Trichlo-1,2,2-tri	50		51	102	70-130
Methyl Acetate	50		59	118	70-130
Cyclohexane	50		44	88	70-130
Methylcyclohexane	50		47	94	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID (Standard): V2F5201 Date Analyzed: 03/03/03

Instrument ID: V2 Time Analyzed: 1100

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1352201	5.77	882915	9.39	452134	12.35
	UPPER LIMIT	2704402	6.27	1765830	9.89	904268	12.85
	LOWER LIMIT	676101	5.27	441458	8.89	226067	11.85
	EPA SAMPLE NO.						
01	VBLK2D	1279500	5.76	806383	9.39	337434	12.36
02	V2DLCS	1292414	5.76	859069	9.39	447027	12.35
03	TB-022603	1191095	5.76	759009	9.37	297294	12.35
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05							
06							
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22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: V5E4160 BFB Injection Date: 02/27/03

Instrument ID: V5 BFB Injection Time: 1640

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.8
75	30.0 - 60.0% of mass 95	39.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.3
175	5.0 - 9.0% of mass 174	6.1 (7.8)1
176	95.0 - 101.0% of mass 174	73.8 (95.4)1
177	5.0 - 9.0% of mass 176	4.7 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD2005F	V5S0227C	V5E4163	02/27/03	1802
02	VSTD1005F	V5S0227D	V5E4164	02/27/03	1831
03	VSTD0505F	V5S0227A	V5E4165	02/27/03	1901
04	VSTD0205F	V5S0227E	V5E4166	02/27/03	1930
05	VSTD0055F	V5S0227B	V5E4167	02/27/03	1959
06					
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Calibration Time(s): 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E4167 RRF20 =V5E4166
RRF50 =V5E4165 RRF100=V5E4164 RRF200=V5E4163

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.358	0.336	0.379	0.360	0.362	0.359	4.3
*	Chloromethane	0.308	0.313	0.358	0.329	0.317	0.325	6.1*
	Vinyl Chloride	0.274	0.292	0.322	0.304	0.293	0.297	5.9
	Bromomethane	0.274	0.230	0.242	0.209	0.179	0.227	15.7
	Chloroethane	0.133	0.142	0.158	0.146	0.132	0.142	7.5
	Trichlorofluoromethane	0.310	0.349	0.400	0.389	0.381	0.366	10.0
	1,1-Dichloroethene	0.204	0.216	0.248	0.232	0.223	0.225	7.5
	Acetone	0.137	0.089	0.084	0.077	0.073	0.092	28.2
	Carbon Disulfide	0.689	0.684	0.771	0.741	0.698	0.717	5.3
	Methylene Chloride	0.458	0.301	0.313	0.301	0.281	0.331	21.8
	trans-1,2-Dichloroethene	0.276	0.274	0.294	0.284	0.274	0.280	3.1
	Methyl tert-butyl ether	0.726	0.774	0.831	0.790	0.763	0.777	5.0
*	1,1-Dichloroethane	0.470	0.468	0.501	0.492	0.474	0.481	3.0*
	2-Butanone	0.094	0.116	0.124	0.121	0.114	0.114	10.3
	cis-1,2-Dichloroethene	0.297	0.282	0.306	0.292	0.279	0.291	3.8
	Chloroform	0.456	0.455	0.479	0.465	0.457	0.462	2.2
	1,1,1-Trichloroethane	0.365	0.343	0.385	0.372	0.365	0.366	4.1
	Carbon Tetrachloride	0.328	0.319	0.354	0.347	0.345	0.339	4.3
	1,2-Dichloroethane	0.389	0.370	0.405	0.383	0.375	0.384	3.6
	Benzene	0.955	0.911	0.991	0.931	0.878	0.933	4.6
	Trichloroethene	0.258	0.248	0.273	0.266	0.255	0.260	3.7
	1,2-Dichloropropane	0.260	0.246	0.268	0.254	0.236	0.253	4.8
	Bromodichloromethane	0.334	0.332	0.369	0.359	0.352	0.349	4.5
	cis-1,3-Dichloropropene	0.397	0.392	0.432	0.417	0.400	0.408	4.1
	4-Methyl-2-pentanone	0.229	0.247	0.272	0.258	0.235	0.248	7.0
	Toluene	1.090	1.026	1.109	1.045	1.015	1.057	3.9
	trans-1,3-Dichloropropene	0.342	0.372	0.402	0.388	0.382	0.377	5.9
	1,1,2-Trichloroethane	0.233	0.227	0.249	0.236	0.230	0.235	3.6
	Tetrachloroethene	0.291	0.275	0.308	0.294	0.289	0.291	4.0
	2-Hexanone	0.243	0.250	0.274	0.266	0.247	0.256	5.2
	Dibromochloromethane	0.355	0.369	0.411	0.403	0.407	0.389	6.5
	1,2-Dibromoethane	0.371	0.371	0.407	0.400	0.398	0.389	4.4
*	Chlorobenzene	1.091	1.022	1.087	1.049	1.014	1.053	3.4*
	Ethylbenzene	0.565	0.527	0.587	0.562	0.546	0.557	4.0
	Xylene (Total)	0.704	0.659	0.714	0.676	0.644	0.679	4.3
	Styrene	1.162	1.123	1.232	1.189	1.122	1.166	4.0
*	Bromoform	0.262	0.267	0.305	0.302	0.314	0.290	8.3*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Calibration Time(s): 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E4167 RRF20 =V5E4166
RRF50 =V5E4165 RRF100=V5E4164 RRF200=V5E4163

COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Isopropylbenzene	1.793	1.708	1.858	1.799	1.790	1.790	3.0
1,1,2,2-Tetrachloroethane *	0.948	0.889	0.927	0.851	0.830	0.889	5.6*
1,3,5-Trimethylbenzene	3.504	3.170	3.292	3.023	2.781	3.154	8.6
1,2,4-Trimethylbenzene	3.439	3.176	3.345	3.116	2.911	3.197	6.4
1,3-Dichlorobenzene	1.686	1.512	1.651	1.543	1.448	1.568	6.3
1,4-Dichlorobenzene	1.681	1.526	1.646	1.561	1.480	1.579	5.3
1,2-Dichlorobenzene	1.587	1.451	1.539	1.431	1.332	1.468	6.8
1,2-Dibromo-3-chloropropane	0.123	0.129	0.142	0.150	0.155	0.140	9.7
1,2,4-Trichlorobenzene	0.761	0.767	0.850	0.882	0.887	0.829	7.4
1,1,2-Trichlo-1,2,2-trifluor	0.191	0.227	0.225	0.201	0.200	0.209	7.7
Methyl Acetate	0.199	0.214	0.214	0.207	0.193	0.205	4.6
Cyclohexane	0.368	0.387	0.451	0.433	0.428	0.413	8.3
Methylcyclohexane	0.385	0.388	0.420	0.413	0.380	0.397	4.5
Dibromofluoromethane	0.302	0.291	0.309	0.299	0.313	0.303	2.9
1,2-Dichloroethane-d4	0.059	0.065	0.066	0.064	0.065	0.064	4.7
Toluene-d8	1.423	1.339	1.395	1.348	1.420	1.385	2.8
Bromofluorobenzene	0.578	0.576	0.612	0.597	0.609	0.594	2.8

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Level: (low/med) LOW

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5K	99	98	101	87	0
02	V5KLCS	104	106	99	99	0
03	SV1260203	106	116	102	94	0
04	WOD-SS-135	109	117	117	78	0
05	VBLK5L	101	97	103	76	0
06	V5LLCS	102	106	96	94	0
07	V5LLCSD	108	108	98	97	0
08	WOD-SS-134	118	120	111	78	0
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		QC LIMITS
SMC1	= Dibromofluoromethane	(52-130)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(50-126)
SMC3 (TOL)	= Toluene-d8	(25-156)
OTHER (BFB)	= Bromofluorobenzene	(49-146)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: V5E4230 BFB Injection Date: 03/03/03

Instrument ID: V5 BFB Injection Time: 1003

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.2
75	30.0 - 60.0% of mass 95	40.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	78.0
175	5.0 - 9.0% of mass 174	6.1 (7.8)1
176	95.0 - 101.0% of mass 174	75.8 (97.2)1
177	5.0 - 9.0% of mass 176	4.7 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505K	V5S0303A	V5E4232	03/03/03	1056
02	VBLK5K	V5B0303A	V5E4234	03/03/03	1222
03	V5KLCS	V5L0303A	V5E4235	03/03/03	1251
04	SV1260203	B0327-02B	V5E4244	03/03/03	1717
05	WOD-SS-135	B0327-04B	V5E4246	03/03/03	1816
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date: 03/03/03 Time: 1056

Lab File ID: V5E4232 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) N Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.359	0.318	0.01	11.4	20.0
Chloromethane	0.325	0.310	0.1	4.6	20.0
Vinyl Chloride	0.297	0.282	0.01	5.0	20.0
Bromomethane	0.227	0.196	0.01	13.6	20.0
Chloroethane	0.142	0.139	0.01	2.1	20.0
Trichlorofluoromethane	0.366	0.341	0.01	6.8	20.0
1,1-Dichloroethene	0.225	0.219	0.01	2.7	20.0
Acetone	0.092	0.091	0.01	1.1	20.0
Carbon Disulfide	0.717	0.601	0.01	16.2	20.0
Methylene Chloride	0.331	0.274	0.01	17.2	20.0
trans-1,2-Dichloroethene	0.280	0.285	0.01	1.8	20.0
Methyl tert-butyl ether	0.777	0.730	0.01	6.0	20.0
1,1-Dichloroethane	0.481	0.480	0.1	0.2	20.0
2-Butanone	0.114	0.117	0.01	2.6	20.0
cis-1,2-Dichloroethene	0.291	0.288	0.01	1.0	20.0
Chloroform	0.462	0.456	0.01	1.3	20.0
1,1,1-Trichloroethane	0.366	0.396	0.01	8.2	20.0
Carbon Tetrachloride	0.339	0.347	0.01	2.4	20.0
1,2-Dichloroethane	0.384	0.389	0.01	1.3	20.0
Benzene	0.933	0.925	0.01	0.8	20.0
Trichloroethene	0.260	0.255	0.01	1.9	20.0
1,2-Dichloropropane	0.253	0.245	0.01	3.2	20.0
Bromodichloromethane	0.349	0.343	0.01	1.7	20.0
cis-1,3-Dichloropropene	0.408	0.398	0.01	2.4	20.0
4-Methyl-2-pentanone	0.248	0.204	0.01	17.7	20.0
Toluene	1.057	1.027	0.01	2.8	20.0
trans-1,3-Dichloropropene	0.377	0.382	0.01	1.3	20.0
1,1,2-Trichloroethane	0.235	0.231	0.01	1.7	20.0
Tetrachloroethene	0.291	0.303	0.01	4.1	20.0
2-Hexanone	0.256	0.206	0.01	19.5	20.0
Dibromochloromethane	0.389	0.386	0.01	0.8	20.0
1,2-Dibromoethane	0.389	0.387	0.01	0.5	20.0
Chlorobenzene	1.053	1.037	0.3	1.5	20.0
Ethylbenzene	0.557	0.532	0.01	4.5	20.0
m,p-Xylene	0.682	0.667	0.01	2.2	20.0
o-Xylene	0.675	0.666	0.01	1.3	20.0
Xylene (Total)	0.679	0.666	0.01	1.9	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date: 03/03/03 Time: 1056

Lab File ID: V5E4232 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) N Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.166	1.126	0.01	3.4	20.0	
Bromoform	0.290	0.291	0.1	0.3	20.0	
Isopropylbenzene	1.790	1.673	0.01	6.5	20.0	
1,1,2,2-Tetrachloroethane	0.889	0.889	0.3	0.0	20.0	
1,3,5-Trimethylbenzene	3.154	3.066	0.01	2.8	20.0	
1,2,4-Trimethylbenzene	3.197	3.036	0.01	5.0	20.0	
1,3-Dichlorobenzene	1.568	1.477	0.01	5.8	20.0	
1,4-Dichlorobenzene	1.579	1.469	0.01	7.0	20.0	
1,2-Dichlorobenzene	1.468	1.329	0.01	9.5	20.0	
1,2-Dibromo-3-chloropropane	0.140	0.128	0.01	8.6	20.0	
1,2,4-Trichlorobenzene	0.829	0.634	0.01	23.5	20.0	<-
1,1,2-Trichlo-1,2,2-trifluor	0.209	0.230	0.01	10.0	20.0	
Methyl Acetate	0.205	0.213	0.01	3.9	20.0	
Cyclohexane	0.413	0.381	0.01	7.7	20.0	
Methylcyclohexane	0.397	0.378	0.01	4.8	20.0	
Dibromofluoromethane	0.303	0.293	0.01	3.3	20.0	
1,2-Dichloroethane-d4	0.064	0.066	0.01	3.1	20.0	
Toluene-d8	1.385	1.347	0.01	2.7	20.0	
Bromofluorobenzene	0.594	0.576	0.01	3.0	20.0	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0303A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4234

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0303A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4234

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0303A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4234

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-20-3	NAPHTHALENE	14.97	8	NJ
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FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		45	90	58-131
Chloromethane	50		48	96	63-120
Vinyl Chloride	50		50	100	61-134
Bromomethane	50		44	88	10-215
Chloroethane	50		48	96	55-146
Trichlorofluoromethane	50		52	104	63-126
1,1-Dichloroethene	50		54	108	67-127
Acetone	50		54	108	0-154
Carbon Disulfide	50		40	80	63-126
Methylene Chloride	50		51	102	62-128
trans-1,2-Dichloroethen	50		52	104	76-120
Methyl tert-butyl ether	50		50	100	52-130
1,1-Dichloroethane	50		51	102	74-118
2-Butanone	50		58	116	14-154
cis-1,2-Dichloroethene	50		51	102	83-115
Chloroform	50		51	102	77-120
1,1,1-Trichloroethane	50		52	104	72-126
Carbon Tetrachloride	50		52	104	69-135
1,2-Dichloroethane	50		51	102	65-126
Benzene	50		50	100	78-121
Trichloroethene	50		51	102	75-125
1,2-Dichloropropane	50		50	100	78-117
Bromodichloromethane	50		51	102	75-118
cis-1,3-Dichloropropene	50		50	100	78-120
4-Methyl-2-pentanone	50		48	96	45-141
Toluene	50		50	100	80-126
trans-1,3-Dichloroprope	50		51	102	73-123
1,1,2-Trichloroethane	50		50	100	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		55	110	65-134
2-Hexanone	50		48	96	37-136
Dibromochloromethane	50		52	104	76-115
1,2-Dibromoethane	50		52	104	72-117
Chlorobenzene	50		49	98	78-117
Ethylbenzene	50		48	96	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		48	96	83-122
Bromoform	50		55	110	67-126
Isopropylbenzene	50		48	96	80-135
1,1,2,2-Tetrachloroetha	50		54	108	70-117
1,3,5-Trimethylbenzene	50		47	94	72-133
1,2,4-Trimethylbenzene	50		47	94	73-126
1,3-Dichlorobenzene	50		47	94	75-115
1,4-Dichlorobenzene	50		48	96	72-110
1,2-Dichlorobenzene	50		47	94	78-113
1,2-Dibromo-3-chloropro	50		59	118	52-128
1,2,4-Trichlorobenzene	50		42	84	49-126
1,1,2-Trichlo-1,2,2-tri	50		48	96	70-130
Methyl Acetate	50		58	116	70-130
Cyclohexane	50		46	92	70-130
Methylcyclohexane	50		51	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID (Standard): V5E4232 Date Analyzed: 03/03/03

Instrument ID: V5 Time Analyzed: 1056

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	646728	6.26	455270	9.47	226097	12.22
	UPPER LIMIT	1293456	6.76	910540	9.97	452194	12.72
	LOWER LIMIT	323364	5.76	227635	8.97	113049	11.72
	EPA SAMPLE NO.						
01	VBLK5K	1117395	6.26	759759	9.47	282157	12.21
02	V5KLCS	1028707	6.25	724776	9.48	366097	12.21
03	SV1260203	935240	6.25	669458	9.47	277164	12.21
04	WOD-SS-135	908138	6.25	544774	9.47	138411	12.21
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: V5E4260 BFB Injection Date: 03/04/03

Instrument ID: V5 BFB Injection Time: 1331

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.3
75	30.0 - 60.0% of mass 95	40.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.1
175	5.0 - 9.0% of mass 174	5.9 (7.6)1
176	95.0 - 101.0% of mass 174	74.7 (96.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505L	V5S0304A	V5E4261	03/04/03	1348
02	VBLK5L	V5B0304A	V5E4263	03/04/03	1527
03	V5LLCS	V5L0304A	V5E4264	03/04/03	1559
04	V5LLCSD	V5L0304A	V5E4265	03/04/03	1628
05	WOD-SS-134	B0327-03B	V5E4268	03/04/03	1756
06					
07					
08					
09					
10					
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12					
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18					
19					
20					
21					
22					

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date: 03/04/03 Time: 1348

Lab File ID: V5E4261 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.359	0.274	0.01	23.7	20.0	<-
Chloromethane	0.325	0.315	0.1	3.1	20.0	
Vinyl Chloride	0.297	0.298	0.01	0.3	20.0	
Bromomethane	0.227	0.208	0.01	8.4	20.0	
Chloroethane	0.142	0.153	0.01	7.7	20.0	
Trichlorofluoromethane	0.366	0.361	0.01	1.4	20.0	
1,1-Dichloroethene	0.225	0.229	0.01	1.8	20.0	
Acetone	0.092	0.103	0.01	12.0	20.0	
Carbon Disulfide	0.717	0.547	0.01	23.7	20.0	<-
Methylene Chloride	0.331	0.264	0.01	20.2	20.0	<-
trans-1,2-Dichloroethene	0.280	0.289	0.01	3.2	20.0	
Methyl tert-butyl ether	0.777	0.780	0.01	0.4	20.0	
1,1-Dichloroethane	0.481	0.491	0.1	2.1	20.0	
2-Butanone	0.114	0.127	0.01	11.4	20.0	
cis-1,2-Dichloroethene	0.291	0.293	0.01	0.7	20.0	
Chloroform	0.462	0.470	0.01	1.7	20.0	
1,1,1-Trichloroethane	0.366	0.360	0.01	1.6	20.0	
Carbon Tetrachloride	0.339	0.332	0.01	2.1	20.0	
1,2-Dichloroethane	0.384	0.396	0.01	3.1	20.0	
Benzene	0.933	0.921	0.01	1.3	20.0	
Trichloroethene	0.260	0.264	0.01	1.5	20.0	
1,2-Dichloropropane	0.253	0.247	0.01	2.4	20.0	
Bromodichloromethane	0.349	0.356	0.01	2.0	20.0	
cis-1,3-Dichloropropene	0.408	0.420	0.01	2.9	20.0	
4-Methyl-2-pentanone	0.248	0.220	0.01	11.3	20.0	
Toluene	1.057	1.030	0.01	2.6	20.0	
trans-1,3-Dichloropropene	0.377	0.397	0.01	5.3	20.0	
1,1,2-Trichloroethane	0.235	0.234	0.01	0.4	20.0	
Tetrachloroethene	0.291	0.299	0.01	2.7	20.0	
2-Hexanone	0.256	0.222	0.01	13.3	20.0	
Dibromochloromethane	0.389	0.403	0.01	3.6	20.0	
1,2-Dibromoethane	0.389	0.391	0.01	0.5	20.0	
Chlorobenzene	1.053	1.015	0.3	3.6	20.0	
Ethylbenzene	0.557	0.529	0.01	5.0	20.0	
m,p-Xylene	0.682	0.644	0.01	5.6	20.0	
o-Xylene	0.675	0.636	0.01	5.8	20.0	
Xylene (Total)	0.679	0.642	0.01	5.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date: 03/04/03 Time: 1348

Lab File ID: V5E4261 Init. Calib. Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Init. Calib. Times: 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.166	1.066	0.01	8.6	20.0	
Bromoform	0.290	0.302	0.1	4.1	20.0	
Isopropylbenzene	1.790	1.614	0.01	9.8	20.0	
1,1,2,2-Tetrachloroethane	0.889	0.908	0.3	2.1	20.0	
1,3,5-Trimethylbenzene	3.154	2.972	0.01	5.8	20.0	
1,2,4-Trimethylbenzene	3.197	3.037	0.01	5.0	20.0	
1,3-Dichlorobenzene	1.568	1.514	0.01	3.4	20.0	
1,4-Dichlorobenzene	1.579	1.502	0.01	4.9	20.0	
1,2-Dichlorobenzene	1.468	1.354	0.01	7.8	20.0	
1,2-Dibromo-3-chloropropane	0.140	0.141	0.01	0.7	20.0	
1,2,4-Trichlorobenzene	0.829	0.611	0.01	26.3	20.0	<-
1,1,2-Trichlo-1,2,2-trifluor	0.209	0.160	0.01	23.4	20.0	<-
Methyl Acetate	0.205	0.208	0.01	1.5	20.0	
Cyclohexane	0.413	0.334	0.01	19.1	20.0	
Methylcyclohexane	0.397	0.375	0.01	5.5	20.0	
Dibromofluoromethane	0.303	0.314	0.01	3.6	20.0	
1,2-Dichloroethane-d4	0.064	0.066	0.01	3.1	20.0	
Toluene-d8	1.385	1.374	0.01	0.8	20.0	
Bromofluorobenzene	0.594	0.567	0.01	4.5	20.0	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	10	U
95-47-6	o-Xylene	10	U
1330-20-7	Xylene (Total)	10	U
100-42-5	Styrene	10	U
75-25-2	Bromoform	10	U
98-82-8	Isopropylbenzene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-67-8	1,3,5-Trimethylbenzene	10	U
95-63-6	1,2,4-Trimethylbenzene	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
96-12-8	1,2-Dibromo-3-chloropropane	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	10	U
79-20-9	Methyl Acetate	10	U
110-81-7	Cyclohexane	10	U
108-87-2	Methylcyclohexane	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: V5B0304A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4263

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/04/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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26.					
27.					
28.					
29.					
30.					

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		39	78	58-131
Chloromethane	50		46	92	63-120
Vinyl Chloride	50		48	96	61-134
Bromomethane	50		41	82	10-215
Chloroethane	50		47	94	55-146
Trichlorofluoromethane	50		48	96	63-126
1,1-Dichloroethene	50		51	102	67-127
Acetone	50		50	100	0-154
Carbon Disulfide	50		35	70	63-126
Methylene Chloride	50		42	84	62-128
trans-1,2-Dichloroethen	50		49	98	76-120
Methyl tert-butyl ether	50		49	98	52-130
1,1-Dichloroethane	50		50	100	74-118
2-Butanone	50		56	112	14-154
cis-1,2-Dichloroethene	50		49	98	83-115
Chloroform	50		51	102	77-120
1,1,1-Trichloroethane	50		51	102	72-126
Carbon Tetrachloride	50		52	104	69-135
1,2-Dichloroethane	50		53	106	65-126
Benzene	50		50	100	78-121
Trichloroethene	50		50	100	75-125
1,2-Dichloropropane	50		48	96	78-117
Bromodichloromethane	50		51	102	75-118
cis-1,3-Dichloropropene	50		50	100	78-120
4-Methyl-2-pentanone	50		45	90	45-141
Toluene	50		48	96	80-126
trans-1,3-Dichloroprope	50		53	106	73-123
1,1,2-Trichloroethane	50		49	98	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		50	100	65-134
2-Hexanone	50		44	88	37-136
Dibromochloromethane	50		51	102	76-115
1,2-Dibromoethane	50		50	100	72-117
Chlorobenzene	50		47	94	78-117
Ethylbenzene	50		47	94	79-129
Xylene (Total)	150		140	93	83-125
Styrene	50		46	92	83-122
Bromoform	50		52	104	67-126
Isopropylbenzene	50		45	90	80-135
1,1,2,2-Tetrachloroetha	50		48	96	70-117
1,3,5-Trimethylbenzene	50		46	92	72-133
1,2,4-Trimethylbenzene	50		46	92	73-126
1,3-Dichlorobenzene	50		46	92	75-115
1,4-Dichlorobenzene	50		46	92	72-110
1,2-Dichlorobenzene	50		45	90	78-113
1,2-Dibromo-3-chloropro	50		52	104	52-128
1,2,4-Trichlorobenzene	50		40	80	49-126
1,1,2-Trichlo-1,2,2-tri	50		44	88	70-130
Methyl Acetate	50		53	106	70-130
Cyclohexane	50		39	78	70-130
Methylcyclohexane	50		46	92	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5LLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	43	86	10	40	58-131
Chloromethane	50	47	94	2	40	63-120
Vinyl Chloride	50	50	100	4	40	61-134
Bromomethane	50	44	88	7	40	10-215
Chloroethane	50	50	100	6	40	55-146
Trichlorofluoromethane	50	52	104	8	40	63-126
1,1-Dichloroethene	50	53	106	4	40	67-127
Acetone	50	52	104	4	40	0-154
Carbon Disulfide	50	38	76	8	40	63-126
Methylene Chloride	50	49	98	15	40	62-128
trans-1,2-Dichloroethen	50	52	104	6	40	76-120
Methyl tert-butyl ether	50	52	104	6	40	52-130
1,1-Dichloroethane	50	53	106	6	40	74-118
2-Butanone	50	57	114	2	40	14-154
cis-1,2-Dichloroethene	50	52	104	6	40	83-115
Chloroform	50	53	106	4	40	77-120
1,1,1-Trichloroethane	50	53	106	4	40	72-126
Carbon Tetrachloride	50	54	108	4	40	69-135
1,2-Dichloroethane	50	56	112	6	40	65-126
Benzene	50	52	104	4	40	78-121
Trichloroethene	50	54	108	8	40	75-125
1,2-Dichloropropane	50	51	102	6	40	78-117
Bromodichloromethane	50	53	106	4	40	75-118
cis-1,3-Dichloropropene	50	52	104	4	40	78-120
4-Methyl-2-pentanone	50	48	96	6	40	45-141
Toluene	50	50	100	4	40	80-126
trans-1,3-Dichloroprope	50	54	108	2	40	73-123
1,1,2-Trichloroethane	50	52	104	6	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: V5LLCS Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	54	108	8	40	65-134
2-Hexanone	50	47	94	6	40	37-136
Dibromochloromethane	50	54	108	6	40	76-115
1,2-Dibromoethane	50	51	102	2	40	72-117
Chlorobenzene	50	50	100	6	40	78-117
Ethylbenzene	50	48	96	2	40	79-129
Xylene (Total)	150	150	100	7	40	83-125
Styrene	50	49	98	6	40	83-122
Bromoform	50	54	108	4	40	67-126
Isopropylbenzene	50	48	96	6	40	80-135
1,1,2,2-Tetrachloroetha	50	51	102	6	40	70-117
1,3,5-Trimethylbenzene	50	49	98	6	40	72-133
1,2,4-Trimethylbenzene	50	50	100	8	40	73-126
1,3-Dichlorobenzene	50	50	100	8	40	75-115
1,4-Dichlorobenzene	50	50	100	8	40	72-110
1,2-Dichlorobenzene	50	49	98	8	40	78-113
1,2-Dibromo-3-chloropro	50	54	108	4	40	52-128
1,2,4-Trichlorobenzene	50	45	90	12	40	49-126
1,1,2-Trichlo-1,2,2-tri	50	48	96	9	40	70-130
Methyl Acetate	50	54	108	2	40	70-130
Cyclohexane	50	42	84	7	40	70-130
Methylcyclohexane	50	49	98	6	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

0060

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID (Standard): V5E4261 Date Analyzed: 03/04/03

Instrument ID: V5 Time Analyzed: 1348

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) Y

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1479038	6.28	1051477	9.47	500862	12.21
	UPPER LIMIT	2958076	6.78	2102954	9.97	1001724	12.71
	LOWER LIMIT	739519	5.78	525739	8.97	250431	11.71
	EPA SAMPLE NO.						
01	VBLK5L	2346580	6.34	1482930	9.49	517876	12.22
02	V5LLCS	1251805	6.27	913187	9.47	459123	12.22
03	V5LLCSD	1097535	6.27	806343	9.48	396475	12.21
04	WOD-SS-134	828802	6.26	505248*	9.47	137182*	12.21
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG- B0327	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/8/03

Sample WOD-55-135

Acetone = 320 ug/kg

$$\text{Acetone} = \frac{(7273)(50\ \text{ng/mL})(5\ \text{mL})}{(908138)(0.092)(2.5\text{g})(0.27)} = 320.4\ \text{ng/g} = \text{ug/kg}$$

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04B

Sample wt/vol: 2.5 (g/mL) G Lab File ID: V5E4246

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 73 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	74	U
74-87-3	Chloromethane	74	U
75-01-4	Vinyl Chloride	74	U
74-83-9	Bromomethane	74	U
75-00-3	Chloroethane	74	U
75-69-4	Trichlorofluoromethane	74	U
75-35-4	1,1-Dichloroethene	74	U
67-64-1	Acetone	320	
75-15-0	Carbon Disulfide	13	J
75-09-2	Methylene Chloride	25	J
156-60-5	trans-1,2-Dichloroethene	74	U
1634-04-4	Methyl tert-butyl ether	74	U
75-34-3	1,1-Dichloroethane	74	U
78-93-3	2-Butanone	74	U
156-59-2	cis-1,2-Dichloroethene	74	U
67-66-3	Chloroform	74	U
71-55-6	1,1,1-Trichloroethane	74	U
56-23-5	Carbon Tetrachloride	74	U
107-06-2	1,2-Dichloroethane	74	U
71-43-2	Benzene	74	U
79-01-6	Trichloroethene	74	U
78-87-5	1,2-Dichloropropane	74	U
75-27-4	Bromodichloromethane	74	U
10061-01-5	cis-1,3-Dichloropropene	74	U
108-10-1	4-Methyl-2-pentanone	74	U
108-88-3	Toluene	74	U
10061-02-6	trans-1,3-Dichloropropene	74	U
79-00-5	1,1,2-Trichloroethane	74	U
127-18-4	Tetrachloroethene	74	U
591-78-6	2-Hexanone	74	U
124-48-1	Dibromochloromethane	74	U
106-93-4	1,2-Dibromoethane	74	U
108-90-7	Chlorobenzene	74	U
100-41-4	Ethylbenzene	74	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04B

Sample wt/vol: 2.5 (g/mL) G Lab File ID: V5E4246

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: not dec. 73 Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	74	U
95-47-6	o-Xylene	74	U
1330-20-7	Xylene (Total)	74	U
100-42-5	Styrene	74	U
75-25-2	Bromoform	74	U
98-82-8	Isopropylbenzene	74	U
79-34-5	1,1,2,2-Tetrachloroethane	74	U
108-67-8	1,3,5-Trimethylbenzene	74	U
95-63-6	1,2,4-Trimethylbenzene	74	U
541-73-1	1,3-Dichlorobenzene	74	U
106-46-7	1,4-Dichlorobenzene	74	U
95-50-1	1,2-Dichlorobenzene	74	U
96-12-8	1,2-Dibromo-3-chloropropane	74	U
120-82-1	1,2,4-Trichlorobenzene	74	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	74	U
79-20-9	Methyl Acetate	69	J
110-81-7	Cyclohexane	74	U
108-87-2	Methylcyclohexane	74	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030303.B\V5E4246.D
Report Date: 18-Mar-2003 16:43

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030303.B\V5E4246.D
Lab Smp Id: B0327-04B Client Smp ID: WOD-SS-135
Inj Date : 03-MAR-2003 18:16
Operator : KEN Inst ID: v5.i
Smp Info : TETRA,B0327-04B,WOD-SS-135,V5B0303A,,B0327
Misc Info : 27-FEB-03,,,,,,,2.5,,73
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030303.B\v58260H.m
Meth Date : 18-Mar-2003 16:37 mtl Quant Type: ISTD
Cal Date : 27-FEB-2003 19:59 Cal File: V5E4167.D ✓
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/(Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Ws	2.500 ✓	Weight of sample (g)
M	73.000 ✓	% Moisture (not decanted)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	CONCENTRATIONS FINAL (ug/Kg)
	9 Acetone	43	3.416	3.422	(0.546)	72273	43.2492	320
	11 Carbon Disulfide	76	3.613	3.609	(0.578)	23587	1.81196	13 (aM) MS
	112 Methyl Acetate	43	3.751	3.757	(0.600)	34561	9.26532	69 (a) : Split peak
	14 Methylene Chloride	84	3.859	3.865	(0.617)	20254	3.37132	25 (aM) MS
$	30 Dibromofluoromethane	113	5.583	5.579	(0.893)	299727	54.4617	400
$	35 1,2-Dichloroethane-d4	102	5.918	5.924	(0.946)	67941	58.5069	430
*	38 Fluorobenzene	96	6.253	6.259	(1.000)	908138	50.0000	
$	47 Toluene-d8	98	7.888	7.884	(0.833)	884015	58.5794	430
*	57 Chlorobenzene-d5	117	9.473	9.470	(1.000)	544774	50.0000	
$	68 Bromofluorobenzene	95	10.823	10.829	(1.142)	253843	39.1914	290
*	81 1,4-Dichlorobenzene-d4	152	12.212	12.218	(1.000)	138411	50.0000	

SB 3/18/03

SB 3/18/03

0065

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: V5 Calibration Date(s): 02/27/03 02/27/03

Heated Purge: (Y/N) Y Calibration Time(s): 1802 1959

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E4167 RRF20 =V5E4166
RRF50 =V5E4165 RRF100=V5E4164 RRF200=V5E4163

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.358	0.336	0.379	0.360	0.362	0.359	4.3
*	Chloromethane	0.308	0.313	0.358	0.329	0.317	0.325	6.1*
	Vinyl Chloride	0.274	0.292	0.322	0.304	0.293	0.297	5.9
	Bromomethane	0.274	0.230	0.242	0.209	0.179	0.227	15.7
	Chloroethane	0.133	0.142	0.158	0.146	0.132	0.142	7.5
	Trichlorofluoromethane	0.310	0.349	0.400	0.389	0.381	0.366	10.0
	1,1-Dichloroethene	0.204	0.216	0.248	0.232	0.223	0.225	7.5
	Acetone	0.137	0.089	0.084	0.077	0.073	0.092	28.2
	Carbon Disulfide	0.689	0.684	0.771	0.741	0.698	0.717	5.3
	Methylene Chloride	0.458	0.301	0.313	0.301	0.281	0.331	21.8
	trans-1,2-Dichloroethene	0.276	0.274	0.294	0.284	0.274	0.280	3.1
	Methyl tert-butyl ether	0.726	0.774	0.831	0.790	0.763	0.777	5.0
*	1,1-Dichloroethane	0.470	0.468	0.501	0.492	0.474	0.481	3.0*
	2-Butanone	0.094	0.116	0.124	0.121	0.114	0.114	10.3
	cis-1,2-Dichloroethene	0.297	0.282	0.306	0.292	0.279	0.291	3.8
	Chloroform	0.456	0.455	0.479	0.465	0.457	0.462	2.2
	1,1,1-Trichloroethane	0.365	0.343	0.385	0.372	0.365	0.366	4.1
	Carbon Tetrachloride	0.328	0.319	0.354	0.347	0.345	0.339	4.3
	1,2-Dichloroethane	0.389	0.370	0.405	0.383	0.375	0.384	3.6
	Benzene	0.955	0.911	0.991	0.931	0.878	0.933	4.6
	Trichloroethene	0.258	0.248	0.273	0.266	0.255	0.260	3.7
	1,2-Dichloropropane	0.260	0.246	0.268	0.254	0.236	0.253	4.8
	Bromodichloromethane	0.334	0.332	0.369	0.359	0.352	0.349	4.5
	cis-1,3-Dichloropropene	0.397	0.392	0.432	0.417	0.400	0.408	4.1
	4-Methyl-2-pentanone	0.229	0.247	0.272	0.258	0.235	0.248	7.0
	Toluene	1.090	1.026	1.109	1.045	1.015	1.057	3.9
	trans-1,3-Dichloropropene	0.342	0.372	0.402	0.388	0.382	0.377	5.9
	1,1,2-Trichloroethane	0.233	0.227	0.249	0.236	0.230	0.235	3.6
	Tetrachloroethene	0.291	0.275	0.308	0.294	0.289	0.291	4.0
	2-Hexanone	0.243	0.250	0.274	0.266	0.247	0.256	5.2
	Dibromochloromethane	0.355	0.369	0.411	0.403	0.407	0.389	6.5
	1,2-Dibromoethane	0.371	0.371	0.407	0.400	0.398	0.389	4.4
*	Chlorobenzene	1.091	1.022	1.087	1.049	1.014	1.053	3.4*
	Ethylbenzene	0.565	0.527	0.587	0.562	0.546	0.557	4.0
	Xylene (Total)	0.704	0.659	0.714	0.676	0.644	0.679	4.3
	Styrene	1.162	1.123	1.232	1.189	1.122	1.166	4.0
*	Bromoform	0.262	0.267	0.305	0.302	0.314	0.290	8.3*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
07					
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.466		1.417	1.374	1.349			*
bis(2-Chloroethyl)Ether	*	1.190		1.126	1.078	1.065			*
2-Chlorophenol	*	1.294		1.272	1.255	1.284			*
2-Methylphenol	*	1.128		1.089	1.096	1.140			*
2,2'-oxybis(1-Chloropropane)	*	1.404		1.196	1.142	1.163			*
4-Methylphenol	*	1.124		1.103	1.086	1.098			*
N-Nitroso-di-n-propylamine	*	0.895		0.817	0.843	0.817			*
Hexachloroethane	*	0.620		0.601	0.590	0.606			*
Nitrobenzene	*	0.446		0.423	0.405	0.399			*
Isophorone	*	0.560		0.548	0.535	0.528			*
2-Nitrophenol	*	0.190		0.207	0.208	0.211			*
2,4-Dimethylphenol	*	0.368		0.318	0.327	0.347			*
2,4-Dichlorophenol	*	0.289		0.306	0.321	0.335			*
Naphthalene	*	1.093		1.078	1.120	1.150			*
4-Chloroaniline	*	0.396		0.209	0.204	0.213			*
bis(2-Chloroethoxy)methane	*	0.404		0.397	0.387	0.387			*
Hexachlorobutadiene	*	0.200		0.210	0.216	0.223			*
4-Chloro-3-Methylphenol	*	0.313		0.325	0.332	0.336			*
2-Methylnaphthalene	*	0.877		0.890	0.982	1.015			*
Hexachlorocyclopentadiene	*	0.284		0.296	0.321	0.344			*
2,4,6-Trichlorophenol	*	0.347		0.382	0.383	0.399			*
2,4,5-Trichlorophenol	*		0.375	0.405	0.402	0.423			*
2-Chloronaphthalene	*	1.132		1.161	1.207	1.275			*
2-Nitroaniline	*		0.546	0.539	0.519	0.512			*
Dimethylphthalate	*	1.365		1.371	1.369	1.403			*
Acenaphthylene	*	1.833		1.795	1.781	1.808			*
2,6-Dinitrotoluene	*	0.296		0.307	0.307	0.310			*
3-Nitroaniline	*		0.056	0.108	0.214	0.251			*
Acenaphthene	*	1.158		1.162	1.202	1.255			*
2,4-Dinitrophenol	*		0.123	0.154	0.172	0.183			*
4-Nitrophenol	*		0.239	0.279	0.280	0.271			*
Dibenzofuran	*	2.006		2.129	2.294	2.281			*
2,4-Dinitrotoluene	*	0.378		0.412	0.443	0.448			*
Diethylphthalate	*	1.310		1.335	1.378	1.399			*
4-Chlorophenyl-phenylether	*	0.612		0.666	0.725	0.679			*
Fluorene	*	1.216		1.326	1.457	1.419			*
4-Nitroaniline	*		0.175	0.171	0.164	0.130			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.133	0.150	0.165	0.169			*
N-Nitrosodiphenylamine (1)	*	0.516		0.395	0.308	0.343			*
4-Bromophenyl-phenylether	*	0.226		0.234	0.244	0.248			*
Hexachlorobenzene	*	0.220		0.228	0.236	0.242			*
Pentachlorophenol	*		0.109	0.136	0.146	0.156			*
Phenanthrene	*	1.087		1.124	1.205	1.236			*
Anthracene	*	1.096		1.089	1.181	1.202			*
Carbazole	*	0.871		0.422	0.467	0.486			*
Di-n-butylphthalate	*	1.281		1.340	1.389	1.407			*
Fluoranthene	*	1.016		1.111	1.174	1.185			*
Pyrene	*	1.200		1.176	1.222	1.208			*
Butylbenzylphthalate	*	0.592		0.607	0.618	0.619			*
3,3'-Dichlorobenzidine		0.118		0.162	0.157	0.160			
Benzo(a)anthracene	*	1.086		1.066	1.098	1.087			*
Chrysene	*	1.024		1.069	1.098	1.016			*
bis(2-Ethylhexyl)phthalate	*	0.814		0.911	0.950	0.890			*
Di-n-octylphthalate	*	1.921		2.211	2.574	2.649			*
Benzo(b)fluoranthene	*	1.440		1.544	1.703	1.785			*
Benzo(k)fluoranthene	*	1.520		1.618	1.760	1.766			*
Benzo(a)pyrene	*	1.345		1.356	1.452	1.504			*
Indeno(1,2,3-cd)pyrene	*	1.445		1.560	1.451	1.547			*
Dibenzo(a,h)anthracene	*	1.202		1.320	1.255	1.358			*
Benzo(g,h,i)perylene	*	1.185		1.300	1.160	1.241			*
1,1'-Biphenyl	*	1.583		1.596	1.654	1.701			*
Acetophenone	*	1.830		1.743	1.796	1.820			*
Atrazine	*	0.206		0.161	0.178	0.171			*
Benzaldehyde	*	0.643		0.653	0.526	0.352			*
Caprolactum	*	0.098		0.100	0.099	0.099			*
Nitrobenzene-d5		0.456		0.443	0.436	0.430			*
2-Fluorobiphenyl	*	1.509		1.528	1.554	1.607			*
Terphenyl-d14	*	0.894		0.899	0.923	0.907			*
Phenol-d5	*	1.413		1.332	1.293	1.275			*
2-Fluorophenol	*	1.054		1.158	1.121	1.115			*
2,4,6-Tribromophenol	*	0.102		0.112	0.117	0.120			*
2-Chlorophenol-d4	*	1.301		1.293	1.266	1.268			*
1,2-Dichlorobenzene-d4	*	0.916		0.887	0.903	0.933			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.390					1.399	3.2*
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*
2-Chlorophenol	* 1.371					1.295	3.5*
2-Methylphenol	* 1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*
4-Methylphenol	* 1.129					1.108	1.6*
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*
Hexachloroethane	* 0.627					0.609	2.4*
Nitrobenzene	* 0.406					0.416	4.6*
Isophorone	* 0.535					0.541	2.3*
2-Nitrophenol	* 0.219					0.207	5.1*
2,4-Dimethylphenol	* 0.383					0.349	7.8*
2,4-Dichlorophenol	* 0.356					0.321	8.1*
Naphthalene	* 1.196					1.127	4.2*
4-Chloroaniline	* 0.251					0.255	31.9*
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*
Hexachlorobutadiene	* 0.220					0.214	4.2*
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*
2-Methylnaphthalene	* 1.032					0.959	7.5*
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*
2-Chloronaphthalene	* 1.346					1.224	7.1*
2-Nitroaniline	* 0.518					0.527	2.8*
Dimethylphthalate	* 1.415					1.385	1.7*
Acenaphthylene	* 1.879					1.819	2.1*
2,6-Dinitrotoluene	* 0.318					0.308	2.6*
3-Nitroaniline	* 0.274					0.181	52.2*
Acenaphthene	* 1.311					1.218	5.3*
2,4-Dinitrophenol	* 0.201					0.167	17.9*
4-Nitrophenol	* 0.265					0.267	6.2*
Dibenzofuran	* 2.250					2.192	5.6*
2,4-Dinitrotoluene	* 0.456					0.427	7.5*
Diethylphthalate	* 1.413					1.367	3.2*
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*
Fluorene	* 1.325					1.349	7.0*
4-Nitroaniline	* 0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177					0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407					0.394	20.1*
4-Bromophenyl-phenylether	* 0.262					0.243	5.7*
Hexachlorobenzene	* 0.255					0.236	5.7*
Pentachlorophenol	* 0.166					0.143	15.2*
Phenanthrene	* 1.296					1.190	7.1*
Anthracene	* 1.261					1.166	6.3*
Carbazole	* 0.612					0.572	31.8*
Di-n-butylphthalate	* 1.451					1.374	4.8*
Fluoranthene	* 1.230					1.143	7.2*
Pyrene	* 1.223					1.206	1.6*
Butylbenzylphthalate	* 0.629					0.613	2.3*
3,3'-Dichlorobenzidine	0.136					0.147	12.9
Benzo(a)anthracene	* 1.092					1.086	1.1*
Chrysene	* 0.963					1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824					0.878	6.6*
Di-n-octylphthalate	* 2.687					2.408	13.8*
Benzo(b)fluoranthene	* 1.959					1.686	12.1*
Benzo(k)fluoranthene	* 1.683					1.669	6.2*
Benzo(a)pyrene	* 1.582					1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678					1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479					1.323	8.0*
Benzo(g,h,i)perylene	* 1.338					1.245	6.0*
1,1'-Biphenyl	* 1.686					1.644	3.2*
Acetophenone	* 1.856					1.809	2.4*
Atrazine	* 0.173					0.178	9.6*
Benzaldehyde	* 0.213					0.477	40.0*
Caprolactum	* 0.097					0.099	1.1*
Nitrobenzene-d5	0.436					0.440	2.2*
2-Fluorobiphenyl	* 1.695					1.579	4.7*
Terphenyl-d14	* 0.882					0.901	1.7*
Phenol-d5	* 1.296					1.322	4.2*
2-Fluorophenol	* 1.164					1.122	3.9*
2,4,6-Tribromophenol	* 0.128					0.116	8.5*
2-Chlorophenol-d4	* 1.326					1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981					0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Level: (low/med) LOW

	EPA SAMPLE NO.	S1 (NBZ)#	S2 (FBP)#	S3 (TPH)#	S4 (PHL)#	S5 (2FP)#	S6 (TBP)#	S7 (2CP)#	S8 (DCB)#	TOT OUT
01	SV1260203	52	54	70	50	58	58	54	54	0
02	WOD-SS-134	51	55	71	49	54	59	54	47	0
03	WOD-SS-135	54	57	70	57	61	63	57	54	0
04	SBLK3S	81	77	107	92	93	85	88	76	0
05	S3SLCS	80	74	98	91	92	92	89	75	0
06										
07										
08										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(46-102)	
S2 (FBP)	= 2-Fluorobiphenyl	(52-107)	
S3 (TPH)	= Terphenyl-d14	(41-132)	
S4 (PHL)	= Phenol-d5	(45- 99)	
S5 (2FP)	= 2-Fluorophenol	(44- 95)	
S6 (TBP)	= 2,4,6-Tribromophenol	(50-111)	
S7 (2CP)	= 2-Chlorophenol-d4	(45- 97)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(44-100)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: S3C2342 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 0011

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.3
68	Less than 2.0% of mass 69	0.7 (1.4)1
69	Mass 69 relative abundance	50.4
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.6
197	Less than 1.0% of mass 198	0.7
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.8
365	Greater than 1.0% of mass 198	5.42
441	Present, but less than mass 443	13.7
442	40.0 - 99.9% of mass 198	93.3
443	17.0 - 23.0% of mass 442	18.0 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Q	SS0315A	S3C2343	03/15/03	0031
02	SV1260203	B0327-02A	S3C2357	03/15/03	0959
03	WOD-SS-134	B0327-03A	S3C2358	03/15/03	1040
04	WOD-SS-135	B0327-04A	S3C2359	03/15/03	1122
05					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.517	0.050	8.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.225	0.050	10.2	100
2-Chlorophenol	1.295	1.304	0.050	0.7	100
2-Methylphenol	1.130	1.099	0.050	-2.7	100
2,2'-oxybis(1-Chloropropane)	1.228	1.446	0.050	17.8	100
4-Methylphenol	1.108	1.097	0.050	-1.0	100
N-Nitroso-di-n-propylamine	0.820	0.870	0.050	6.1	100
Hexachloroethane	0.609	0.622	0.050	2.1	100
Nitrobenzene	0.416	0.470	0.050	13.0	100
Isophorone	0.541	0.572	0.050	5.7	100
2-Nitrophenol	0.207	0.210	0.050	1.4	20.0
2,4-Dimethylphenol	0.349	0.290	0.050	-16.9	100
2,4-Dichlorophenol	0.321	0.301	0.050	-6.2	20.0
Naphthalene	1.127	1.074	0.050	-4.7	100
4-Chloroaniline	0.255	0.138	0.050	-45.9	100
bis(2-Chloroethoxy)methane	0.396	0.434	0.050	9.6	100
Hexachlorobutadiene	0.214	0.210	0.050	-1.9	20.0
4-Chloro-3-Methylphenol	0.331	0.325	0.050	-1.8	20.0
2-Methylnaphthalene	0.959	0.817	0.050	-14.8	100
Hexachlorocyclopentadiene	0.323	0.241	0.050	-25.4	100
2,4,6-Trichlorophenol	0.387	0.384	0.050	-0.8	100
2,4,5-Trichlorophenol	0.412	0.390	0.050	-5.3	100
2-Chloronaphthalene	1.224	1.162	0.050	-5.1	100
2-Nitroaniline	0.527	0.614	0.050	16.5	100
Dimethylphthalate	1.385	1.393	0.050	0.6	100
Acenaphthylene	1.819	1.788	0.050	-1.7	100
2,6-Dinitrotoluene	0.308	0.323	0.050	4.9	100
3-Nitroaniline	0.181	0.206	0.050	13.8	100
Acenaphthene	1.218	1.146	0.050	-5.9	20.0
2,4-Dinitrophenol	0.167	0.129	0.050	-22.8	100
4-Nitrophenol	0.267	0.242	0.050	-9.4	100
Dibenzofuran	2.192	2.012	0.050	-8.2	100
2,4-Dinitrotoluene	0.427	0.396	0.050	-7.2	100
Diethylphthalate	1.367	1.319	0.050	-3.5	100
4-Chlorophenyl-phenylether	0.656	0.621	0.050	-5.3	100
Fluorene	1.349	1.223	0.050	-9.3	100
4-Nitroaniline	0.150	0.174	0.050	16.0	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.142	0.050	-10.7	100
N-Nitrosodiphenylamine(1)	0.394	0.424	0.050	7.6	20.0
4-Bromophenyl-phenylether	0.243	0.227	0.050	-6.6	100
Hexachlorobenzene	0.236	0.224	0.050	-5.1	100
Pentachlorophenol	0.143	0.115	0.050	-19.6	20.0
Phenanthrene	1.190	1.104	0.050	-7.2	100
Anthracene	1.166	1.026	0.050	-12.0	100
Carbazole	0.572	0.654	0.050	14.3	100
Di-n-butylphthalate	1.374	1.326	0.050	-3.5	100
Fluoranthene	1.143	1.052	0.050	-8.0	20.0
Pyrene	1.206	1.229	0.050	1.9	100
Butylbenzylphthalate	0.613	0.629	0.050	2.6	100
3,3'-Dichlorobenzidine	0.147	0.119	0.050	-19.0	100
Benzo(a)anthracene	1.086	1.057	0.050	-2.7	100
Chrysene	1.034	1.026	0.050	-0.8	100
bis(2-Ethylhexyl)phthalate	0.878	0.891	0.050	1.5	100
Di-n-octylphthalate	2.408	2.294	0.050	-4.7	20.0
Benzo(b)fluoranthene	1.686	1.556	0.050	-7.7	100
Benzo(k)fluoranthene	1.669	1.640	0.050	-1.7	100
Benzo(a)pyrene	1.448	1.328	0.050	-8.3	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.597	0.050	4.0	100
Dibenzo(a,h)anthracene	1.323	1.346	0.050	1.7	100
Benzo(g,h,i)perylene	1.245	1.354	0.050	8.8	100
1,1'-Biphenyl	1.644	1.598	0.050	-2.8	100
Acetophenone	1.809	1.734	0.050	-4.1	100
Atrazine	0.178	0.118	0.050	-33.7	100
Benzaldehyde	0.477	0.806	0.050	69.0	100
Caprolactum	0.099	0.110	0.050	11.1	100
Nitrobenzene-d5	0.440	0.502	0.050	14.1	100
2-Fluorobiphenyl	1.579	1.541	0.050	-2.4	100
Terphenyl-d14	0.901	0.888	0.050	-1.4	100
Phenol-d5	1.322	1.428	0.050	8.0	100
2-Fluorophenol	1.122	1.196	0.050	6.6	100
2,4,6-Tribromophenol	0.116	0.109	0.050	-6.0	100
2-Chlorophenol-d4	1.291	1.313	0.050	1.7	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 0031

Lab File ID: S3C2343 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.892	0.050	-3.5	100

All other compounds must meet a minimum RRF of 0.010.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID (Standard): S3C2343 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 0031

		IS1(DCB) AREA	#	RT	#	IS2(NPT) AREA	#	RT	#	IS3(ANT) AREA	#	RT	#
	12 HOUR STD	203377		7.83		628802		10.27		303104		13.81	
	UPPER LIMIT	406754		8.33		1257604		10.77		606208		14.31	
	LOWER LIMIT	101689		7.33		314401		9.77		151552		13.31	
	EPA SAMPLE NO.												
01	SV1260203	190453		7.84		657808		10.27		397446		13.81	
02	WOD-SS-134	197433		7.84		677545		10.27		402189		13.81	
03	WOD-SS-135	186890		7.84		681170		10.27		394652		13.81	
04													
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID (Standard): S3C2343 Date Analyzed: 03/15/03

Instrument ID: S3 Time Analyzed: 0031

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	419800	16.84	366977	22.25	224020	25.05
	UPPER LIMIT	839600	17.34	733954	22.75	448040	25.55
	LOWER LIMIT	209900	16.34	183489	21.75	112010	24.55
	EPA SAMPLE NO.						
01	SV1260203	597539	16.85	457672	22.27	260587	25.08
02	WOD-SS-134	555951	16.85	387112	22.27	223854	25.08
03	WOD-SS-135	558729	16.86	422434	22.28	231082	25.09
04							
05							
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18							
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20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab File ID: S3C2361 DFTPP Injection Date: 03/15/03

Instrument ID: S3 DFTPP Injection Time: 1611

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.7 (1.5)1
69	Mass 69 relative abundance	47.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	26.2
365	Greater than 1.0% of mass 198	5.04
441	Present, but less than mass 443	14.5
442	40.0 - 99.9% of mass 198	97.9
443	17.0 - 23.0% of mass 442	20.0 (20.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503R	SS0315B	S3C2362	03/15/03	1632
02	SBLK3S	MB-5840	S3C2366	03/15/03	1926
03	S3SLCS	LCS-5840	S3C2367	03/15/03	2008
04					
05					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.489	0.050	6.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.241	0.050	11.6	100
2-Chlorophenol	1.295	1.314	0.050	1.5	100
2-Methylphenol	1.130	1.136	0.050	0.5	100
2,2'-oxybis(1-Chloropropane)	1.228	1.600	0.050	30.3	100
4-Methylphenol	1.108	1.196	0.050	7.9	100
N-Nitroso-di-n-propylamine	0.820	0.880	0.050	7.3	100
Hexachloroethane	0.609	0.575	0.050	-5.6	100
Nitrobenzene	0.416	0.415	0.050	-0.2	100
Isophorone	0.541	0.560	0.050	3.5	100
2-Nitrophenol	0.207	0.203	0.050	-1.9	20.0
2,4-Dimethylphenol	0.349	0.287	0.050	-17.8	100
2,4-Dichlorophenol	0.321	0.300	0.050	-6.5	20.0
Naphthalene	1.127	1.076	0.050	-4.5	100
4-Chloroaniline	0.255	0.141	0.050	-44.7	100
bis(2-Chloroethoxy)methane	0.396	0.404	0.050	2.0	100
Hexachlorobutadiene	0.214	0.176	0.050	-17.8	20.0
4-Chloro-3-Methylphenol	0.331	0.343	0.050	3.6	20.0
2-Methylnaphthalene	0.959	0.924	0.050	-3.6	100
Hexachlorocyclopentadiene	0.323	0.161	0.050	-50.2	100
2,4,6-Trichlorophenol	0.387	0.360	0.050	-7.0	100
2,4,5-Trichlorophenol	0.412	0.376	0.050	-8.7	100
2-Chloronaphthalene	1.224	1.127	0.050	-7.9	100
2-Nitroaniline	0.527	0.550	0.050	4.4	100
Dimethylphthalate	1.385	1.392	0.050	0.5	100
Acenaphthylene	1.819	1.844	0.050	1.4	100
2,6-Dinitrotoluene	0.308	0.308	0.050	0.0	100
3-Nitroaniline	0.181	0.293	0.050	61.9	100
Acenaphthene	1.218	1.188	0.050	-2.5	20.0
2,4-Dinitrophenol	0.167	0.136	0.050	-18.6	100
4-Nitrophenol	0.267	0.237	0.050	-11.2	100
Dibenzofuran	2.192	2.056	0.050	-6.2	100
2,4-Dinitrotoluene	0.427	0.415	0.050	-2.8	100
Diethylphthalate	1.367	1.418	0.050	3.7	100
4-Chlorophenyl-phenylether	0.656	0.602	0.050	-8.2	100
Fluorene	1.349	1.295	0.050	-4.0	100
4-Nitroaniline	0.150	0.236	0.050	57.3	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.139	0.050	-12.6	100
N-Nitrosodiphenylamine(1)	0.394	0.438	0.050	11.2	20.0
4-Bromophenyl-phenylether	0.243	0.220	0.050	-9.5	100
Hexachlorobenzene	0.236	0.234	0.050	-0.8	100
Pentachlorophenol	0.143	0.135	0.050	-5.6	20.0
Phenanthrene	1.190	1.111	0.050	-6.6	100
Anthracene	1.166	1.062	0.050	-8.9	100
Carbazole	0.572	0.843	0.050	47.4	100
Di-n-butylphthalate	1.374	1.432	0.050	4.2	100
Fluoranthene	1.143	1.085	0.050	-5.1	20.0
Pyrene	1.206	1.230	0.050	2.0	100
Butylbenzylphthalate	0.613	0.689	0.050	12.4	100
3,3'-Dichlorobenzidine	0.147	0.220	0.050	49.6	100
Benzo(a)anthracene	1.086	1.066	0.050	-1.8	100
Chrysene	1.034	1.010	0.050	-2.3	100
bis(2-Ethylhexyl)phthalate	0.878	1.012	0.050	15.3	100
Di-n-octylphthalate	2.408	2.799	0.050	16.2	20.0
Benzo(b)fluoranthene	1.686	1.630	0.050	-3.3	100
Benzo(k)fluoranthene	1.669	1.665	0.050	-0.2	100
Benzo(a)pyrene	1.448	1.343	0.050	-7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.535	0.050	-0.1	100
Dibenzo(a,h)anthracene	1.323	1.303	0.050	-1.5	100
Benzo(g,h,i)perylene	1.245	1.247	0.050	0.2	100
1,1'-Biphenyl	1.644	1.522	0.050	-7.4	100
Acetophenone	1.809	1.862	0.050	2.9	100
Atrazine	0.178	0.123	0.050	-30.9	100
Benzaldehyde	0.477	0.903	0.050	89.3	100
Caprolactum	0.099	0.115	0.050	16.2	100
Nitrobenzene-d5	0.440	0.435	0.050	-1.1	100
2-Fluorobiphenyl	1.579	1.415	0.050	-10.4	100
Terphenyl-d14	0.901	0.935	0.050	3.8	100
Phenol-d5	1.322	1.403	0.050	6.1	100
2-Fluorophenol	1.122	1.182	0.050	5.3	100
2,4,6-Tribromophenol	0.116	0.119	0.050	2.6	100
2-Chlorophenol-d4	1.291	1.331	0.050	3.1	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: S3 Calibration Date: 03/15/03 Time: 1632

Lab File ID: S3C2362 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
1,2-Dichlorobenzene-d4	0.924	0.889	0.050	-3.8	100

All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	330	U
111-44-4	bis(2-Chloroethyl)Ether	330	U
95-57-8	2-Chlorophenol	330	U
95-48-7	2-Methylphenol	330	U
108-60-1	2,2'-oxybis(1-Chloropropane)	330	U
106-44-5	4-Methylphenol	330	U
621-64-7	N-Nitroso-di-n-propylamine	330	U
67-72-1	Hexachloroethane	330	U
98-95-3	Nitrobenzene	330	U
78-59-1	Isophorone	330	U
88-75-5	2-Nitrophenol	330	U
105-67-9	2,4-Dimethylphenol	330	U
120-83-2	2,4-Dichlorophenol	330	U
91-20-3	Naphthalene	330	U
106-47-8	4-Chloroaniline	330	U
111-91-1	bis(2-Chloroethoxy)methane	330	U
87-68-3	Hexachlorobutadiene	330	U
59-50-7	4-Chloro-3-Methylphenol	330	U
91-57-6	2-Methylnaphthalene	330	U
77-47-4	Hexachlorocyclopentadiene	330	U
88-06-2	2,4,6-Trichlorophenol	330	U
95-95-4	2,4,5-Trichlorophenol	830	U
91-58-7	2-Chloronaphthalene	330	U
88-74-4	2-Nitroaniline	830	U
131-11-3	Dimethylphthalate	330	U
208-96-8	Acenaphthylene	330	U
606-20-2	2,6-Dinitrotoluene	330	U
99-09-2	3-Nitroaniline	830	U
83-32-9	Acenaphthene	330	U
51-28-5	2,4-Dinitrophenol	830	U
100-02-7	4-Nitrophenol	830	U
132-64-9	Dibenzofuran	330	U
121-14-2	2,4-Dinitrotoluene	330	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: 0 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	330	U
7005-72-3	4-Chlorophenyl-phenylether	330	U
86-73-7	Fluorene	330	U
100-01-6	4-Nitroaniline	830	U
534-52-1	4,6-Dinitro-2-methylphenol	830	U
86-30-6	N-Nitrosodiphenylamine (1)	330	U
101-55-3	4-Bromophenyl-phenylether	330	U
118-74-1	Hexachlorobenzene	330	U
87-86-5	Pentachlorophenol	830	U
85-01-8	Phenanthrene	330	U
120-12-7	Anthracene	330	U
86-74-8	Carbazole	330	U
84-74-2	Di-n-butylphthalate	330	U
206-44-0	Fluoranthene	330	U
129-00-0	Pyrene	330	U
85-68-7	Butylbenzylphthalate	330	U
91-94-1	3,3'-Dichlorobenzidine	330	U
56-55-3	Benzo(a)anthracene	330	U
218-01-9	Chrysene	330	U
117-81-7	bis(2-Ethylhexyl)phthalate	330	U
117-84-0	Di-n-octylphthalate	330	U
205-99-2	Benzo(b)fluoranthene	330	U
207-08-9	Benzo(k)fluoranthene	330	U
50-32-8	Benzo(a)pyrene	330	U
193-39-5	Indeno(1,2,3-cd)pyrene	330	U
53-70-3	Dibenzo(a,h)anthracene	330	U
191-24-2	Benzo(g,h,i)perylene	330	U
92-52-4	1,1'-Biphenyl	330	U
98-86-2	Acetophenone	330	U
1912-24-9	Atrazine	330	U
100-52-7	Benzaldehyde	330	U
105-60-2	Caprolactum	330	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK3S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: MB-5840

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2366

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Phenol	830		800	96	45-109
bis(2-Chloroethyl)Ether	830		750	90	43-104
2-Chlorophenol	830		710	86	43-107
2-Methylphenol	830		700	84	45-108
2,2'-oxybis(1-Chloropro	830		960	116*	41-105
4-Methylphenol	830		760	92	48-109
N-Nitroso-di-n-prop.(1)	830		800	96	44-111
Hexachloroethane	830		630	76	40-102
Nitrobenzene	830		700	84	44-108
Isophorone	830		920	111	42-113
2-Nitrophenol	830		650	78	42-111
2,4-Dimethylphenol	830		460	55	37-107
2,4-Dichlorophenol	830		620	75	49-110
Naphthalene	830		650	78	44-112
4-Chloroaniline	830		500	60	4-102
bis(2-Chloroethoxy)meth	830		730	88	46-108
Hexachlorobutadiene	830		550	66	41-108
4-Chloro-3-Methylphenol	830		720	87	56-117
2-Methylnaphthalene	830		500	60	46-110
Hexachlorocyclopentadie	830		330	40	10-118
2,4,6-Trichlorophenol	830		630	76	53-115
2,4,5-Trichlorophenol	830		630	76	59-113
2-Chloronaphthalene	830		640	77	52-112
2-Nitroaniline	830		580	70	63-117
Dimethylphthalate	830		710	86	62-117
Acenaphthylene	830		700	84	58-112
2,6-Dinitrotoluene	830		720	87	60-118
3-Nitroaniline	830		900	108	30-117

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	830		680	82	53-116
2,4-Dinitrophenol	830		420	51	15-136
4-Nitrophenol	830		590	71	50-129
Dibenzofuran	830		510	61	61-112
2,4-Dinitrotoluene	830		700	84	59-123
Diethylphthalate	830		760	92	61-120
4-Chlorophenyl-phenylet	830		650	78	59-116
Fluorene	830		670	81	63-115
4-Nitroaniline	830		960	116	35-124
4,6-Dinitro-2-methylphe	830		530	64	33-130
N-Nitrosodiphenylamine	830		1300	157*	50-150
4-Bromophenyl-phenyleth	830		650	78	66-110
Hexachlorobenzene	830		710	86	67-112
Pentachlorophenol	830		580	70	19-130
Phenanthrene	830		680	82	70-115
Anthracene	830		680	82	63-117
Carbazole	830		1100	132*	62-122
Di-n-butylphthalate	830		790	95	70-120
Fluoranthene	830		670	81	64-121
Pyrene	830		810	98	66-120
Butylbenzylphthalate	830		870	105	63-123
3,3'-Dichlorobenzidine	830		940	113	8-124
Benzo(a)anthracene	830		730	88	50-129
Chrysene	830		710	86	41-150
bis(2-Ethylhexyl)phthal	830		860	104	64-115
Di-n-octylphthalate	830		830	100	69-137
Benzo(b)fluoranthene	830		700	84	61-129
Benzo(k)fluoranthene	830		740	89	62-130

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
SOIL SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: S3SLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Benzo(a)pyrene	830		690	83	66-119
Indeno(1,2,3-cd)pyrene	830		740	89	56-128
Dibenzo(a,h)anthracene	830		720	87	58-128
Benzo(g,h,i)perylene	830		720	87	32-149

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 60 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740 SOG- B0327	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/8/03

Sample WOO-SS-134

Benzaldehyde = 180 ug/kg

$$\text{Benzaldehyde} = \frac{(6920)(40\,ng)(1000\,\mu L)}{(197433)(0.477)(1\,\mu L)(30\,g)(0.53)} = 184\,ng/g = ug/kg$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2358

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	620	U
111-44-4	bis(2-Chloroethyl)Ether	620	U
95-57-8	2-Chlorophenol	620	U
95-48-7	2-Methylphenol	620	U
108-60-1	2,2'-oxybis(1-Chloropropane)	620	U
106-44-5	4-Methylphenol	620	U
621-64-7	N-Nitroso-di-n-propylamine	620	U
67-72-1	Hexachloroethane	620	U
98-95-3	Nitrobenzene	620	U
78-59-1	Isophorone	620	U
88-75-5	2-Nitrophenol	620	U
105-67-9	2,4-Dimethylphenol	620	U
120-83-2	2,4-Dichlorophenol	620	U
91-20-3	Naphthalene	620	U
106-47-8	4-Chloroaniline	620	U
111-91-1	bis(2-Chloroethoxy)methane	620	U
87-68-3	Hexachlorobutadiene	620	U
59-50-7	4-Chloro-3-Methylphenol	620	U
91-57-6	2-Methylnaphthalene	620	U
77-47-4	Hexachlorocyclopentadiene	620	U
88-06-2	2,4,6-Trichlorophenol	620	U
95-95-4	2,4,5-Trichlorophenol	1600	U
91-58-7	2-Chloronaphthalene	620	U
88-74-4	2-Nitroaniline	1600	U
131-11-3	Dimethylphthalate	620	U
208-96-8	Acenaphthylene	620	U
606-20-2	2,6-Dinitrotoluene	620	U
99-09-2	3-Nitroaniline	1600	U
83-32-9	Acenaphthene	620	U
51-28-5	2,4-Dinitrophenol	1600	U
100-02-7	4-Nitrophenol	1600	U
132-64-9	Dibenzofuran	620	U
121-14-2	2,4-Dinitrotoluene	620	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-03A

Sample wt/vol: 30.0 (g/mL) G Lab File ID: S3C2358

Level: (low/med) LOW Date Received: 02/27/03

% Moisture: 47 decanted: (Y/N) N Date Extracted: 02/28/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	620	U
7005-72-3	4-Chlorophenyl-phenylether	620	U
86-73-7	Fluorene	620	U
100-01-6	4-Nitroaniline	1600	U
534-52-1	4,6-Dinitro-2-methylphenol	1600	U
86-30-6	N-Nitrosodiphenylamine (1)	620	U
101-55-3	4-Bromophenyl-phenylether	620	U
118-74-1	Hexachlorobenzene	620	U
87-86-5	Pentachlorophenol	1600	U
85-01-8	Phenanthrene	620	U
120-12-7	Anthracene	620	U
86-74-8	Carbazole	620	U
84-74-2	Di-n-butylphthalate	620	U
206-44-0	Fluoranthene	620	U
129-00-0	Pyrene	620	U
85-68-7	Butylbenzylphthalate	620	U
91-94-1	3,3'-Dichlorobenzidine	620	U
56-55-3	Benzo(a)anthracene	620	U
218-01-9	Chrysene	620	U
117-81-7	bis(2-Ethylhexyl)phthalate	70	J
117-84-0	Di-n-octylphthalate	620	U
205-99-2	Benzo(b)fluoranthene	620	U
207-08-9	Benzo(k)fluoranthene	620	U
50-32-8	Benzo(a)pyrene	620	U
193-39-5	Indeno(1,2,3-cd)pyrene	620	U
53-70-3	Dibenzo(a,h)anthracene	620	U
191-24-2	Benzo(g,h,i)perylene	620	U
92-52-4	1,1'-Biphenyl	620	U
98-86-2	Acetophenone	620	U
1912-24-9	Atrazine	620	U
100-52-7	Benzaldehyde	180	J
105-60-2	Caprolactum	620	U

(1) - Cannot be separated from Diphenylamine

Data File: S3C2358.D
Report Date: 17-Mar-2003 21:53

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030315.B\S3C2358.D
Lab Smp Id: B0327-03A Client Smp ID: WOD-SS-134
Inj Date : 15-MAR-2003 10:40
Operator : WC Inst ID: s3.i
Smp Info : B0327-03A,WOD-SS-134,5840,,,B0327
Misc Info : ,,,2,,,,30.0,47,,28-FEB-03,27-FEB-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030315.B\S3_8270C.m
Meth Date : 15-Mar-2003 14:43 mtl Quant Type: ISTD
Cal Date : 12-MAR-2003 15:21 Cal File: S3C2284.D
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848SL.sub
Target Version: 4.03
Processing Host: TARGET4

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Ws)*(100/(100-M))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC correction factor
Vt	1000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.000	Weight of sample extracted (g)
M	47.000	% Moisture

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
$	3 2-Fluorophenol	112	5.649	5.621	(0.721)	226361	40.8622	2600
	101 Benzaldehyde	77	7.086	7.074	(0.904)	6920	2.93581	180(a)
$	5 Phenol-d5	99	7.267	7.245	(0.927)	241095	36.9535	2300
$	9 2-Chlorophenol-d4	132	7.460	7.448	(0.952)	258392	40.5614	2600
*	12 1,4-Dichlorobenzene-d4	152	7.839	7.833	(1.000)	197433	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	8.122	8.116	(1.036)	107017	23.4635	1500
$	22 Nitrobenzene-d5	82	8.897	8.901	(0.866)	189430	25.4086	1600
*	31 Naphthalene-d8	136	10.270	10.269	(1.000)	677545	40.0000	
$	41 2-Fluorobiphenyl	172	12.455	12.454	(0.902)	435234	27.4206	1700
*	48 Acenaphthene-d10	164	13.811	13.805	(1.000)	402189	40.0000	
$	60 2,4,6-Tribromophenol	330	15.441	15.424	(0.916)	71709	44.5225	2800
*	64 Phenanthrene-d10	188	16.851	16.840	(1.000)	555951	40.0000	
$	72 Terphenyl-d14	244	20.136	20.125	(0.904)	310001	35.5537	2200

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BE	AR1660BE	03/03/03	2314	6.78	22.14
23	BBLK1G	MB-5838	03/04/03	0320	6.78	22.13
24	B1GLCS	LCS-5838	03/04/03	0355	6.78	22.13
25	AR1660BF	AR1660BF	03/04/03	0837	6.78	22.14
26	AR1660BG	AR1660BG	03/04/03	1804	6.78	22.13
27	SV1260203	B0327-02A	03/04/03	1914	6.78	22.13
28	WOD-SS-134	B0327-03A	03/04/03	1950	6.78	22.13
29	WOD-SS-135	B0327-04A	03/04/03	2025	6.78	22.13
30	AR1660BH	AR1660BH	03/04/03	2322	6.78	22.13
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BE	AR1660BE	03/03/03	2314	8.45	25.35
23	BBLK1G	MB-5838	03/04/03	0320	8.45	25.35
24	B1GLCS	LCS-5838	03/04/03	0355	8.45	25.35
25	AR1660BF	AR1660BF	03/04/03	0837	8.45	25.35
26	AR1660BG	AR1660BG	03/04/03	1804	8.45	25.35
27	SV1260203	B0327-02A	03/04/03	1914	8.45	25.35
28	WOD-SS-134	B0327-03A	03/04/03	1950	8.45	25.35
29	WOD-SS-135	B0327-04A	03/04/03	2025	8.45	25.35
30	AR1660BH	AR1660BH	03/04/03	2322	8.45	25.35
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11134.000	0.01	6.7	15.0
(2)	24115.960	21559.000	0.01	10.6	15.0
(3)	14202.320	12700.000	0.01	10.6	15.0
Aroclor-1260	29455.240	27101.000	0.01	8.0	15.0
(2)	40190.280	41223.000	0.01	2.6	15.0
(3)	23147.960	21874.000	0.01	5.5	15.0
Tetrachloro-m-xylene	503358.00	485050.00	0.01	3.6	15.0
Decachlorobiphenyl	581298.00	532600.00	0.01	8.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/03/03 Time: 2314

Lab File ID: E1D9601R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43868.000	0.01	6.6	15.0
(2)	24183.600	22133.000	0.01	8.5	15.0
(3)	20737.640	19515.000	0.01	5.9	15.0
Aroclor-1260	45409.320	43643.000	0.01	3.9	15.0
(2)	46248.440	44244.000	0.01	4.3	15.0
(3)	64584.960	66421.000	0.01	2.8	15.0
Tetrachloro-m-xylene	741526.00	715600.00	0.01	3.5	15.0
Decachlorobiphenyl	711418.00	717500.00	0.01	0.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11226.000	0.01	5.9	15.0
(2)	24115.960	22229.000	0.01	7.8	15.0
(3)	14202.320	12983.000	0.01	8.6	15.0
Aroclor-1260	29455.240	27725.000	0.01	5.9	15.0
(2)	40190.280	42546.000	0.01	5.9	15.0
(3)	23147.960	22817.000	0.01	1.4	15.0
Tetrachloro-m-xylene	503358.00	489150.00	0.01	2.8	15.0
Decachlorobiphenyl	581298.00	540150.00	0.01	7.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 0837

Lab File ID: E1D9617R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44591.000	0.01	5.0	15.0
(2)	24183.600	22512.000	0.01	6.9	15.0
(3)	20737.640	19933.000	0.01	3.9	15.0
Aroclor-1260	45409.320	44767.000	0.01	1.4	15.0
(2)	46248.440	46068.000	0.01	0.4	15.0
(3)	64584.960	67661.000	0.01	4.8	15.0
Tetrachloro-m-xylene	741526.00	723800.00	0.01	2.4	15.0
Decachlorobiphenyl	711418.00	721600.00	0.01	1.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 1804

Lab File ID: E1D9633F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11696.000	0.01	2.0	15.0
(2)	24115.960	23470.000	0.01	2.7	15.0
(3)	14202.320	13695.000	0.01	3.6	15.0
Aroclor-1260	29455.240	29064.000	0.01	1.3	15.0
(2)	40190.280	44846.000	0.01	11.6	15.0
(3)	23147.960	24428.000	0.01	5.5	15.0
Tetrachloro-m-xylene	503358.00	511150.00	0.01	1.5	15.0
Decachlorobiphenyl	581298.00	563300.00	0.01	3.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 1804

Lab File ID: E1D9633R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	46653.000	0.01	0.6	15.0
(2)	24183.600	23372.000	0.01	3.4	15.0
(3)	20737.640	20691.000	0.01	0.2	15.0
Aroclor-1260	45409.320	46627.000	0.01	2.7	15.0
(2)	46248.440	48259.000	0.01	4.3	15.0
(3)	64584.960	70520.000	0.01	9.2	15.0
Tetrachloro-m-xylene	741526.00	758450.00	0.01	2.3	15.0
Decachlorobiphenyl	711418.00	765150.00	0.01	7.6	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 2322

Lab File ID: E1D9642F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11553.000	0.01	3.2	15.0
(2)	24115.960	23461.000	0.01	2.7	15.0
(3)	14202.320	13830.000	0.01	2.6	15.0
Aroclor-1260	29455.240	29078.000	0.01	1.3	15.0
(2)	40190.280	45122.000	0.01	12.3	15.0
(3)	23147.960	24154.000	0.01	4.3	15.0
Tetrachloro-m-xylene	503358.00	514800.00	0.01	2.3	15.0
Decachlorobiphenyl	581298.00	572350.00	0.01	1.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date: 03/04/03 Time: 2322

Lab File ID: E1D9642R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	46985.000	0.01	0.0	15.0
(2)	24183.600	23571.000	0.01	2.5	15.0
(3)	20737.640	20884.000	0.01	0.7	15.0
Aroclor-1260	45409.320	47040.000	0.01	3.6	15.0
(2)	46248.440	48458.000	0.01	4.8	15.0
(3)	64584.960	72128.000	0.01	11.7	15.0
Tetrachloro-m-xylene	741526.00	766500.00	0.01	3.4	15.0
Decachlorobiphenyl	711418.00	784250.00	0.01	10.2	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: MB-5838

Sample wt/vol: 30.0 (g/mL) G Lab File ID: E1D9608F

% Moisture: 0 decanted: (Y/N) N Date Received: _____

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	33	U
11104-28-2	Aroclor-1221	33	U
11141-16-5	Aroclor-1232	33	U
53469-21-9	Aroclor-1242	33	U
12672-29-6	Aroclor-1248	33	U
11097-69-1	Aroclor-1254	33	U
11096-82-5	Aroclor-1260	33	U

FORM 2
SOIL PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1G	93	96	80	91			0
02	B1GLCS	91	96	83	94			0
03	SV1260203	75	77	70	78			0
04	WOD-SS-134	67	68	61	71			0
05	WOD-SS-135	67	64	60	69			0
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (42-147)
S2 (DCB) = Decachlorobiphenyl (29-155)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
SOIL PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix Spike - Sample No.: B1GLCS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	330		310	94	62-155
Aroclor-1260	330		320	97	56-173

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 10
PCB IDENTIFICATION SUMMARY
FOR MULTICOMPONENT ANALYTES

CLIENT SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Lab Sample ID: B0327-04A Date(s) Analyzed: 03/04/03 03/04/03

Instrument ID (1): E1 Instrument ID (2): E1

GC Column(1): RTXCLPPEST 2 ID: 0.53(mm) GC Column(2): RTXCLPPEST ID: 0.53(mm)

ANALYTE	PEAK	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	MEAN CONCENTRATION	%D
	1	16.79	16.75	16.89	260		
Aroclor-1260	2	18.56	18.52	18.66	200		
	3	19.28	19.24	19.38	210		
COLUMN 1	4						
	5					220	
	1	18.57	18.51	18.65	230		
	2	19.53	19.45	19.59	1200		
	3	21.20	21.15	21.29	180		
COLUMN 2	4						
	5					540	84.2
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						
	1						
	2						
	3						
COLUMN 1	4						
	5						
	1						
	2						
	3						
COLUMN 2	4						
	5						

At least 3 peaks are required for identification of multicomponent analytes.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740	SDG-B0327
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 3/8/03

Sample WOJ-55-135

Aroclor 1260 = 220 ug/kg

$$\text{Aroclor 1260 Peak 1} = \frac{(6313\,ng)(10000\,uL)}{(29455)(30.6\,g)(1\,uL)(0.27)} = 259.4\,ng/g = ug/kg$$

$$\frac{259.4 + 200 + 210}{3} = 223.1\,ug/kg$$

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix: (soil/water) SOIL Lab Sample ID: B0327-04A

Sample wt/vol: 30.6 (g/mL) G Lab File ID: E1D9637F

% Moisture: 73 decanted: (Y/N) N Date Received: 02/27/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted:02/28/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	120	U
11104-28-2	Aroclor-1221	120	U
11141-16-5	Aroclor-1232	120	U
53469-21-9	Aroclor-1242	120	U
12672-29-6	Aroclor-1248	120	U
11097-69-1	Aroclor-1254	120	U
11096-82-5	Aroclor-1260	220	P

Data File: E1D9637F.D
Report Date: 07-Mar-2003 15:16

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030303F.B\E1D9637F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030303R.B\E1D9637R.D
Inj Date : 04-MAR-2003 20:25
Sample Info: B0327-04A,WOD-SS-135,MB-5838,pcb.sub,,
Misc Info : 0,,,2,,,,30.6,,,28-FEB-03,27-FEB-03,B0327
Cal Date : 05-MAR-2003 09:19
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030303F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030303R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vi * Ws * (100 - M)/100)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)(1000 low, 2
Vi	1.000	Volume injected (uL)
Ws	30.600	Weight of sample extracted (g)
M	73.000	% Moisture

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/Kg)	Conc#2 (ug/Kg)	Target Range	Ratio
Tetrachloro-m-xylene	6.777	8.447	13416	19048	32	31		100.00
Decachlorobiphenyl	22.130	25.347	13864	19719	29	34		100.00
Aroclor-1260	16.790	18.570	6313	8695	260	230	80.00- 120.00	100.00
	18.563	19.527	6572	46760	200	1200	135.18- 175.18	104.10
	19.277	21.203	3991	9393	210	180	63.07- 103.07	63.22
			Average of Peak Amounts =		220 ✓	540		

BMF
3/7/03

0379

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 13, 2003**
FROM:	**ETHAN G. LEE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND PH**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0327

SAMPLES: 3/SOIL/

WOD-SS-134 WOD-SS-135 WOD-SU-126-0203

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0327, consists of three (3) soil environmental samples.

All samples were analyzed for target analyte list (TAL) metals. Samples WOD-SS-134 and WOD-SS-135 were also analyzed for pH and grain size. The samples were collected by Tetra Tech NUS February 26, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Analyses of grain size were subcontracted to RI Analytical Laboratories and submitted with this SDG. Results for grain size were not entered into the database. Analyses of total organic carbon (TOC) were subcontracted to Severn Trent Laboratories Burlington and will be submitted in a separate SDG. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7471A. pH analyses were conducted using SW846 method 9045C. Grain size analyses were conducted using method ASTM D422.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	59.1 ug/L	14.78 mg/kg
Antimony	3.0 ug/L	0.75 mg/kg
Magnesium	66.4 ug/L	16.6 mg/kg
Manganese[(1)]	0.066 mg/kg	0.33 mg/kg
Potassium	83.7 ug/L	20.93 mg/kg
Zinc	8.8 ug/L	2.2 mg/kg

[(1)] Maximum concentration present in soil preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot, percent solids, and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. No validation action was required for these analytes because the results were either greater than the action level or they were nondetects.

- The interfering analyte aluminum was present in sample WOD-SU-126-0203 at a concentration comparable to the concentration of aluminum in the interference check sample (ICS) solution. Several analytes, namely antimony, barium, cadmium, cobalt, chromium, lead, manganese, nickel, potassium, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the instrument detection limit (IDL). Interference effects exist for antimony and cadmium in the affected sample. The nondetected results reported for antimony and cadmium were qualified as biased low (UL).

- The interfering analyte iron was present in sample WOD-SU-126-0203 at a concentration comparable to the concentration of iron in the ICS solution. Several analytes, namely antimony, barium, cadmium, cobalt, chromium, lead, manganese, nickel, potassium, sodium, thallium, and vanadium were present in the ICS solution at concentrations that exceeded the absolute value of the IDL. Interference effects exist for antimony, cadmium, and sodium in the affected sample. The positive result reported for sodium was qualified as biased high (K). The nondetected results reported for antimony and cadmium were qualified as biased low (UL).

- Percent solids in sample WOD-SS-135 was below 30%. Positive and nondetected results reported for all analytes in this sample were qualified as estimated (J) and (UJ), respectively.

Notes

The sample ID with the prefix "WOD-SU" was reported incorrectly by the laboratory as "W0D-SV". The data reviewer amended the database for these samples.

The laboratory did not report the results for the analytes in the ICSA solution. The data reviewer used the raw data to check the levels of analytes in the solution so interference effects could be determined.

Matrix spike, laboratory duplicate, and serial dilution analyses were not performed for this SDG.

Executive Summary

Laboratory Performance: No laboratory quality control issues were noted for this SDG.

Other Factors Affecting Data Quality: Several analytes were qualified due to ICS interference. Several analytes were qualified due to percent solids above 30%.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
K	-	Positive result is considered biased high as a result of technical noncompliance.
L	-	Positive result is considered biased low as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: M

nsample	WOD-SS-134		nsample	WOD-SS-135		nsample	WOD-SU-126-0203	
samp_date	2/26/2003		samp_date	2/26/2003		samp_date	2/26/2003	
lab_id	B0327-03A		lab_id	B0327-04A		lab_id	B0327-02A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	MG/KG		units	MG/KG		units	MG/KG	
Pct_Solids	53		Pct_Solids	27		Pct_Solids	85	
DUP_OF:			DUP_OF:			DUP_OF:		
Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code	Parameter	Result	Val Qual	Qual Code
ALUMINUM	4870			ALUMINUM	14600	J	Y	ALUMINUM	11100		
ANTIMONY	0.25	U		ANTIMONY	0.49	UJ	Y	ANTIMONY	0.17	UL	K
ARSENIC	2.5			ARSENIC	7.6	J	Y	ARSENIC	2.8		
BARIUM	11.0			BARIUM	20.9	J	Y	BARIUM	27.1		
BERYLLIUM	0.13			BERYLLIUM	0.45	J	Y	BERYLLIUM	0.21		
CADMIUM	0.058	U		CADMIUM	0.11	UJ	Y	CADMIUM	0.039	UL	K
CALCIUM	755			CALCIUM	3060	J	Y	CALCIUM	13.4	U	
CHROMIUM	5.4			CHROMIUM	20.9	J	Y	CHROMIUM	9.6		
COBALT	2.1			COBALT	3.2	J	Y	COBALT	2.4		
COPPER	3.9			COPPER	21.1	J	Y	COPPER	3.2		
IRON	5180			IRON	11000	J	Y	IRON	8540		
LEAD	9.9			LEAD	59.6	J	Y	LEAD	4.4		
MAGNESIUM	1040			MAGNESIUM	4170	J	Y	MAGNESIUM	622		
MANGANESE	16.1			MANGANESE	54.0	J	Y	MANGANESE	37.7		
MERCURY	0.052			MERCURY	0.19	J	Y	MERCURY	0.019	U	
NICKEL	3.7			NICKEL	14.2	J	Y	NICKEL	5.4		
POTASSIUM	308			POTASSIUM	1170	J	Y	POTASSIUM	284		
SELENIUM	0.75	U		SELENIUM	1.5	J	Y	SELENIUM	0.50	U	
SILVER	0.40			SILVER	1.6	J	Y	SILVER	0.46		
SODIUM	645			SODIUM	3820	J	Y	SODIUM	20.5	K	K
THALLIUM	0.25	U		THALLIUM	0.49	UJ	Y	THALLIUM	0.17	U	
VANADIUM	12.9			VANADIUM	70.7	J	Y	VANADIUM	15.0		
ZINC	12.6			ZINC	48.1	J	Y	ZINC	10.6		

PROJ_NO: 4740

SDG: B0327 MEDIA: SOIL DATA FRACTION: MI

nsample	WOD-SS-134
samp_date	2/26/2003
lab_id	B0327-03A
qc_type	NM
Pct_Solids	53
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.8		

nsample	WOD-SS-135
samp_date	2/26/2003
lab_id	B0327-04A
qc_type	NM
Pct_Solids	27
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
PH	S.U.	6.7		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-134

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: ____ SDG No.: B0327

Matrix (soil/water): SOIL____ Lab Sample ID: B0327-03A_____

Level (low/med): MED Date Received: 02/27/03___.

% Solids: 53.0_____

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4870			P
7440-36-0	Antimony	0.25	U		P
7440-38-2	Arsenic	2.5			P
7440-39-3	Barium	11.0	B		P
7440-41-7	Beryllium	0.13	B		P
7440-43-9	Cadmium	0.058	U		P
7440-70-2	Calcium	755			P
7440-47-3	Chromium	5.4			P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	3.9			P
7439-89-6	Iron	5180			P
7439-92-1	Lead	9.9			P
7439-95-4	Magnesium	1040			P
7439-96-5	Manganese	16.1			P
7439-97-6	Mercury	0.052	B		CV
7440-02-0	Nickel	3.7	B		P
7440-09-7	Potassium	308			P
7782-49-2	Selenium	0.75	U		P
7440-22-4	Silver	0.40	B		P
7440-23-5	Sodium	645			P
7440-28-0	Thallium	0.25	U		P
7440-62-2	Vanadium	12.9			P
7440-66-6	Zinc	12.6			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-SS-135

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0327___

Matrix (soil/water): SOIL Lab Sample ID: B0327-04A_____

Level (low/med): MED____ Date Received: 02/27/03____

% Solids: 27.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	14600			P
7440-36-0	Antimony	0.49	U		P
7440-38-2	Arsenic	7.6			P
7440-39-3	Barium	20.9	B		P
7440-41-7	Beryllium	0.45	B		P
7440-43-9	Cadmium	0.11	U		P
7440-70-2	Calcium	3060			P
7440-47-3	Chromium	20.9			P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	21.1			P
7439-89-6	Iron	11000			P
7439-92-1	Lead	59.6			P
7439-95-4	Magnesium	4170			P
7439-96-5	Manganese	54.0			P
7439-97-6	Mercury	0.19			CV
7440-02-0	Nickel	14.2			P
7440-09-7	Potassium	1170			P
7782-49-2	Selenium	1.5	B		P
7440-22-4	Silver	1.6	B		P
7440-23-5	Sodium	3820			P
7440-28-0	Thallium	0.49	U		P
7440-62-2	Vanadium	70.7			P
7440-66-6	Zinc	48.1			P
	Cyanide				NR

Color Before: _____ Clarity Before: Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

_____

_____

_____

_____

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

SV1260203

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Matrix (soil/water): SOIL Lab Sample ID: B0327-02A

Level (low/med): MED Date Received: 02/27/03

% Solids: 85.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11100			P
7440-36-0	Antimony	0.17	U		P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	27.1			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.039	U		P
7440-70-2	Calcium	13.4	U		P
7440-47-3	Chromium	9.6			P
7440-48-4	Cobalt	2.4	B		P
7440-50-8	Copper	3.2			P
7439-89-6	Iron	8540			P
7439-92-1	Lead	4.4			P
7439-95-4	Magnesium	622			P
7439-96-5	Manganese	37.7			P
7439-97-6	Mercury	0.019	U		CV
7440-02-0	Nickel	5.4			P
7440-09-7	Potassium	284			P
7782-49-2	Selenium	0.50	U		P
7440-22-4	Silver	0.46	B		P
7440-23-5	Sodium	20.5	B		P
7440-28-0	Thallium	0.17	U		P
7440-62-2	Vanadium	15.0			P
7440-66-6	Zinc	10.6			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

0504

Percent Moisture and Percent Solids Report

Mitkem Sample ID	*Client Sample ID*	*Analyzed*	*Percent Moisture*	*Percent Solids*	*Validated*
B0327-02A	*WOD-SV-126-0203*	02/27/2003	15	85	No
B0327-03A	*WOD-SS-134*	02/27/2003	47	53	No
B0327-04A	*WOD-SS-135*	02/27/2003	73	27	No

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	WOD-SS-134
Lab Order:	B0327	**Tag Number:**	
Project:	Wallops Island	**Collection Date:**	2/26/03 9:40:00 AM
Lab ID:	B0327-03A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.8	1.0		pH Units	1	03/07/03 0:00

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quantitation limits
- B - Analyte detected in the associated Method Blank
- * - Value exceeds Maximum Contaminant Level
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

Mitkem Corporation

Date: *18-Mar-03*

CLIENT:	Tetra Tech NUS, Inc.	**Client Sample ID:**	WOD-SS-135
Lab Order:	B0327	**Tag Number:**	
Project:	Wallops Island	**Collection Date:**	2/26/03 10:00:00 AM
Lab ID:	B0327-04A		

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
SOIL AND WASTE PH					**SW9045C_S**	
pH	6.7	1.0		pH Units	1	03/07/03 0:00

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

0564

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0303-2612
Date Received: 3/03/03

Approved by: _____
R.I. Analytical

Sample #: 001 B0327-03C 02/26/03 @0940

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	0.35	99.65
No. 10	24.94	74.71
No. 20	27.41	47.30
No. 40	15.26	32.04
No. 60	12.24	19.80
No. 140	12.24	7.56
No. 200	2.12	5.44

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem
Work Order No.: 0303-2612
Date Received: 3/03/03

Approved by: _____
R.I. Analytical

Sample #: 002 B0327-04C 02/26/03 @1000

Sieve Analysis – Method ASTM D422

Sieve Size	% Retained	% Passing
No. 4	1.03	98.97
No. 10	2.11	96.86
No. 20	10.78	86.08
No. 40	38.04	48.04
No. 60	32.14	15.90
No. 140	12.30	3.60
No. 200	1.06	2.54

APPENDIX C

SUPPORT DOCUMENTATION

B0327

HOLDING TIME

05/01/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	LCSS	0227LCSS	LCS	B0327	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	PBS	0227PBS	M_BLANK	B0327	HG	/ /	02/27/03	02/28/03	0	1	0
MG/KG	WOD-SS-134	B0327-03A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
MG/KG	WOD-SS-135	B0327-04A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
MG/KG	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	HG	02/26/03	02/27/03	02/28/03	1	1	2
%	LCSS	0227LCSS	LCS	B0327	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	PBS	0227PBS	M_BLANK	B0327	M	/ /	02/27/03	02/27/03	0	0	0
MG/KG	WOD-SS-134	B0327-03A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
MG/KG	WOD-SS-135	B0327-04A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
MG/KG	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	M	02/26/03	02/27/03	02/27/03	1	0	1
%	SBLK3S	MB-5840	M_BLANK	B0327	OS	/ /	02/28/03	03/15/03	0	15	0
%	SBLK3SLCS	LCS-5840	LCS	B0327	OS	/ /	02/28/03	03/15/03	0	15	0
%	WOD-SS-134	B0327-03A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
%	WOD-SS-135	B0327-04A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
%	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	OS	02/26/03	02/28/03	03/15/03	2	15	17
UG/L	TB-022603	B0327-01A	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
UG/L	VBLK2D	V2B0303A	M_BLANK	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK2DLCS	V2L0303A	LCS	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5K	V5B0303A	M_BLANK	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5KLCS	V5L0303A	LCS	B0327	OV	/ /	03/03/03	03/03/03	0	0	0
%	VBLK5L	V5B0304A	M_BLANK	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCS	V5L0304A	LCS	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	VBLK5LLCSD	V5L0304B	LCSD	B0327	OV	/ /	03/04/03	03/04/03	0	0	0
%	WOD-SS-134	B0327-03B	NORMAL	B0327	OV	02/26/03	03/04/03	03/04/03	6	0	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-SS-135	B0327-04B	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
%	WOD-SU-126-0203	B0327-02B	NORMAL	B0327	OV	02/26/03	03/03/03	03/03/03	5	0	5
%	BBLK1G	MB-5838	M_BLANK	B0327	PCB	/ /	02/28/03	03/04/03	0	4	0
%	BBLK1GLCS	LCS-5838	LCS	B0327	PCB	/ /	02/28/03	03/04/03	0	4	0
%	WOD-SS-134	B0327-03A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
%	WOD-SS-135	B0327-04A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
%	WOD-SU-126-0203	B0327-02A	NORMAL	B0327	PCB	02/26/03	02/28/03	03/04/03	2	4	6
S.U.	WOD-SS-134	B0327-03A	NORMAL	B0327	PH	02/26/03	03/07/03	03/07/03	9	0	9
S.U.	WOD-SS-135	B0327-04A	NORMAL	B0327	PH	02/26/03	03/07/03	03/07/03	9	0	9

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0327
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza XII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA 15220 cm #126103		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	TAL VOC Sytem Encore sampler	TAL VOC 40z Amber glass widemouth	TAL SVOC PCB 40z Amber glass widemouth	TAL Metals %a moisture 40z Amber glass widemouth	TAL Metals + Pet 40z Amber glass widemouth	TAL %a Moisture 80z Amber glass widemouth	REQUESTED ANALYSES	COMMENTS
TB-022603	2/26/03 0715		X	X			01	2	2								Trip Blank
WOD-SU-126-0203	2/26/03 0824		X		X		02	5		3	1	1					
WOD-SS-134	2/26/03 0940		X		X		03	7		3	1		1	1	1		
WOD-SS-135	2/26/03 1000		X		X		04	7		3	1		1	1	1		
	/																
	/																
	/																
	/																
	/																
	/																
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		2/26/03 1700		2-27-03 0900	Trip Blank was provided by the Lab	3C
		/		/	Samples shipped via Airbill NO 8286 8471 2636	
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0327

Mitkem Project ID: B0327

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for one aqueous and three soil samples that were collected on February 26, 2003, and received at Mitkem on February 27, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of pH. The analysis results for pH are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: internal standard area counts were within the QC criteria with the exception of sample WOD-SS-134. The sample was not re-analyzed as all surrogate recoveries were within the QC limits. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery 2,2'-oxybis (1-chloropropane), N-nitrosodiphenylamine and carbazole in S3SLCS.

Sample analysis: no other unusual observation was made for the analysis.

4. PCBs Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
SV1260203	B0327-02A
WOD-SS-134	B0327-03A
WOD-SS-135	B0327-04A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Reinor A. Conway

Date: 3/4/03 Title: Chemist

R.I. Analytical

Specialists in Environmental Services

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Attn: Data Reporting
175 Metro Center Blvd.
Warwick, RI 02886-1755

Date Received: 3/03/03
Date Reported: 3/05/03
P.O. #: 301
Work Order #: 0303-02612

DESCRIPTION: PROJECT# B0327 (TWO SOIL SAMPLES)

Subject sample(s) has/have been analyzed by our laboratory with the attached results.

Reference: American Society for Testing and Materials

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015
NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we maybe of further assistance, please contact us.

Approved by:

Paul Perrotti
Data Reporting Manager

enc: Chain of Custody

0567

41 Illinois Avenue, Warwick, RI 02888
Tel: (401) 737-8500 Fax: (401) 738-1970

131 Coolidge Street, Bldg 2, Hudson, MA 01749
Tel: (978) 568-0041 Fax: (978) 568-0078

R.I. Analytical Laboratories, Inc.

CERTIFICATE OF ANALYSIS

Mitkem Corporation
Date Received: 3/03/03
Work Order # 0303-02612

Approved by: R.I. Analytical

Sample #: 001
SAMPLE DESCRIPTION: B0327-03C 02/26/03 @0940

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	3/05/03 9:30	EC

Sieve - * See Attached

Sample #: 002
SAMPLE DESCRIPTION: B0327-04C 02/26/03 @1000

PARAMETER	SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	ANALYZED DATE/TIME	ANALYST
SIEVE ANALYSIS	*			ASTM	3/05/03 10:00	EC

Sieve - * See Attached

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	59.1	B	17.0	U	17.0	U			-1.182	B	P
Antimony	3.0	U	3.0	B	3.0	U			0.150	U	P
Arsenic	3.0	U	3.0	U	3.0	U			0.150	U	P
Barium	4.0	U	4.0	U	4.0	U			0.200	U	P
Beryllium	0.5	U	0.5	U	0.5	U			0.025	U	P
Cadmium	0.7	U	0.7	U	0.7	U			0.035	U	P
Calcium	240.0	U	240.0	U	240.0	U			12.000	U	P
Chromium	0.6	U	0.6	U	0.6	U			0.030	U	P
Cobalt	0.9	U	0.9	U	0.9	U			0.045	U	P
Copper	4.0	U	4.0	U	4.0	U			0.200	U	P
Iron	26.0	U	26.0	U	26.0	U			1.300	U	P
Lead	4.0	U	4.0	U	4.0	U			0.200	U	P
Magnesium	8.0	U	8.0	U	66.4	B			-0.405	B	P
Manganese	0.8	U	0.8	U	0.8	U			0.066	B	P
Mercury	0.1	U	0.1	U					0.017	U	CV
Nickel	0.8	U	0.8	U	0.8	U			0.040	U	P
Potassium	83.7	B	78.0	U	78.0	U			3.900	U	P
Selenium	9.0	U	9.0	U	9.0	U			0.450	U	P
Silver	2.0	U	2.0	U	2.0	U			0.100	U	P
Sodium	83.0	U	83.0	U	83.0	U			4.150	U	P
Thallium	3.0	U	3.0	U	3.0	U			0.150	U	P
Vanadium	0.7	U	0.7	U	0.7	U			0.035	U	P
Zinc	8.8	B	7.0	U	7.0	U			0.350	U	P
Cyanide											

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	474858	472582.2	94.5	479656	471286.3	94.3
Antimony		600		549.4	91.6		541.2	90.2
Arsenic		100		92.1	92.1		90.2	90.2
Barium		500		469.0	93.8		468.3	93.7
Beryllium		500		452.3	90.5		452.1	90.4
Cadmium		1000		868.1	86.8		869.1	86.9
Calcium	500000	500000	489701	488754.9	97.8	494301	485235.8	97.0
Chromium		500		448.8	89.8		450.1	90.0
Cobalt		500		445.2	89.0		444.5	88.9
Copper		500		501.1	100.2		495.5	99.1
Iron	200000	200000	167738	166629.1	83.3	170447	166889.5	83.4
Lead		500		450.6	90.1		445.9	89.2
Magnesium	500000	500000	469931	466592.3	93.3	478450	467700.7	93.5
Manganese		500		458.9	91.8		458.7	91.7
Mercury								
Nickel		1000		871.7	87.2		870.8	87.1
Potassium		25000		24838.5	99.4		24560.3	98.2
Selenium		500		481.4	96.3		478.6	95.7
Silver		200		200.4	100.2		194.8	97.4
Sodium		25000		25200.3	100.8		25062.6	100.3
Thallium		100		97.5	97.5		98.0	98.0
Vanadium		500		452.2	90.4		449.7	89.9
Zinc		1000		854.6	85.5		849.3	84.9

Analyst:
Sample Wt:
Dilution:

Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	265433.5	1.1843	mg/L	0.00448	1.1843	mg/L	0.00448	0.38%
Al 308.215	309753.9	9.6257	mg/L	0.03123	9.6257	mg/L	0.03123	0.32%
As 188.979	738.4	0.5014	mg/L	0.00286	0.5014	mg/L	0.00286	0.57%
Ba 233.527	477247.7	10.247	mg/L	0.0190	10.247	mg/L	0.0190	0.19%
Be 313.107	572109.1	0.2461	mg/L	0.00063	0.2461	mg/L	0.00063	0.26%
Co 228.616	35552.9	2.5368	mg/L	0.00819	2.5368	mg/L	0.00819	0.32%
Cr 267.716	54786.5	1.0067	mg/L	0.00401	1.0067	mg/L	0.00401	0.40%
Cu 324.752	310685.0	1.2606	mg/L	0.00189	1.2606	mg/L	0.00189	0.15%
Fe 273.955	160338.3	5.0323	mg/L	0.01677	5.0323	mg/L	0.01677	0.33%
Mg 279.077	354855.1	24.330	mg/L	0.0863	24.330	mg/L	0.0863	0.35%
Mn 257.610	1044757.1	2.4946	mg/L	0.00579	2.4946	mg/L	0.00579	0.23%
Ni 231.604	26231.1	2.5486	mg/L	0.01216	2.5486	mg/L	0.01216	0.48%
Pb 220.353	880.7	0.4941	mg/L	0.00378	0.4941	mg/L	0.00378	0.76%
Sb 206.836	433.9	0.4947	mg/L	0.00502	0.4947	mg/L	0.00502	1.02%
Se 196.026	350.6	0.4955	mg/L	0.00048	0.4955	mg/L	0.00048	0.10%
Tl 190.801	954.4	0.4924	mg/L	0.00153	0.4924	mg/L	0.00153	0.31%
V 292.402	277308.2	2.5025	mg/L	0.01150	2.5025	mg/L	0.01150	0.46%
Zn 206.200	27773.8	2.5260	mg/L	0.00335	2.5260	mg/L	0.00335	0.13%
Na 330.237	27768.5	23.619	mg/L	0.1750	23.619	mg/L	0.1750	0.74%
Cd 226.502	5038.3	0.2519	mg/L	0.00037	0.2519	mg/L	0.00037	0.15%
Ti 334.940	470.5	0.0007	mg/L	0.00003	0.0007	mg/L	0.00003	5.14%
Ca 227.546	2619.0	23.936	mg/L	0.0417	23.936	mg/L	0.0417	0.17%

Sequence No.: 11
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/27/03 6:21:45 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	111.6	0.0005	mg/L	0.00013	0.0005	mg/L	0.00013	26.58%
Al 308.215	1899.8	0.0591	mg/L	0.03062	0.0591	mg/L	0.03062	51.77%
As 188.979	-0.5	-0.0003	mg/L	0.00080	-0.0003	mg/L	0.00080	252.52%
Ba 233.527	-3.2	-0.0001	mg/L	0.00005	-0.0001	mg/L	0.00005	78.61%
Be 313.107	256.6	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	4.87%
Co 228.616	3.5	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	5.58%
Cr 267.716	8.6	0.0002	mg/L	0.00000	0.0002	mg/L	0.00000	2.40%
Cu 324.752	501.7	0.0020	mg/L	0.00050	0.0020	mg/L	0.00050	24.62%
Fe 273.955	352.6	0.0110	mg/L	0.00146	0.0110	mg/L	0.00146	13.27%
Mg 279.077	14.0	0.0010	mg/L	0.00088	0.0010	mg/L	0.00088	91.98%
Mn 257.610	-0.7	0.0000	mg/L	0.00004	0.0000	mg/L	0.00004	>999.9%
Ni 231.604	-1.8	-0.0002	mg/L	0.00012	-0.0002	mg/L	0.00012	70.84%
Pb 220.353	2.4	0.0013	mg/L	0.00175	0.0013	mg/L	0.00175	134.36%
Sb 206.836	2.1	0.0024	mg/L	0.00335	0.0024	mg/L	0.00335	142.44%
Se 196.026	-2.0	-0.0028	mg/L	0.00110	-0.0028	mg/L	0.00110	39.66%
Tl 190.801	-2.7	-0.0014	mg/L	0.00020	-0.0014	mg/L	0.00020	13.81%
V 292.402	-4.3	0.0000	mg/L	0.00033	0.0000	mg/L	0.00033	863.57%
Zn 206.200	96.9	0.0088	mg/L	0.00136	0.0088	mg/L	0.00136	15.41%
Na 330.237	-141.6	-0.1206	mg/L	0.08957	-0.1206	mg/L	0.08957	74.27%
Cd 226.502	-0.1	0.0000	mg/L	0.00002	0.0000	mg/L	0.00002	529.07%
Ti 334.940	-21.4	0.0000	mg/L	0.00010	0.0000	mg/L	0.00010	276.33%
Ca 227.546	-17.3	-0.1594	mg/L	0.01420	-0.1594	mg/L	0.01420	8.91%

Sequence No.: 12
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/27/03 6:25:50 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-1965.7	0.0123	mg/L	0.00024	0.0123	mg/L	0.00024	2.00%
Al 308.215	15258922.5	474.86	mg/L	2.636	474.86	mg/L	2.636	0.56%
As 188.979	12.8	-0.0024	mg/L	0.00209	-0.0024	mg/L	0.00209	88.37%
Ba 233.527	-338.7	-0.0057	mg/L	0.00005	-0.0057	mg/L	0.00005	0.97%
Be 313.107	393.4	0.0002	mg/L	0.00000	0.0002	mg/L	0.00000	2.47%
Co 228.616	13.2	0.0037	mg/L	0.00021	0.0037	mg/L	0.00021	5.65%
Cr 267.716	-69.3	-0.0012	mg/L	0.00009	-0.0012	mg/L	0.00009	7.87%
Cu 324.752	-2643.0	0.0038	mg/L	0.00093	0.0038	mg/L	0.00093	24.72%
Fe 273.955	5357964.6	167.74	mg/L	0.579	167.74	mg/L	0.579	0.35%
Mg 279.077	6860205.8	469.93	mg/L	1.429	469.93	mg/L	1.429	0.30%
Mn 257.610	3373.2	-0.0028	mg/L	0.00000	-0.0028	mg/L	0.00000	0.09%
Ni 231.604	-817.5	0.0049	mg/L	0.00071	0.0049	mg/L	0.00071	14.48%
Pb 220.353	595.8	0.0065	mg/L	0.00084	0.0065	mg/L	0.00084	12.92%
Sb 206.836	-8.5	-0.0112	mg/L	0.00369	-0.0112	mg/L	0.00369	32.93%
Se 196.026	-66.8	0.0020	mg/L	0.01030	0.0020	mg/L	0.01030	522.40%
Tl 190.801	-39.7	0.0128	mg/L	0.00167	0.0128	mg/L	0.00167	13.02%
V 292.402	7541.8	-0.0080	mg/L	0.00009	-0.0080	mg/L	0.00009	1.14%
Zn 206.200	294.3	0.0069	mg/L	0.00061	0.0069	mg/L	0.00061	8.82%
Na 330.237	-167.6	0.1115	mg/L	0.02554	0.1115	mg/L	0.02554	22.91%
Cd 226.502	140.5	-0.0011	mg/L	0.00018	-0.0011	mg/L	0.00018	16.60%
Ti 334.940	-5562.0	-0.0069	mg/L	0.00001	-0.0069	mg/L	0.00001	0.11%
Ca 227.546	53301.8	489.70	mg/L	2.715	489.70	mg/L	2.715	0.55%

Sequence No.: 13
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/27/03 6:30:03 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	40260.6	0.2004	mg/L	0.00209	0.2004	mg/L	0.00209	1.04%
Al 308.215	15185869.9	472.58	mg/L	2.159	472.58	mg/L	2.159	0.46%
As 188.979	151.8	0.0921	mg/L	0.00056	0.0921	mg/L	0.00056	0.61%
Ba 233.527	21776.7	0.4690	mg/L	0.00393	0.4690	mg/L	0.00393	0.84%
Be 313.107	1051637.8	0.4523	mg/L	0.00679	0.4523	mg/L	0.00679	1.50%
Co 228.616	6200.8	0.4452	mg/L	0.00151	0.4452	mg/L	0.00151	0.34%
Cr 267.716	24421.9	0.4488	mg/L	0.00484	0.4488	mg/L	0.00484	1.08%
Cu 324.752	119882.8	0.5011	mg/L	0.00819	0.5011	mg/L	0.00819	1.63%
Fe 273.955	5322399.1	166.63	mg/L	0.069	166.63	mg/L	0.069	0.04%
Mg 279.077	6811403.3	466.59	mg/L	0.568	466.59	mg/L	0.568	0.12%
Mn 257.610	196651.4	0.4589	mg/L	0.00581	0.4589	mg/L	0.00581	1.27%
Ni 231.604	8117.8	0.8717	mg/L	0.00147	0.8717	mg/L	0.00147	0.17%
Pb 220.353	1374.0	0.4506	mg/L	0.00190	0.4506	mg/L	0.00190	0.42%
Sb 206.836	482.6	0.5494	mg/L	0.00283	0.5494	mg/L	0.00283	0.52%
Se 196.026	274.0	0.4814	mg/L	0.00746	0.4814	mg/L	0.00746	1.55%
Tl 190.801	125.5	0.0975	mg/L	0.00202	0.0975	mg/L	0.00202	2.07%
V 292.402	58324.6	0.4522	mg/L	0.00600	0.4522	mg/L	0.00600	1.33%
Zn 206.200	9603.0	0.8546	mg/L	0.00310	0.8546	mg/L	0.00310	0.36%
Na 330.237	32574.4	27.991	mg/L	0.4958	27.991	mg/L	0.4958	1.77%
Cd 226.502	17575.1	0.8681	mg/L	0.00364	0.8681	mg/L	0.00364	0.42%
Ti 334.940	-5465.9	-0.0068	mg/L	0.00007	-0.0068	mg/L	0.00007	0.95%
Ca 227.546	53201.7	488.75	mg/L	7.167	488.75	mg/L	7.167	1.47%

Sequence No.: 14
Sample ID: MB-5828,5828
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 2/27/03 6:34:20 PM

Sample Prep Volume:
Data Type: Original

Mean Data: MB-5828,5828

Sequence No.: 31
Sample ID: B0327-04A,5827
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 31
Date Collected: 2/27/03 7:44:31 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0327-04A,5827

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	29.5	0.0098	mg/L	0.00008	0.0098	mg/L	0.00008	0.84%
Al 308.215	2886153.2	89.824	mg/L	0.0505	89.824	mg/L	0.0505	0.06%
As 188.979	72.3	0.0467	mg/L	0.00025	0.0467	mg/L	0.00025	0.55%
Ba 233.527	5922.9	0.1288	mg/L	0.00075	0.1288	mg/L	0.00075	0.58%
Be 313.107	1290.5	0.0027	mg/L	0.00000	0.0027	mg/L	0.00000	0.05%
Co 228.616	294.4	0.0197	mg/L	0.00019	0.0197	mg/L	0.00019	0.96%
Cr 267.716	6928.6	0.1287	mg/L	0.00155	0.1287	mg/L	0.00155	1.21%
Cu 324.752	30466.6	0.1297	mg/L	0.00140	0.1297	mg/L	0.00140	1.08%
Fe 273.955	2159663.3	67.588	mg/L	0.2437	67.588	mg/L	0.2437	0.36%
Mg 279.077	375182.6	25.677	mg/L	0.1389	25.677	mg/L	0.1389	0.54%
Mn 257.610	138648.1	0.3321	mg/L	0.00218	0.3321	mg/L	0.00218	0.66%
Ni 231.604	561.4	0.0877	mg/L	0.00069	0.0877	mg/L	0.00069	0.78%
Pb 220.353	761.3	0.3670	mg/L	0.00041	0.3670	mg/L	0.00041	0.11%
Sb 206.836	1.3	0.0004	mg/L	0.00283	0.0004	mg/L	0.00283	629.23%
Se 196.026	-12.2	0.0090	mg/L	0.00106	0.0090	mg/L	0.00106	11.71%
Tl 190.801	-32.7	-0.0108	mg/L	0.00056	-0.0108	mg/L	0.00056	5.19%
V 292.402	48758.7	0.4353	mg/L	0.00467	0.4353	mg/L	0.00467	1.07%
Zn 206.200	3280.3	0.2960	mg/L	0.00072	0.2960	mg/L	0.00072	0.24%
Na 330.237	24799.5	21.258	mg/L	0.1094	21.258	mg/L	0.1094	0.51%
Cd 226.502	58.9	-0.0005	mg/L	0.00015	-0.0005	mg/L	0.00015	30.62%
Ti 334.940	936979.0	1.4861	mg/L	0.00417	1.4861	mg/L	0.00417	0.28%
Ca 227.546	2086.1	18.828	mg/L	0.0230	18.828	mg/L	0.0230	0.12%

Sequence No.: 32
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/27/03 7:48:44 PM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Conc.	Calib Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-2642.3	0.0096	mg/L	0.00036	0.0096	mg/L	0.00036	3.69%
Al 308.215	15413101.7	479.66	mg/L	0.240	479.66	mg/L	0.240	0.05%
As 188.979	12.2	-0.0029	mg/L	0.00006	-0.0029	mg/L	0.00006	2.24%
Ba 233.527	-377.8	-0.0065	mg/L	0.00002	-0.0065	mg/L	0.00002	0.29%
Be 313.107	159.0	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	13.66%
Co 228.616	5.9	0.0033	mg/L	0.00001	0.0033	mg/L	0.00001	0.41%
Cr 267.716	-80.4	-0.0014	mg/L	0.00003	-0.0014	mg/L	0.00003	2.38%
Cu 324.752	-3632.8	0.0000	mg/L	0.00028	0.0000	mg/L	0.00028	>999.9%
Fe 273.955	5444497.8	170.45	mg/L	0.331	170.45	mg/L	0.331	0.19%
Mg 279.077	6984555.8	478.45	mg/L	1.138	478.45	mg/L	1.138	0.24%
Mn 257.610	3399.4	-0.0028	mg/L	0.00003	-0.0028	mg/L	0.00003	1.11%
Ni 231.604	-823.2	0.0057	mg/L	0.00001	0.0057	mg/L	0.00001	0.23%
Pb 220.353	596.7	0.0036	mg/L	0.00009	0.0036	mg/L	0.00009	2.50%
Sb 206.836	-13.4	-0.0168	mg/L	0.00632	-0.0168	mg/L	0.00632	37.55%
Se 196.026	-71.0	-0.0027	mg/L	0.00415	-0.0027	mg/L	0.00415	154.64%
Tl 190.801	-43.2	0.0113	mg/L	0.00151	0.0113	mg/L	0.00151	13.31%
V 292.402	7613.8	-0.0087	mg/L	0.00006	-0.0087	mg/L	0.00006	0.73%
Zn 206.200	187.5	-0.0032	mg/L	0.00007	-0.0032	mg/L	0.00007	2.03%
Na 330.237	-80.1	0.1903	mg/L	0.00678	0.1903	mg/L	0.00678	3.57%
Cd 226.502	139.9	-0.0013	mg/L	0.00006	-0.0013	mg/L	0.00006	4.67%
Ti 334.940	-5369.7	-0.0066	mg/L	0.00002	-0.0066	mg/L	0.00002	0.25%
Ca 227.546	53803.2	494.30	mg/L	4.199	494.30	mg/L	4.199	0.85%

Sequence No.: 33

Autosampler Location: 6

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
K 766.490	3	Lin Thru 0	0.0	3672	0.00000	0.999999	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/28/03 8:54:45 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	184434.6	50.230	mg/L	0.0414	50.230	mg/L	0.0414	0.08%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/28/03 8:57:02 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	89478.7	24.369	mg/L	0.0381	24.369	mg/L	0.0381	0.16%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/28/03 8:59:19 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	307.4	0.0837	mg/L	0.00312	0.0837	mg/L	0.00312	3.73%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/28/03 9:01:38 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	615.8	0.1677	mg/L	0.01286	0.1677	mg/L	0.01286	7.67%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/28/03 9:03:57 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	91202.3	24.839	mg/L	0.0457	24.839	mg/L	0.0457	0.18%

Sequence No.: 21
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 2/28/03 9:31:46 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	128.7	0.0350	mg/L	0.00973	0.0350	mg/L	0.00973	27.78%

Sequence No.: 22
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 2/28/03 9:34:06 AM

Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	90180.8	24.560	mg/L	0.0690	24.560	mg/L	0.0690	0.28%

Sequence No.: 23
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 2/28/03 9:36:27 AM

Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	86691.7	23.610	mg/L	0.1219	23.610	mg/L	0.1219	0.52%

Sequence No.: 24
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 2/28/03 9:38:44 AM

Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	-11.9	-0.0032	mg/L	0.00230	-0.0032	mg/L	0.00230	71.19%

Sequence No.: 25
Sample ID: B0301-12B,5827
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 32
Date Collected: 2/28/03 9:41:03 AM

Sample Prep Volume:
Data Type: Original

Mean Data: B0301-12B,5827

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
K 766.490	35028.9	9.5400	mg/L	0.23173	9.5400	mg/L	0.23173	2.43%

Sequence No.: 26
Sample ID: B0301-12BDUP,5827
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 2/28/03 9:43:18 AM

Sample Prep Volume:
Data Type: Original

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Na 589.592	3	Lin Thru 0	0.0	10200	0.00000	0.999994	

Sequence No.: 5
Sample ID: CHECK
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 2
Date Collected: 2/28/03 10:56:38 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CHECK

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	512432.1	50.255	mg/L	0.4491	50.255	mg/L	0.4491	0.89%

Sequence No.: 6
Sample ID: ICV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/28/03 10:58:57 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	249578.0	24.476	mg/L	0.0368	24.476	mg/L	0.0368	0.15%

Sequence No.: 7
Sample ID: ICB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/28/03 11:01:15 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	555.2	0.0545	mg/L	0.00351	0.0545	mg/L	0.00351	6.45%

Sequence No.: 8
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/28/03 11:03:34 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	850.4	0.0834	mg/L	0.00237	0.0834	mg/L	0.00237	2.84%

Sequence No.: 9
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/28/03 11:05:53 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	256959.4	25.200	mg/L	0.0278	25.200	mg/L	0.0278	0.11%

Sequence No.: 21
Sample ID: ICSA
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 5
Date Collected: 2/28/03 11:33:44 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	663.2	0.0650	mg/L	0.00225	0.0650	mg/L	0.00225	3.46%

Sequence No.: 22
Sample ID: ICSAB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 6
Date Collected: 2/28/03 11:36:04 AM
Sample Prep Volume:
Data Type: Original

Mean Data: ICSAB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	255555.5	25.063	mg/L	0.0417	25.063	mg/L	0.0417	0.17%

Sequence No.: 23
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 3
Date Collected: 2/28/03 11:38:26 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	249241.3	24.443	mg/L	0.3198	24.443	mg/L	0.3198	1.31%

Sequence No.: 24
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 4
Date Collected: 2/28/03 11:40:44 AM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	286.0	0.0281	mg/L	0.00847	0.0281	mg/L	0.00847	30.20%

Sequence No.: 25
Sample ID: B0301-12B,5827
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 32
Date Collected: 2/28/03 11:43:03 AM
Sample Prep Volume:
Data Type: Original

Mean Data: B0301-12B,5827

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Na 589.592	4614.9	0.4526	mg/L	0.01546	0.4526	mg/L	0.01546	3.42%

Sequence No.: 26
Sample ID: B0301-12BDUP,5827
Analyst:
Sample Wt:
Dilution:
Autosampler Location: 33
Date Collected: 2/28/03 11:45:18 AM
Sample Prep Volume:
Data Type: Original

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0327__

ICP ID Number: OPTIMA_1A____ Date: 02/01/03___

Flame AA ID Number:

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium	589.59		1000	83.0	P
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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_____

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0327

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0327_____

Method: P___

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/27/03	0.50	50
PBS	02/27/03	1.00	50
SV1260203	02/27/03	1.05	50
WOD-SS-134	02/27/03	1.13	50
WOD-SS-135	02/27/03	1.14	50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0327

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSS	02/27/03	0.60	100
PBS	02/27/03	0.60	100
SV1260203	02/27/03	0.63	100
WOD-SS-134	02/27/03	0.63	100
WOD-SS-135	02/27/03	0.61	100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0327

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 02/27/03 End Date: 02/27/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
S0	1.00	1742		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S1	1.00	1746		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S2	1.00	1751		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
S3	1.00	1755		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1759																												
ZZZZZZ	1.00	1803																												
ZZZZZZ	1.00	1805																												
ZZZZZZ	1.00	1809																												
ZZZZZZ	1.00	1813																												
ICV	1.00	1818		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICB	1.00	1822		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICSA	1.00	1827		X						X				X		X														
ICSAB	1.00	1831		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1835																												
ZZZZZZ	1.00	1839																												
ZZZZZZ	1.00	1843																												
ZZZZZZ	1.00	1847																												
ZZZZZZ	1.00	1851																												
ZZZZZZ	1.00	1855																												
ZZZZZZ	1.00	1859																												
ZZZZZZ	1.00	1904																												
CCV	1.00	1908		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCB	1.00	1912		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
PBS	1.00	1916		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
LCSS	1.00	1920		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1924																												
ZZZZZZ	1.00	1933																												
SV1260203	1.00	1937		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
WOD-SS-134	1.00	1941		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
WOD-SS-135	1.00	1945		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICSA	1.00	1949		X						X				X		X														
ICSAB	1.00	1954		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION___ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0327

Instrument ID Number: OPTIMA_1A _____ Method: P___

Start Date: 02/27/03___ End Date: 02/27/03 ___

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV	1.00	1958		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCB	1.00	2002		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0327__

Instrument ID Number: OPTIMA_1A _____ Method: P

Start Date: 02/28/03___ End Date: 02/28/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0846																		X							
S1	1.00	0849																		X							
S2	1.00	0851																		X							
S3	1.00	0853																		X							
ZZZZZZ	1.00	0855																									
ICV	1.00	0858																		X							
ICB	1.00	0900																		X							
ICSA	1.00	0902																									
ICSAB	1.00	0905																		X							
ZZZZZZ	1.00	0907																									
ZZZZZZ	1.00	0909																									
ZZZZZZ	1.00	0911																									
PBS	1.00	0914																		X							
CCV	1.00	0916																		X							
CCB	1.00	0918																		X							
LCSS	1.00	0921																		X							
ZZZZZZ	1.00	0923																									
SV1260203	1.00	0925																		X							
WOD-SS-134	1.00	0928																		X							
WOD-SS-135	1.00	0930																		X							
ICSA	1.00	0932																									
ICSAB	1.00	0935																		X							
CCV	1.00	0937																		X							
CCB	1.00	0939																		X							

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0327__

Instrument ID Number: OPTIMA_1A Method: P___

Start Date: 02/28/03 End Date: 02/28/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1048																				X				
S1	1.00	1050																				X				
S2	1.00	1053																				X				
S3	1.00	1055																				X				
ZZZZZZ	1.00	1057																								
ICV	1.00	1100																				X				
ICB	1.00	1102																				X				
ICSA	1.00	1104																								
ICSAB	1.00	1107																				X				
ZZZZZZ	1.00	1109																								
ZZZZZZ	1.00	1111																								
ZZZZZZ	1.00	1113																								
PBS	1.00	1116																				X				
CCV	1.00	1118																				X				
CCB	1.00	1120																				X				
LCSS	1.00	1123																				X				
ZZZZZZ	1.00	1125																								
SV1260203	1.00	1127																				X				
WOD-SS-134	1.00	1130																				X				
WOD-SS-135	1.00	1132																				X				
ICSA	1.00	1134																								
ICSAB	1.00	1137																				X				
CCV	1.00	1139																				X				
CCB	1.00	1141																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0327

Instrument ID Number: COMM_FIMS_____ Method: CV

Start Date: 02/28/03___ End Date: 02/28/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1157																X								
S0.2	1.00	1158																X								
S1	1.00	1200																X								
S2	1.00	1201																X								
S5	1.00	1202																X								
S10	1.00	1204																X								
ICV	1.00	1205																X								
ICB	1.00	1206																X								
PBS	1.00	1208																X								
LCSS	1.00	1209																X								
ZZZZZZ	1.00	1210																								
SV1260203	1.00	1212																X								
WOD-SS-134	1.00	1213																X								
WOD-SS-135	1.00	1214																X								
ZZZZZZ	1.00	1216																								
ZZZZZZ	1.00	1217																								
CCV	1.00	1218																X								
CCB	1.00	1220																X								

Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-126-0203	0.17	U	Aluminum	23743	-0.84	11100	-0.39	na	UJ
Barium	WOD-SU-126-0203	27.1		Aluminum	23743	-0.325	11100	-0.15	na	na
Cadmium	WOD-SU-126-0203	0.039	U	Aluminum	23743	-0.065	11100	-0.03	na	UJ
Cobalt	WOD-SU-126-0203	2.4		Aluminum	23743	0.185	11100	0.09	na	na
Chromium	WOD-SU-126-0203	9.6		Aluminum	23743	-0.07	11100	-0.03	na	na
Lead	WOD-SU-126-0203	4.4		Aluminum	23743	0.325	11100	0.15	na	na
Manganese	WOD-SU-126-0203	37.7		Aluminum	23743	-0.14	11100	-0.07	na	na
Nickel	WOD-SU-126-0203	5.4		Aluminum	23743	0.285	11100	0.13	na	na
Potassium	WOD-SU-126-0203	284		Aluminum	23743	8.385	11100	3.92	na	na
Sodium	WOD-SU-126-0203	20.5		Aluminum	23743	4.17	11100	1.95	na	na
Thallium	WOD-SU-126-0203	0.17	U	Aluminum	23743	0.64	11100	0.30	na	na
Vanadium	WOD-SU-126-0203	15		Aluminum	23743	-0.435	11100	-0.20	na	na

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Affected Analyte	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action	Validation Action
Antimony	WOD-SU-126-0203	0.17	U	Iron	8387	-0.84	8540	-0.86	na	UJ
Barium	WOD-SU-126-0203	27.1		Iron	8387	-0.325	8540	-0.33	na	na
Cadmium	WOD-SU-126-0203	0.039	U	Iron	8387	-0.065	8540	-0.07	na	UJ
Cobalt	WOD-SU-126-0203	2.4		Iron	8387	0.185	8540	0.19	na	na
Chromium	WOD-SU-126-0203	9.6		Iron	8387	-0.07	8540	-0.07	na	na
Lead	WOD-SU-126-0203	4.4		Iron	8387	0.325	8540	0.33	na	na
Manganese	WOD-SU-126-0203	37.7		Iron	8387	-0.14	8540	-0.14	na	na
Nickel	WOD-SU-126-0203	5.4		Iron	8387	0.285	8540	0.29	na	na
Potassium	WOD-SU-126-0203	284		Iron	8387	8.385	8540	8.54	na	na
Sodium	WOD-SU-126-0203	20.5		Iron	8387	4.17	8540	4.25	J K	na
Thallium	WOD-SU-126-0203	0.17	U	Iron	8387	0.64	8540	0.65	na	na
Vanadium	WOD-SU-126-0203	15		Iron	8387	-0.435	8540	-0.44	na	na

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TETRA TECH NUS

PHIL- 17111

TO: GARTH GLENN **DATE:** MAY 1, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA VALIDATION – VOLATILES
ADAS SITE – NASA WALLOPS ISLAND, VIRGINIA
SDG B0342

SAMPLES: 6/Aqueous/

WFF10-GW3	WFF10-GWDUP11
WFF10-GW43	RB-022803
WFF10-RW2	TB-022703

OVERVIEW

The sample set for the CTO 848 ADAS Site, SDG B0342 consists of four aqueous environmental samples (designated WFF10-), one rinsate blank (designated RB-), and one trip blank (designated TB-). All samples were analyzed for Target Compound List (TCL) Volatile Organic Compounds (VOCs). One set of field duplicates (WFF10-RW2/WFF10-GWDup11) was included in this sample set.

The samples were collected by Tetra Tech NUS on February 27 and 28, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 8260B.

SUMMARY

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, GC/MS tuning and calibration data, laboratory and field quality control (QC) blank results, system monitoring compound recoveries, matrix spike/matrix spike duplicate results, laboratory control spike results, internal standards performance, compound identification, and compound quantitation.

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the aqueous laboratory or field quality control (QC) blanks in at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Water)
Acetone*	40 ug/L	400 ug/L
Methylene Chloride*	63 ug/L	630 ug/L

* Indicates that analyte was detected at the maximum concentration in a field QC blank.

Samples affected: The action levels apply to all aqueous environmental samples. Field QC blanks are not appropriate to qualify from laboratory blanks during data validation.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. Positive results for methylene chloride in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The initial calibration for acetone exhibited a percent relative standard deviation (%RSD) exceeding the QC limit of +30% for all aqueous samples. All positive results for acetone in associated samples were qualified as estimated (J).

NOTES

The matrix spike recovery for bromomethane exceeded the upper QC limit of 122%. No action was taken on this data alone.

The field duplicate pair WFF10-RW2 and WFF10-GWDUP11 exhibited acceptable field duplicate precision.

EXECUTIVE SUMMARY

Laboratory Performance: Acetone and methylene chloride were detected in the field QC blanks. Initial calibration %RSD exceeded the upper QC limit for one compound. The MS recovery exceeded the upper QC limit for one compound.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "National Functional Guidelines for Organic Data Review" (10/99), as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND DATA
SDG B0342 - AQUEOUS SAMPLES
ADVANCED DATA ACQUISITION SUPPORT FACILITY (ADAS)
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WFF10-GW3			WFF10-GW43			WFF10-RW2			WFF10-GWDUP11			RB-022803			TB-022703		
Laboratory ID:	B0342-03A			B0342-02A			B0342-04A			B0342-05A			B0342-06A			B0342-01A		
Sample Date:	02/27/03			02/27/03			02/27/03			02/27/03			02/28/03			02/27/03		
Duplicate:							WFF10-GWDUP11			WFF10-RW2								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2-Trichlo-1,2,2-trifluor	1	U		1	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U		1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U		5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U		5	U		5	U		5	U	
Acetone	5	U		5	U		5	U		5	U		5	U		5	U	
Benzene	1	U		1	U		1	U		1	U		8	J	C	40	J	C
Bromodichloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U		1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U		1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U		1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U		1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U		1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U		1	U		1	U		1	U	
Chloroform	1	U		1	U		2			2			1	U		1	U	
Chloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U		1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Ethylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
Isopropylbenzene	1	U		1	U		1	U		1	U		1	U		1	U	
m,p-xylene	1	U		1	U		1	U		1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U		1	U		1	U		1	U		1	U	
Methylcyclohexane	1	U		1	U		1	U		1	U		1	U		1	U	
Methylene Chloride	1	B	B	2	U		2	U		2	U		3			63		
o-xylene	1	U		1	U		1	U		1	U		1	U		1	U	
Styrene	1	U		1	U		1	U		1	U		1	U		1	U	
Tetrachloroethene	1			1			1	U		1	U		1	U		1	U	
Toluene	1	U		1	U		1	U		1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U		1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U		1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U		1	U		1	U		1	U	
Xylene (Total)	1	U		1	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND DATA
SDG B0342 - AQUEOUS SAMPLES
ADVANCED DATA ACQUISITION SUPPORT FACILITY (ADAS)
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:

B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\ADAS\OV_B0342.DBF data retrieved on: 05/01/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5212

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	JB
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

3/12/03

000001

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5212

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

3/20/03

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF10-GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5212

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW43

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5210

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GW43

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5210

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF10-GW43

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5210

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-RW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5215

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	2	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

000023

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-RW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5215

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF10-RW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5215

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GWDUP11

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5216

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	2	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF10-GWDUP11

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5216

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF10-GWDUP11

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5216

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5217

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	8	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-022803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5217

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-022803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5217

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5211

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	40	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	63	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-022703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5211

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-022703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: B0342-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5211

Level: (low/med) LOW Date Received: 03/01/03

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE: 412 921 7090	LAB PROJECT #: B0342
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX: 412 921 4040	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA 15220		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	ETO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl TCL VOC												COMMENTS
									REQUESTED ANALYSES												
TB-022703	2/27/03 0730		X	X			01	2	2												Trip Blank
WFF10-GW43	2/27/03 1245		X	X			02	1	1												Limited volume
WFF10-GW3	2/27/03 1425		X	X			03	6	6												DO MS/MSD
WFF10-RW2	2/27/03 1635		X	X			04	2	2												
WFF10-GW Dup11	2/27/03 1735		X	X			05	2	2												
RB-022803	2/28/03 0730		X	X			06	2	2												Rinsate Blank
	/																				
	/																				
	/																				
	/																				
	/																				
	/																				

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	2/28/03 1730	[signature]	3/1/03 09:30	Trip and Rinsate Blanks were poured using Laboratory supplied water. Samples shipped via Federal Express Airbill NO 8286 8470 8081	2°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for six aqueous samples that were collected on February 27, 2003, and received at Mitkem on March 1, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

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Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF10-GW43. Spike recoveries were within the QC limits with the exception of high recovery of bromomethane in the matrix spike. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/20/03

3/20/03

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Instrument ID: V2 Calibration Date(s): 02/26/03 02/26/03

Heated Purge: (Y/N) N Calibration Time(s): 1249 1512

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5114 RRF20 =V2F5118
RRF50 =V2F5113 RRF100=V2F5117 RRF200=V2F5116

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.372	0.293	0.292	0.298	0.284	0.308	11.7
Chloromethane	*	0.520	0.413	0.405	0.410	0.381	0.426	12.7*
Vinyl Chloride		0.388	0.309	0.310	0.313	0.294	0.323	11.5
Bromomethane		0.248	0.188	0.184	0.155	0.133	0.182	23.8
Chloroethane		0.208	0.158	0.162	0.146	0.132	0.161	17.6
Trichlorofluoromethane		0.341	0.274	0.278	0.287	0.285	0.293	9.3
1,1-Dichloroethene		0.225	0.211	0.218	0.215	0.205	0.215	3.5
Acetone		0.127	0.075	0.061	0.064	0.055	0.076	38.3
Carbon Disulfide		0.904	0.711	0.721	0.718	0.691	0.749	11.7
Methylene Chloride		0.272	0.235	0.233	0.225	0.219	0.237	8.7
trans-1,2-Dichloroethene		0.245	0.236	0.237	0.229	0.220	0.233	4.0
Methyl tert-butyl ether		0.664	0.536	0.556	0.536	0.495	0.557	11.4
1,1-Dichloroethane	*	0.489	0.486	0.495	0.484	0.471	0.485	1.8*
2-Butanone		0.132	0.108	0.100	0.099	0.092	0.106	14.4
cis-1,2-Dichloroethene		0.290	0.277	0.277	0.273	0.259	0.275	4.0
Chloroform		0.448	0.447	0.458	0.448	0.429	0.446	2.4
1,1,1-Trichloroethane		0.369	0.361	0.373	0.362	0.355	0.364	1.9
Carbon Tetrachloride		0.301	0.297	0.311	0.307	0.302	0.304	1.8
1,2-Dichloroethane		0.314	0.316	0.323	0.307	0.284	0.309	4.9
Benzene		1.017	1.006	1.020	0.982	0.900	0.985	5.0
Trichloroethene		0.245	0.248	0.244	0.248	0.240	0.245	1.4
1,2-Dichloropropane		0.249	0.249	0.254	0.242	0.228	0.244	4.2
Bromodichloromethane		0.336	0.339	0.348	0.340	0.335	0.340	1.6
cis-1,3-Dichloropropene		0.403	0.414	0.430	0.423	0.415	0.417	2.5
4-Methyl-2-pentanone		0.315	0.206	0.204	0.206	0.198	0.226	22.1
Toluene		0.985	0.992	1.018	0.986	0.908	0.978	4.2
trans-1,3-Dichloropropene		0.332	0.352	0.378	0.368	0.359	0.358	4.8
1,1,2-Trichloroethane		0.196	0.200	0.200	0.195	0.192	0.197	1.6
Tetrachloroethene		0.319	0.310	0.296	0.305	0.296	0.305	3.2
2-Hexanone		0.242	0.193	0.195	0.208	0.202	0.208	9.6
Dibromochloromethane		0.364	0.360	0.352	0.358	0.358	0.358	1.2
1,2-Dibromoethane		0.303	0.315	0.311	0.322	0.319	0.314	2.3
Chlorobenzene	*	0.955	0.950	0.941	0.897	0.809	0.910	6.7*
Ethylbenzene		0.486	0.494	0.497	0.488	0.447	0.482	4.2
m,p-Xylene		0.608	0.614	0.603	0.563	0.521	0.582	6.8
o-Xylene		0.596	0.599	0.605	0.568	0.522	0.578	5.9
Xylene (Total)		0.604	0.609	0.603	0.565	0.521	0.580	6.5

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM VI VOA

* Positive detections for acetone are estimated (J).
MWL 3/26/03

OLM03.0

000069

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix Spike - EPA Sample No.: WFF10-GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50	0.0	42	84	48-135
Chloromethane	50	0.0	46	92	60-118
Vinyl Chloride	50	0.0	48	96	65-113
Bromomethane	50	0.0	64	128*	73-122
Chloroethane	50	0.0	55	110	72-118
Trichlorofluoromethane	50	0.0	54	108	68-129
1,1-Dichloroethene	50	0.0	55	110	67-121
Acetone	50	0.0	48	96	38-161
Carbon Disulfide	50	0.0	56	112	53-137
Methylene Chloride	50	1	56	110	59-132
trans-1,2-Dichloroethen	50	0.0	58	116	71-124
Methyl tert-butyl ether	50	0.0	52	104	75-123
1,1-Dichloroethane	50	0.0	50	100	83-116
2-Butanone	50	0.0	50	100	64-139
cis-1,2-Dichloroethene	50	0.0	52	104	83-120
Chloroform	50	0.0	55	110	89-118
1,1,1-Trichloroethane	50	0.0	53	106	81-122
Carbon Tetrachloride	50	0.0	55	110	79-125
1,2-Dichloroethane	50	0.0	52	104	83-123
Benzene	50	0.0	54	108	81-120
Trichloroethene	50	0.0	52	104	77-121
1,2-Dichloropropane	50	0.0	50	100	81-116
Bromodichloromethane	50	0.0	52	104	90-114
cis-1,3-Dichloropropene	50	0.0	46	92	78-119
4-Methyl-2-pentanone	50	0.0	40	80	57-138
Toluene	50	0.0	54	108	81-121
trans-1,3-Dichloroprope	50	0.0	49	98	85-118
1,1,2-Trichloroethane	50	0.0	56	112	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

* no action on MS/MSD data alone MK 3/26/03

COMMENTS:

000031

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0342

Matrix: (soil/water) WATER Lab Sample ID: V2B0303A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5202

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/03/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 19, 2003**

FROM: **BERNARD F SPADA III** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOC/SVOC/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG B0354

SAMPLES: 5/Aqueous

MW-1	MW-53S	MW-54S
MW-59S	TB-030303*	

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0354 consists of one (1) trip blank, and four (4) environmental aqueous samples. The environmental samples were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on March 3 and 4, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- The volatile initial calibration performed on February 20 exceeded the 30% (but was <50%) difference quality control criteria for acetone. The positive result for acetone in sample TB-030303 was qualified as estimated (J).

- The volatile continuing calibration performed on March 12 at 12:35 exceeded the 25% (but was <50%) difference quality control criteria for dichlorodifluoromethane, acetone, 2-butanone, 4-methyl-2-pentanone, 2-hexanone, 1,2-dibromo-3-chloropropane, and methyl acetate. The positive result for acetone in the trip blank was qualified as estimated (J). No qualifications were assigned to the remainder of the aforementioned compounds because they were all non-detected.

- The semivolatile initial calibration performed on March 12 exceeded the 30% (and was >50%)

relative percent difference (RPD) quality control criteria for 3-nitroaniline. All results for 3-nitroaniline were qualified as estimated (UJ).

- The semivolatile continuing calibration performed on March 21 at 14:41 exceeded the 25% (and was >50%) difference quality control criteria for 4-chloroaniline. All results for 4-chloroaniline were qualified as estimated (UJ).

- The percent recovery of hexachlorocyclopentadiene was below the laboratory's quality control criteria in the blank spike and blank spike duplicate. The results for hexachlorocyclopentadiene were qualified as estimated (UJ).

Notes

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The laboratory omitted the second page of the volatile continuing calibration performed on February 20 at 12:35 from the data package. The laboratory submitted the form upon request.

The recoveries of chloromethane and vinyl chloride exceeded the laboratory's percent recovery quality control criteria in the volatile blank spike. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The recovery of 1,2-dibromo-3-chloropropane was below the laboratory's percent recovery quality control criteria in the volatile blank spike. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The semivolatile initial calibration performed on March 12 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for 4-chloroaniline. No qualifications were made on this basis because all results for 4-chloroaniline were non-detected.

The semivolatile continuing calibration performed on March 21 at 10:41 exceeded the 25% (but was <50%) percent difference quality control criteria for 2,2'-oxybis(1-chloropropane), hexachlorocyclopentadiene, 3-nitroaniline, 2,4-dinitrophenol, and 4-nitroaniline. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected.

The semivolatile blank spike/blank spike duplicate exceeded the laboratory's percent recovery quality control criteria for isophorone. No qualifications were made on this basis because the results for isophorone were non-detected.

The semivolatile blank spike was below the laboratory's percent recovery quality control criteria for 2,4-dimethylphenol. No qualifications were made on this basis because the blank spike duplicate was compliant.

The semivolatile blank spike/blank spike duplicate exceeded the laboratory's RPD quality control criteria for 3-nitroaniline. No qualifications were made on this basis because the percent recoveries were compliant.

Acetone and methylene chloride were detected in the trip blank. No qualifications were made on this basis.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances and blank spike recovery non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-1
samp_date	3/3/2003
lab_id	B0354-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1		

nsample	MW-1
samp_date	3/3/2003
lab_id	B0354-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	MW-53S
samp_date	3/4/2003
lab_id	B0354-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-53S
samp_date	3/4/2003
lab_id	B0354-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	B0354-05A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	B0354-05A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-59S
samp_date	3/4/2003
lab_id	B0354-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	MW-59S
samp_date	3/4/2003
lab_id	B0354-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-030303
samp_date	3/3/2003
lab_id	B0354-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	23	J	C
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	TB-030303
samp_date	3/3/2003
lab_id	B0354-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	49		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-1
samp_date	3/3/2003
lab_id	B0354-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	MW-1
samp_date	3/3/2003
lab_id	B0354-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	MW-53S
samp_date	3/4/2003
lab_id	B0354-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-53S
samp_date	3/4/2003
lab_id	B0354-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	7		
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	B0354-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	B0354-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5		
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-59S	nsample	MW-59S
samp_date	3/4/2003	samp_date	3/4/2003
lab_id	B0354-04E	lab_id	B0354-04E
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5		
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION: P

nsample	MW-1
samp_date	3/3/2003
lab_id	B0354-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	MW-53S
samp_date	3/4/2003
lab_id	B0354-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	B0354-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION: P

nsample	MW-59S
samp_date	3/4/2003
lab_id	B0354-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5203

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5203

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5203

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5204

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5204

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5204

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5206

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5206

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5206

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5205

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5205

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5205

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5202

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	23	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	49	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5202

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-030303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5202

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2483

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2483

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2483

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	20.16	5	J
2.		UNKNOWN	20.32	13	J
3.		UNKNOWN	25.78	5	J
4.		UNKNOWN	27.57	10	J
5.		UNKNOWN	29.01	7	J
6.		UNKNOWN	30.02	5	J
7.					
8.					
9.					
10.					
11.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2484

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2484

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	7	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2484

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	314-40-9	BROMACIL	17.92	87	NJ
2.		UNKNOWN	20.28	7	J
3.					
4.					
5.					
6.					
7.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2486

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2486

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2486

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2485

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2485

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2485

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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9.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9788F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/05/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9789F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/05/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-54S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9791F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/05/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW-59S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9790F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/05/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.

-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
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Foster Plaza 7
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Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

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The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0354

HOLDING TIME
05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	MW-1	203171-001	NORMAL	B0354	CL	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	CL	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	CL	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	CL	03/04/03	/ /	03/06/03	0	0	2
%	LCSW	0308LCSW	LCS	B0354	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	MW-1	B0354-02D	NORMAL	B0354	HG	03/03/03	03/08/03	03/10/03	5	2	7
UG/L	MW-53S	B0354-03D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-54S	B0354-05D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-59S	B0354-04D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	PBW	0308PBW	M_BLANK	B0354	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	MW-1F	B0354-06A	NORMAL	B0354	HGF	03/03/03	03/08/03	03/10/03	5	2	7
UG/L	MW-53S-F	B0354-07A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-54S-F	B0354-09A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-59S-F	B0354-08A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
%	LCSW	0308LCSW	LCS	B0354	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	MW-1	B0354-02D	NORMAL	B0354	M	03/03/03	03/08/03	03/09/03	5	1	6
UG/L	MW-53S	B0354-03D		B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-54S	B0354-05D	NORMAL	B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-59S	B0354-04D	NORMAL	B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	PBW	0308PBW	M_BLANK	B0354	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	MW-1F	B0354-06A	NORMAL	B0354	MF	03/03/03	03/08/03	03/09/03	5	1	6
UG/L	MW-53S-F	B0354-07A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-54S-F	B0354-09A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-59S-F	B0354-08A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	MW-1	203171-001	NORMAL	B0354	NTA	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-1	203171-001		B0354	NTI	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
UG/L	MW-1	B0354-02E	NORMAL	B0354	OS	03/03/03	03/07/03	03/21/03	4	14	18
%	MW-53S	B0354-03E	NORMAL	B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	MW-54S	B0354-05E		B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	MW-59S	B0354-04E	NORMAL	B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	SBLK3B	MB-5973	M_BLANK	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCS	LCS-5973	LCS	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCSD	LCSD-5973	LCSD	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	MW-1	B0354-02A	NORMAL	B0354	OV	03/03/03	03/12/03	03/12/03	9	0	9
%	MW-53S	B0354-03A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
%	MW-54S	B0354-05A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
UG/L	MW-59S	B0354-04A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
%	TB-030303	B0354-01A	NORMAL	B0354	OV	03/03/03	03/12/03	03/12/03	9	0	9
%	VBLK6N	V6B0312A	M_BLANK	B0354	OV	/ /	03/12/03	03/12/03	0	0	0
%	VBLK6NLCS	V6L0312A	LCS	B0354	OV	/ /	03/12/03	03/12/03	0	0	0
%	BBLK1D	MB-5974	M_BLANK	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCS	LCS-5975	LCS	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCSD	LCSD-5975	LCSD	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	MW-1	B0354-02E	NORMAL	B0354	PCB	03/03/03	03/07/03	03/10/03	4	3	7
%	MW-53S	B0354-03E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	MW-54S	B0354-05E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6
%	MW-59S	B0354-04E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6
MG/L	MW-1	203171-001	NORMAL	B0354	SO4	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002		B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
%	LCS--6204	LCS--6204	LCS	B0354	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB--6204	MB--6204	M_BLANK	B0354	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MW-1	B0354-02B	NORMAL	B0354	TOC	03/03/03	03/18/03	03/18/03	15	0	15
MG/L	MW-53S	B0354-03B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14
MG/L	MW-54S	B0354-05B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14
MG/L	MW-59S	B0354-04B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0354

Mitkem Project ID: B0354

March 25, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for nine aqueous samples that were collected on March 4, 2003, and received at Mitkem on March 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of chloromethane and vinyl chloride and low recovery of 1,2-dibromo-3-chloropropane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 2,4-dimethylphenol and hexachlorocyclopentadiene in the lab control sample and high recovery isophorone and low recovery of hexachlorocyclopentadiene in the lab control sample duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: 30354
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vials HCl	TAL VOC + MTBE 1 Liter Amber Glass	TAL SVOC 1 Liter Amber Glass	TAL PEST 500 ml Poly	TAL Metals 500 ml Poly HNO3	Sulfate, Nitrate, Chloride 500 ml Poly HNO3	Dissolved Metals 40 ml VOA vials HCl	TAL	COMMENTS
TB-030303	3/3/03 1325		X	X			01	2	2								Trip Blank
MW-1	3/3/03 1545		X	X			02	8	2	1	1	1	1		2		
MW-53S	3/4/03 0920		X	X			03	8	2	1	1	1	1		2		
MW-59S	3/4/03 1245		X	X			04	8	2	1	1	1	1		2		
MW-54S	3/4/03 1550		X	X			05	8	2	1	1	1	1		2		
MW-1F	3/3/03 1545		X	X			06	1						1			
MW-53SF	3/4/03 0920		X	X			07	1						1			
MW-59S-F	3/4/03 1245		X	X			08	1						1			
MW-54S-F	3/4/03 1550		X	X			09	1						1			
	/																
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		3/4/03 1700		3-5-03 0900	Shipped via Federal Express Airbill NO 8286 8464 5186 Blank water and Bottles provided by the Lab	30
		/		/		
		/		/		

6000

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID: V6C5020 BFB Injection Date: 02/20/03

Instrument ID: V6 BFB Injection Time: 0926

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.2
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	8.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	97.5
175	5.0 - 9.0% of mass 174	6.8 (6.9)1
176	95.0 - 101.0% of mass 174	97.3 (99.7)1
177	5.0 - 9.0% of mass 176	7.6 (7.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506H	V6S0220A	V6C5021	02/20/03	0952
02	VSTD0056H	V6S0220B	V6C5022	02/20/03	1042
03	VSTD2006H	V6S0220D	V6C5024	02/20/03	1141
04	VSTD1006H	V6S0220E	V6C5025	02/20/03	1212
05	VSTD0206H	V6S0220F	V6C5026	02/20/03	1242
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Styrene	0.954	1.080	1.091	1.074	1.061	1.052	5.3
*	Bromoform	0.213	0.231	0.257	0.231	0.229	0.232	6.8*
	Isopropylbenzene	1.532	1.587	1.452	1.479	1.396	1.489	4.9
*	1,1,2,2-Tetrachloroethane	0.549	0.600	0.643	0.553	0.542	0.577	7.5*
	1,3,5-Trimethylbenzene	2.373	2.532	2.271	2.375	2.311	2.372	4.2
	1,2,4-Trimethylbenzene	2.470	2.594	2.412	2.400	2.316	2.438	4.2
	1,3-Dichlorobenzene	1.469	1.567	1.477	1.493	1.482	1.498	2.7
	1,4-Dichlorobenzene	1.583	1.616	1.529	1.504	1.461	1.539	4.0
	1,2-Dichlorobenzene	1.360	1.468	1.427	1.398	1.381	1.407	3.0
	1,2-Dibromo-3-chloropropane	0.106	0.096	0.116	0.092	0.088	0.100	11.1
	1,2,4-Trichlorobenzene	0.957	0.967	0.925	0.901	0.912	0.932	3.1
	1,1,2-Trichlo-1,2,2-trifluor	0.467	0.504	0.378	0.451	0.423	0.445	10.6
	Methyl Acetate	0.194	0.197	0.202	0.167	0.155	0.183	11.3
	Cyclohexane	0.415	0.407	0.362	0.411	0.402	0.399	5.4
	Methylcyclohexane	0.448	0.458	0.424	0.468	0.465	0.453	3.9
	Dibromofluoromethane	0.204	0.266	0.277	0.271	0.262	0.256	11.6
	1,2-Dichloroethane-d4	0.047	0.060	0.065	0.058	0.057	0.057	11.1
	Toluene-d8	0.916	1.191	1.162	1.179	1.055	1.101	10.6
	Bromofluorobenzene	0.345	0.421	0.444	0.432	0.413	0.411	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK6N	97	86	109	94	0
02	V6NLCS	107	97	112	106	0
03	TB-030303	96	84	113	88	0
04	MW-1	97	84	113	88	0
05	MW-53S	98	85	114	88	0
06	MW-59S	97	83	113	88	0
07	MW-54S	98	86	112	86	0
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		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER(BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID: V6C5190A BFB Injection Date: 03/12/03

Instrument ID: V6 BFB Injection Time: 1209

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.6
75	30.0 - 60.0% of mass 95	58.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	5.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	99.6
175	5.0 - 9.0% of mass 174	7.1 (7.1)1
176	95.0 - 101.0% of mass 174	100.2 (100.6)1
177	5.0 - 9.0% of mass 176	7.0 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0506N	V6S0312A	V6C5191	03/12/03	1235
02	VBLK6N	V6B0312A	V6C5192	03/12/03	1311
03	V6NLCS	V6L0312A	V6C5194	03/12/03	1413
04	TB-030303	B0354-01A	V6C5202	03/12/03	1838
05	MW-1	B0354-02A	V6C5203	03/12/03	1905
06	MW-53S	B0354-03A	V6C5204	03/12/03	1932
07	MW-59S	B0354-04A	V6C5205	03/12/03	2000
08	MW-54S	B0354-05A	V6C5206	03/12/03	2027
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: V6 Calibration Date: 03/12/03 Time: 1235

Lab File ID: V6C5191 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.215	0.281	0.01	30.7	20.0	<-
Chloromethane	0.393	0.448	0.1	14.0	20.0	
Vinyl Chloride	0.432	0.475	0.01	10.0	20.0	
Bromomethane	0.380	0.444	0.01	16.8	20.0	
Chloroethane	0.295	0.310	0.01	5.1	20.0	
Trichlorofluoromethane	0.658	0.689	0.01	4.7	20.0	
1,1-Dichloroethene	0.440	0.455	0.01	3.4	20.0	
Acetone	0.099	0.065	0.01	34.3	20.0	<-
Carbon Disulfide	0.762	0.781	0.01	2.5	20.0	
Methylene Chloride	0.276	0.258	0.01	6.5	20.0	
trans-1,2-Dichloroethene	0.279	0.263	0.01	5.7	20.0	
Methyl tert-butyl ether	0.755	0.578	0.01	23.4	20.0	<-
1,1-Dichloroethane	0.456	0.431	0.1	5.5	20.0	
2-Butanone	0.088	0.063	0.01	28.4	20.0	<-
cis-1,2-Dichloroethene	0.289	0.267	0.01	7.6	20.0	
Chloroform	0.489	0.463	0.01	5.3	20.0	
1,1,1-Trichloroethane	0.387	0.395	0.01	2.1	20.0	
Carbon Tetrachloride	0.401	0.385	0.01	4.0	20.0	
1,2-Dichloroethane	0.376	0.332	0.01	11.7	20.0	
Benzene	1.025	0.992	0.01	3.2	20.0	
Trichloroethene	0.296	0.274	0.01	7.4	20.0	
1,2-Dichloropropane	0.257	0.236	0.01	8.2	20.0	
Bromodichloromethane	0.371	0.347	0.01	6.5	20.0	
cis-1,3-Dichloropropene	0.423	0.384	0.01	9.2	20.0	
4-Methyl-2-pentanone	0.167	0.123	0.01	26.3	20.0	<-
Toluene	1.113	1.079	0.01	3.0	20.0	
trans-1,3-Dichloropropene	0.382	0.335	0.01	12.3	20.0	
1,1,2-Trichloroethane	0.215	0.180	0.01	16.3	20.0	
Tetrachloroethene	0.317	0.293	0.01	7.6	20.0	
2-Hexanone	0.136	0.098	0.01	27.9	20.0	<-
Dibromochloromethane	0.355	0.300	0.01	15.5	20.0	
1,2-Dibromoethane	0.282	0.223	0.01	20.9	20.0	<-
Chlorobenzene	0.979	0.903	0.3	7.8	20.0	
Ethylbenzene	0.509	0.471	0.01	7.5	20.0	
m,p-Xylene	0.638	0.594	0.01	6.9	20.0	
o-Xylene	0.640	0.592	0.01	7.5	20.0	
Xylene (Total)	0.639	0.593	0.01	7.2	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: V6 Calibration Date: 03/12/03 Time: 1235

Lab File ID: V6C5191 Init. Calib. Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.052	0.988	0.01	6.1	20.0	
Bromoform	0.232	0.191	0.1	17.7	20.0	
Isopropylbenzene	1.489	1.411	0.01	5.2	20.0	
1,1,2,2-Tetrachloroethane	0.577	0.456	0.3	21.0	20.0	<-
1,3,5-Trimethylbenzene	2.372	2.212	0.01	6.7	20.0	
1,2,4-Trimethylbenzene	2.438	2.312	0.01	5.2	20.0	
1,3-Dichlorobenzene	1.498	1.404	0.01	6.3	20.0	
1,4-Dichlorobenzene	1.539	1.428	0.01	7.2	20.0	
1,2-Dichlorobenzene	1.407	1.288	0.01	8.4	20.0	
1,2-Dibromo-3-chloropropane	0.100	0.069	0.01	31.0	20.0	<-
1,2,4-Trichlorobenzene	0.932	0.813	0.01	12.8	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.445	0.458	0.01	2.9	20.0	
Methyl Acetate	0.183	0.120	0.01	34.4	20.0	<-
Cyclohexane	0.399	0.365	0.01	8.5	20.0	
Methylcyclohexane	0.453	0.402	0.01	11.2	20.0	
Dibromofluoromethane	0.256	0.266	0.01	3.9	20.0	
1,2-Dichloroethane-d4	0.057	0.054	0.01	5.3	20.0	
Toluene-d8	1.101	1.187	0.01	7.8	20.0	
Bromofluorobenzene	0.411	0.422	0.01	2.7	20.0	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: V6B0312A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5192

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK6N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: V6B0312A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5192

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK6N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: V6B0312A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5192

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: V6NLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		67	134	48-135
Chloromethane	50		64	128*	60-118
Vinyl Chloride	50		58	116*	65-113
Bromomethane	50		54	108	73-122
Chloroethane	50		52	104	72-118
Trichlorofluoromethane	50		55	110	68-129
1,1-Dichloroethene	50		56	112	67-121
Acetone	50		31	62	38-161
Carbon Disulfide	50		50	100	53-137
Methylene Chloride	50		48	96	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		39	78	75-123
1,1-Dichloroethane	50		50	100	83-116
2-Butanone	50		36	72	64-139
cis-1,2-Dichloroethene	50		49	98	83-120
Chloroform	50		51	102	89-118
1,1,1-Trichloroethane	50		54	108	81-122
Carbon Tetrachloride	50		52	104	79-125
1,2-Dichloroethane	50		48	96	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		49	98	77-121
1,2-Dichloropropane	50		51	102	81-116
Bromodichloromethane	50		50	100	90-114
cis-1,3-Dichloropropene	50		47	94	78-119
4-Methyl-2-pentanone	50		38	76	57-138
Toluene	50		52	104	81-121
trans-1,3-Dichloroprope	50		46	92	85-118
1,1,2-Trichloroethane	50		46	92	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: V6NLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		50	100	73-121
2-Hexanone	50		37	74	53-145
Dibromochloromethane	50		46	92	80-124
1,2-Dibromoethane	50		43	86	80-124
Chlorobenzene	50		49	98	82-118
Ethylbenzene	50		50	100	80-122
Xylene (Total)	150		150	100	81-121
Styrene	50		51	102	77-128
Bromoform	50		45	90	77-130
Isopropylbenzene	50		51	102	58-148
1,1,2,2-Tetrachloroetha	50		42	84	76-125
1,3,5-Trimethylbenzene	50		50	100	76-116
1,2,4-Trimethylbenzene	50		50	100	77-117
1,3-Dichlorobenzene	50		49	98	80-116
1,4-Dichlorobenzene	50		49	98	80-114
1,2-Dichlorobenzene	50		49	98	81-116
1,2-Dibromo-3-chloropro	50		35	70*	71-126
1,2,4-Trichlorobenzene	50		43	86	67-114
1,1,2-Trichlo-1,2,2-tri	50		55	110	70-130
Methyl Acetate	50		36	72	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		47	94	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 3 out of 50 outside limits

COMMENTS: _____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID (Standard): V6C5191 Date Analyzed: 03/12/03

Instrument ID: V6 Time Analyzed: 1235

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	1483642	7.03	1196621	10.77	663251	13.59
	UPPER LIMIT	2967284	7.53	2393242	11.27	1326502	14.09
	LOWER LIMIT	741821	6.53	598311	10.27	331626	13.09
	EPA SAMPLE NO.						
01	VBLK6N	2136845	7.03	1626238	10.77	819887	13.59
02	V6NLCS	1666684	7.02	1362404	10.76	779779	13.59
03	TB-030303	1717750	7.03	1286854	10.77	627143	13.59
04	MW-1	1698704	7.03	1275642	10.77	625876	13.59
05	MW-53S	1644701	7.03	1227433	10.77	602816	13.59
06	MW-59S	1506230	7.03	1136669	10.77	550345	13.59
07	MW-54S	1530771	7.03	1166763	10.77	562429	13.59
08							
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22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0354	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/7/03

Sample ~~MW~~ TB-030303 Methylene Chloride = 49 ug/L

$$MeCl = \frac{(46\,9952)(50\ ug/L)}{(17\,7750)(0.276)} = 49.56\ ug/L$$

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5202

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	23	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	49	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V6C5202

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: not dec. _____ Date Analyzed: 03/12/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v6.i\030312.B\V6C5202.D
Report Date: 20-Mar-2003 10:33

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v6.i\030312.B\V6C5202.D
Lab Smp Id: B0354-01A Client Smp ID: TB-030303
Inj Date : 12-MAR-2003 18:38
Operator : KEN Inst ID: v6.i
Smp Info : TETRA,B0354-01A,TB-030303,V6B0312A,,B0354
Misc Info : 05-MAR-03,,,,,,
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v6.i\030312.B\v68260.m
Meth Date : 20-Mar-2003 10:28 mtl Quant Type: ISTD
Cal Date : 20-FEB-2003 12:42 Cal File: V6C5026.D
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: cto848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	9 Acetone	43	3.845	3.838	(0.547)	79849	23.4941	23
	14 Methylene Chloride	84	4.325	4.325	(0.616)	469952	49.4677	49
$	30 Dibromofluoromethane	113	6.254	6.253	(0.890)	420895	47.8521	48
$	35 1,2-Dichloroethane-d4	102	6.637	6.630	(0.945)	83071	41.9785	42
*	38 Fluorobenzene	96	7.026	7.026	(1.000)	1717750	50.0000	
$	47 Toluene-d8	98	8.918	8.918	(0.828)	1598866	56.4347	56
*	57 Chlorobenzene-d5	117	10.767	10.767	(1.000)	1286854	50.0000	
$	68 Bromofluorobenzene	95	12.215	12.215	(1.134)	464204	43.8839	44
*	81 1,4-Dichlorobenzene-d4	152	13.590	13.590	(1.000)	627143	50.0000	

SB 3/20/03

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: V6 Calibration Date(s): 02/20/03 02/20/03

Heated Purge: (Y/N) N Calibration Time(s): 0952 1242

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V6C5022 RRF20 =V6C5026
RRF50 =V6C5021 RRF100=V6C5025 RRF200=V6C5024

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.221	0.229	0.207	0.218	0.200	0.215	5.3
Chloromethane	*	0.424	0.443	0.343	0.398	0.356	0.393	10.9*
Vinyl Chloride		0.474	0.477	0.394	0.425	0.390	0.432	9.7
Bromomethane		0.472	0.388	0.355	0.358	0.325	0.380	14.8
Chloroethane		0.302	0.312	0.296	0.293	0.270	0.295	5.3
Trichlorofluoromethane		0.688	0.702	0.628	0.659	0.613	0.658	5.8
1,1-Dichloroethene		0.443	0.492	0.416	0.431	0.420	0.440	7.0
Acetone		0.145	0.090	0.121	0.072	0.066	0.099	33.8
Carbon Disulfide		0.806	0.846	0.673	0.768	0.716	0.762	9.0
Methylene Chloride		0.300	0.285	0.279	0.263	0.255	0.276	6.4
trans-1,2-Dichloroethene		0.276	0.284	0.262	0.283	0.289	0.279	3.8
Methyl tert-butyl ether		0.733	0.759	0.825	0.751	0.707	0.755	5.8
1,1-Dichloroethane	*	0.453	0.476	0.459	0.449	0.444	0.456	2.7*
2-Butanone		0.095	0.080	0.108	0.080	0.076	0.088	15.4
cis-1,2-Dichloroethene		0.288	0.287	0.287	0.292	0.289	0.289	0.8
Chloroform		0.477	0.501	0.498	0.489	0.479	0.489	2.2
1,1,1-Trichloroethane		0.385	0.415	0.353	0.390	0.394	0.387	5.8
Carbon Tetrachloride		0.397	0.401	0.370	0.410	0.429	0.401	5.3
1,2-Dichloroethane		0.357	0.380	0.407	0.370	0.365	0.376	5.1
Benzene		0.996	1.052	1.030	1.033	1.012	1.025	2.1
Trichloroethene		0.296	0.303	0.283	0.294	0.303	0.296	2.8
1,2-Dichloropropane		0.246	0.260	0.263	0.258	0.257	0.257	2.6
Bromodichloromethane		0.358	0.380	0.388	0.366	0.364	0.371	3.4
cis-1,3-Dichloropropene		0.393	0.420	0.454	0.424	0.426	0.423	5.1
4-Methyl-2-pentanone		0.159	0.157	0.203	0.161	0.154	0.167	12.2
Toluene		1.086	1.149	1.144	1.120	1.068	1.113	3.2
trans-1,3-Dichloropropene		0.343	0.374	0.422	0.381	0.389	0.382	7.5
1,1,2-Trichloroethane		0.198	0.218	0.235	0.211	0.212	0.215	6.2
Tetrachloroethene		0.329	0.333	0.282	0.319	0.324	0.317	6.4
2-Hexanone		0.134	0.133	0.163	0.129	0.123	0.136	11.4
Dibromochloromethane		0.355	0.359	0.377	0.348	0.336	0.355	4.2
1,2-Dibromoethane		0.276	0.290	0.313	0.271	0.258	0.282	7.4
Chlorobenzene	*	1.035	1.024	0.973	0.948	0.917	0.979	5.1*
Ethylbenzene		0.494	0.536	0.495	0.507	0.511	0.509	3.3
m,p-Xylene		0.620	0.659	0.611	0.645	0.654	0.638	3.4
o-Xylene		0.608	0.648	0.619	0.644	0.681	0.640	4.4
Xylene (Total)		0.616	0.656	0.613	0.645	0.663	0.639	3.6

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
07					
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.466		1.417	1.374	1.349			*
bis(2-Chloroethyl)Ether	*	1.190		1.126	1.078	1.065			*
2-Chlorophenol	*	1.294		1.272	1.255	1.284			*
2-Methylphenol	*	1.128		1.089	1.096	1.140			*
2,2'-oxybis(1-Chloropropane)	*	1.404		1.196	1.142	1.163			*
4-Methylphenol	*	1.124		1.103	1.086	1.098			*
N-Nitroso-di-n-propylamine	*	0.895		0.817	0.843	0.817			*
Hexachloroethane	*	0.620		0.601	0.590	0.606			*
Nitrobenzene	*	0.446		0.423	0.405	0.399			*
Isophorone	*	0.560		0.548	0.535	0.528			*
2-Nitrophenol	*	0.190		0.207	0.208	0.211			*
2,4-Dimethylphenol	*	0.368		0.318	0.327	0.347			*
2,4-Dichlorophenol	*	0.289		0.306	0.321	0.335			*
Naphthalene	*	1.093		1.078	1.120	1.150			*
4-Chloroaniline	*	0.396		0.209	0.204	0.213			*
bis(2-Chloroethoxy)methane	*	0.404		0.397	0.387	0.387			*
Hexachlorobutadiene	*	0.200		0.210	0.216	0.223			*
4-Chloro-3-Methylphenol	*	0.313		0.325	0.332	0.336			*
2-Methylnaphthalene	*	0.877		0.890	0.982	1.015			*
Hexachlorocyclopentadiene	*	0.284		0.296	0.321	0.344			*
2,4,6-Trichlorophenol	*	0.347		0.382	0.383	0.399			*
2,4,5-Trichlorophenol	*		0.375	0.405	0.402	0.423			*
2-Chloronaphthalene	*	1.132		1.161	1.207	1.275			*
2-Nitroaniline	*		0.546	0.539	0.519	0.512			*
Dimethylphthalate	*	1.365		1.371	1.369	1.403			*
Acenaphthylene	*	1.833		1.795	1.781	1.808			*
2,6-Dinitrotoluene	*	0.296		0.307	0.307	0.310			*
3-Nitroaniline	*		0.056	0.108	0.214	0.251			*
Acenaphthene	*	1.158		1.162	1.202	1.255			*
2,4-Dinitrophenol	*		0.123	0.154	0.172	0.183			*
4-Nitrophenol	*		0.239	0.279	0.280	0.271			*
Dibenzofuran	*	2.006		2.129	2.294	2.281			*
2,4-Dinitrotoluene	*	0.378		0.412	0.443	0.448			*
Diethylphthalate	*	1.310		1.335	1.378	1.399			*
4-Chlorophenyl-phenylether	*	0.612		0.666	0.725	0.679			*
Fluorene	*	1.216		1.326	1.457	1.419			*
4-Nitroaniline	*		0.175	0.171	0.164	0.130			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF10 =S3C2281 RRF20 =S3C2283
RRF50 =S3C2279 RRF80 =S3C2284 RRF120=S3C2282

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.133	0.150	0.165	0.169			*
N-Nitrosodiphenylamine (1)	*	0.516		0.395	0.308	0.343			*
4-Bromophenyl-phenylether	*	0.226		0.234	0.244	0.248			*
Hexachlorobenzene	*	0.220		0.228	0.236	0.242			*
Pentachlorophenol	*		0.109	0.136	0.146	0.156			*
Phenanthrene	*	1.087		1.124	1.205	1.236			*
Anthracene	*	1.096		1.089	1.181	1.202			*
Di-n-butylphthalate	*	1.281		1.340	1.389	1.407			*
Fluoranthene	*	1.016		1.111	1.174	1.185			*
Pyrene	*	1.200		1.176	1.222	1.208			*
Butylbenzylphthalate	*	0.592		0.607	0.618	0.619			*
3,3'-Dichlorobenzidine		0.118		0.162	0.157	0.160			
Benzo(a)anthracene	*	1.086		1.066	1.098	1.087			*
Chrysene	*	1.024		1.069	1.098	1.016			*
bis(2-Ethylhexyl)phthalate	*	0.814		0.911	0.950	0.890			*
Di-n-octylphthalate	*	1.921		2.211	2.574	2.649			*
Benzo(b)fluoranthene	*	1.440		1.544	1.703	1.785			*
Benzo(k)fluoranthene	*	1.520		1.618	1.760	1.766			*
Benzo(a)pyrene	*	1.345		1.356	1.452	1.504			*
Indeno(1,2,3-cd)pyrene	*	1.445		1.560	1.451	1.547			*
Dibenzo(a,h)anthracene	*	1.202		1.320	1.255	1.358			*
Benzo(g,h,i)perylene	*	1.185		1.300	1.160	1.241			*
Nitrobenzene-d5		0.456		0.443	0.436	0.430			*
2-Fluorobiphenyl	*	1.509		1.528	1.554	1.607			*
Terphenyl-d14	*	0.894		0.899	0.923	0.907			*
Phenol-d5	*	1.413		1.332	1.293	1.275			*
2-Fluorophenol	*	1.054		1.158	1.121	1.115			*
2,4,6-Tribromophenol	*	0.102		0.112	0.117	0.120			*
2-Chlorophenol-d4	*	1.301		1.293	1.266	1.268			*
1,2-Dichlorobenzene-d4	*	0.916		0.887	0.903	0.933			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.390					1.399	3.2*
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*
2-Chlorophenol	* 1.371					1.295	3.5*
2-Methylphenol	* 1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*
4-Methylphenol	* 1.129					1.108	1.6*
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*
Hexachloroethane	* 0.627					0.609	2.4*
Nitrobenzene	* 0.406					0.416	4.6*
Isophorone	* 0.535					0.541	2.3*
2-Nitrophenol	* 0.219					0.207	5.1*
2,4-Dimethylphenol	* 0.383					0.349	7.8*
2,4-Dichlorophenol	* 0.356					0.321	8.1*
Naphthalene	* 1.196					1.127	4.2*
4-Chloroaniline	* 0.251					0.255	31.9*
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*
Hexachlorobutadiene	* 0.220					0.214	4.2*
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*
2-Methylnaphthalene	* 1.032					0.959	7.5*
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*
2-Chloronaphthalene	* 1.346					1.224	7.1*
2-Nitroaniline	* 0.518					0.527	2.8*
Dimethylphthalate	* 1.415					1.385	1.7*
Acenaphthylene	* 1.879					1.819	2.1*
2,6-Dinitrotoluene	* 0.318					0.308	2.6*
3-Nitroaniline	* 0.274					0.181	52.2*
Acenaphthene	* 1.311					1.218	5.3*
2,4-Dinitrophenol	* 0.201					0.167	17.9*
4-Nitrophenol	* 0.265					0.267	6.2*
Dibenzofuran	* 2.250					2.192	5.6*
2,4-Dinitrotoluene	* 0.456					0.427	7.5*
Diethylphthalate	* 1.413					1.367	3.2*
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*
Fluorene	* 1.325					1.349	7.0*
4-Nitroaniline	* 0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177						0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407						0.394	20.1*
4-Bromophenyl-phenylether	* 0.262						0.243	5.7*
Hexachlorobenzene	* 0.255						0.236	5.7*
Pentachlorophenol	* 0.166						0.143	15.2*
Phenanthrene	* 1.296						1.190	7.1*
Anthracene	* 1.261						1.166	6.3*
Di-n-butylphthalate	* 1.451						1.374	4.8*
Fluoranthene	* 1.230						1.143	7.2*
Pyrene	* 1.223						1.206	1.6*
Butylbenzylphthalate	* 0.629						0.613	2.3*
3,3'-Dichlorobenzidine	0.136						0.147	12.9
Benzo(a)anthracene	* 1.092						1.086	1.1*
Chrysene	* 0.963						1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824						0.878	6.6*
Di-n-octylphthalate	* 2.687						2.408	13.8*
Benzo(b)fluoranthene	* 1.959						1.686	12.1*
Benzo(k)fluoranthene	* 1.683						1.669	6.2*
Benzo(a)pyrene	* 1.582						1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678						1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479						1.323	8.0*
Benzo(g,h,i)perylene	* 1.338						1.245	6.0*
Nitrobenzene-d5	0.436						0.440	2.2*
2-Fluorobiphenyl	* 1.695						1.579	4.7*
Terphenyl-d14	* 0.882						0.901	1.7*
Phenol-d5	* 1.296						1.322	4.2*
2-Fluorophenol	* 1.164						1.122	3.9*
2,4,6-Tribromophenol	* 0.128						0.116	8.5*
2-Chlorophenol-d4	* 1.326						1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981						0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK3B	82	76	101	88	86	89	91	73	0
02	S3BLCS	83	76	102	86	82	90	88	67	0
03	S3BLCSD	86	79	104	91	86	95	92	68	0
04	MW-1	83	75	94	85	82	93	89	65	0
05	MW-53S	80	73	97	78	70	76	82	66	0
06	MW-59S	82	75	95	81	78	84	86	73	0
07	MW-54S	85	79	99	82	77	90	86	73	0
08										
09										
10										
11										
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID: S3C2473 DFTPP Injection Date: 03/21/03

Instrument ID: S3 DFTPP Injection Time: 1020

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	51.2
68	Less than 2.0% of mass 69	0.7 (1.6)1
69	Mass 69 relative abundance	46.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	25.9
365	Greater than 1.0% of mass 198	5.03
441	Present, but less than mass 443	12.7
442	40.0 - 99.9% of mass 198	81.6
443	17.0 - 23.0% of mass 442	15.9 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Z	SS0321A	S3C2474	03/21/03	1041
02	SBLK3B	MB-5973	S3C2477	03/21/03	1248
03	S3BLCS	LCS-5973	S3C2478	03/21/03	1330
04	S3BLCSD	LCSD-5973	S3C2479	03/21/03	1412
05	MW-1	B0354-02E	S3C2483	03/21/03	1700
06	MW-53S	B0354-03E	S3C2484	03/21/03	1742
07	MW-59S	B0354-04E	S3C2485	03/21/03	1825
08	MW-54S	B0354-05E	S3C2486	03/21/03	1906
09					
10					
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22					

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date: 03/21/03 Time: 1041

Lab File ID: S3C2474 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.365	0.050	-2.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.170	0.050	5.2	100
2-Chlorophenol	1.295	1.278	0.050	-1.3	100
2-Methylphenol	1.130	1.112	0.050	-1.6	100
2,2'-oxybis(1-Chloropropane)	1.228	1.582	0.050	28.8	100
4-Methylphenol	1.108	1.104	0.050	-0.4	100
N-Nitroso-di-n-propylamine	0.820	0.848	0.050	3.4	100
Hexachloroethane	0.609	0.632	0.050	3.8	100
Nitrobenzene	0.416	0.388	0.050	-6.7	100
Isophorone	0.541	0.564	0.050	4.2	100
2-Nitrophenol	0.207	0.186	0.050	-10.1	20.0
2,4-Dimethylphenol	0.349	0.286	0.050	-18.0	100
2,4-Dichlorophenol	0.321	0.290	0.050	-9.6	20.0
Naphthalene	1.127	1.064	0.050	-5.6	100
4-Chloroaniline	0.255	0.113	0.050	-55.7	100
bis(2-Chloroethoxy)methane	0.396	0.379	0.050	-4.3	100
Hexachlorobutadiene	0.214	0.186	0.050	-13.1	20.0
4-Chloro-3-Methylphenol	0.331	0.336	0.050	1.5	20.0
2-Methylnaphthalene	0.959	0.934	0.050	-2.6	100
Hexachlorocyclopentadiene	0.323	0.181	0.050	-44.0	100
2,4,6-Trichlorophenol	0.387	0.351	0.050	-9.3	100
2,4,5-Trichlorophenol	0.412	0.351	0.050	-14.8	100
2-Chloronaphthalene	1.224	1.083	0.050	-11.5	100
2-Nitroaniline	0.527	0.496	0.050	-5.9	100
Dimethylphthalate	1.385	1.375	0.050	-0.7	100
Acenaphthylene	1.819	1.844	0.050	1.4	100
2,6-Dinitrotoluene	0.308	0.299	0.050	-2.9	100
3-Nitroaniline	0.181	0.264	0.050	45.8	100
Acenaphthene	1.218	1.172	0.050	-3.8	20.0
2,4-Dinitrophenol	0.167	0.115	0.050	-31.1	100
4-Nitrophenol	0.267	0.213	0.050	-20.2	100
Dibenzofuran	2.192	2.018	0.050	-7.9	100
2,4-Dinitrotoluene	0.427	0.390	0.050	-8.7	100
Diethylphthalate	1.367	1.451	0.050	6.1	100
4-Chlorophenyl-phenylether	0.656	0.588	0.050	-10.4	100
Fluorene	1.349	1.310	0.050	-2.9	100
4-Nitroaniline	0.150	0.220	0.050	46.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date: 03/21/03 Time: 1041

Lab File ID: S3C2474 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.129	0.050	-18.9	100
N-Nitrosodiphenylamine(1)	0.394	0.410	0.050	4.1	20.0
4-Bromophenyl-phenylether	0.243	0.205	0.050	-15.6	100
Hexachlorobenzene	0.236	0.226	0.050	-4.2	100
Pentachlorophenol	0.143	0.128	0.050	-10.5	20.0
Phenanthrene	1.190	1.111	0.050	-6.6	100
Anthracene	1.166	1.026	0.050	-12.0	100
Di-n-butylphthalate	1.374	1.438	0.050	4.6	100
Fluoranthene	1.143	1.132	0.050	-1.0	20.0
Pyrene	1.206	1.237	0.050	2.6	100
Butylbenzylphthalate	0.613	0.690	0.050	12.6	100
3,3'-Dichlorobenzidine	0.147	0.180		22.4	
Benzo(a)anthracene	1.086	1.036	0.050	-4.6	100
Chrysene	1.034	0.984	0.050	-4.8	100
bis(2-Ethylhexyl)phthalate	0.878	1.007	0.050	14.7	100
Di-n-octylphthalate	2.408	2.677	0.050	11.2	20.0
Benzo(b)fluoranthene	1.686	1.569	0.050	-6.9	100
Benzo(k)fluoranthene	1.669	1.644	0.050	-1.5	100
Benzo(a)pyrene	1.448	1.343	0.050	-7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.733	0.050	12.8	100
Dibenzo(a,h)anthracene	1.323	1.459	0.050	10.3	100
Benzo(g,h,i)perylene	1.245	1.429	0.050	14.8	100
Nitrobenzene-d5	0.440	0.410	0.050	-6.8	100
2-Fluorobiphenyl	1.579	1.379	0.050	-12.7	100
Terphenyl-d14	0.901	0.894	0.050	-0.8	100
Phenol-d5	1.322	1.274	0.050	-3.6	100
2-Fluorophenol	1.122	1.122	0.050	0.0	100
2,4,6-Tribromophenol	0.116	0.108	0.050	-6.9	100
2-Chlorophenol-d4	1.291	1.296	0.050	0.4	100
1,2-Dichlorobenzene-d4	0.924	0.910	0.050	-1.5	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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18.					
19.					
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22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		22	88	0-127
bis(2-Chloroethyl)Ether	25		23	92	46-109
2-Chlorophenol	25		21	84	22-117
2-Methylphenol	25		16	64	40-104
2,2'-oxybis(1-Chloropro	25		29	116	10-134
4-Methylphenol	25		20	80	35-106
N-Nitroso-di-n-prop.(1)	25		25	100	44-122
Hexachloroethane	25		18	72	24-104
Nitrobenzene	25		22	88	47-112
Isophorone	25		32	128*	48-118
2-Nitrophenol	25		21	84	29-122
2,4-Dimethylphenol	25		3	12*	14-109
2,4-Dichlorophenol	25		20	80	31-122
Naphthalene	25		21	84	38-117
4-Chloroaniline	25		12	48	0-152
bis(2-Chloroethoxy)meth	25		23	92	49-112
Hexachlorobutadiene	25		15	60	28-109
4-Chloro-3-Methylphenol	25		22	88	48-117
2-Methylnaphthalene	25		17	68	43-113
Hexachlorocyclopentadie	25		5	20*	34-103
2,4,6-Trichlorophenol	25		20	80	34-127
2,4,5-Trichlorophenol	25		20	80	32-131
2-Chloronaphthalene	25		20	80	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		24	96	53-124
Acenaphthylene	25		24	96	50-119
2,6-Dinitrotoluene	25		24	96	52-122
3-Nitroaniline	25		19	76	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		23	92	50-121
2,4-Dinitrophenol	25		14	56	0-144
4-Nitrophenol	25		18	72	0-160
Dibenzofuran	25		17	68	51-122
2,4-Dinitrotoluene	25		22	88	52-126
Diethylphthalate	25		27	108	53-126
4-Chlorophenyl-phenylet	25		22	88	50-124
Fluorene	25		23	92	52-125
4-Nitroaniline	25		16	64	47-117
4,6-Dinitro-2-methylphe	25		18	72	3-151
N-Nitrosodiphenylamine	25		36	144	50-150
4-Bromophenyl-phenyleth	25		21	84	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		20	80	5-125
Phenanthrene	25		23	92	52-128
Anthracene	25		21	84	52-127
Di-n-butylphthalate	25		27	108	56-132
Fluoranthene	25		24	96	53-130
Pyrene	25		27	108	53-131
Butylbenzylphthalate	25		30	120	54-128
3,3'-Dichlorobenzidine	25		15	60	41-117
Benzo(a)anthracene	25		24	96	56-124
Chrysene	25		24	96	53-123
bis(2-Ethylhexyl)phthal	25		29	116	56-127
Di-n-octylphthalate	25		27	108	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		24	96	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		27	108	23-152
Dibenzo(a,h)anthracene	25		26	104	60-122
Benzo(g,h,i)perylene	25		28	112	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	24	96	9	40	0-127
bis(2-Chloroethyl)Ether	25	24	96	4	40	46-109
2-Chlorophenol	25	22	88	5	40	22-117
2-Methylphenol	25	19	76	17	40	40-104
2,2'-oxybis(1-Chloropro	25	29	116	0	40	10-134
4-Methylphenol	25	23	92	14	40	35-106
N-Nitroso-di-n-prop.(1)	25	27	108	8	40	44-122
Hexachloroethane	25	15	60	18	40	24-104
Nitrobenzene	25	24	96	9	40	47-112
Isophorone	25	33	132*	3	40	48-118
2-Nitrophenol	25	22	88	5	40	29-122
2,4-Dimethylphenol	25	5	20	50*	40	14-109
2,4-Dichlorophenol	25	22	88	10	40	31-122
Naphthalene	25	21	84	0	40	38-117
4-Chloroaniline	25	16	64	28	40	0-152
bis(2-Chloroethoxy)meth	25	24	96	4	40	49-112
Hexachlorobutadiene	25	12	48	22	40	28-109
4-Chloro-3-Methylphenol	25	24	96	9	40	48-117
2-Methylnaphthalene	25	17	68	0	40	43-113
Hexachlorocyclopentadie	25	4	16*	22	40	34-103
2,4,6-Trichlorophenol	25	22	88	10	40	34-127
2,4,5-Trichlorophenol	25	22	88	10	40	32-131
2-Chloronaphthalene	25	21	84	5	40	47-116
2-Nitroaniline	25	19	76	11	40	51-120
Dimethylphthalate	25	24	96	0	40	53-124
Acenaphthylene	25	24	96	0	40	50-119
2,6-Dinitrotoluene	25	23	92	4	40	52-122
3-Nitroaniline	25	12	48	45*	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	23	92	0	40	50-121
2,4-Dinitrophenol	25	16	64	13	40	0-144
4-Nitrophenol	25	20	80	10	40	0-160
Dibenzofuran	25	18	72	6	40	51-122
2,4-Dinitrotoluene	25	22	88	0	40	52-126
Diethylphthalate	25	26	104	4	40	53-126
4-Chlorophenyl-phenylet	25	22	88	0	40	50-124
Fluorene	25	24	96	4	40	52-125
4-Nitroaniline	25	18	72	12	40	47-117
4,6-Dinitro-2-methylphe	25	19	76	5	40	3-151
N-Nitrosodiphenylamine	25	37	148	3	40	50-150
4-Bromophenyl-phenyleth	25	22	88	5	40	51-124
Hexachlorobenzene	25	24	96	0	40	52-124
Pentachlorophenol	25	21	84	5	40	5-125
Phenanthrene	25	23	92	0	40	52-128
Anthracene	25	22	88	5	40	52-127
Di-n-butylphthalate	25	28	112	4	40	56-132
Fluoranthene	25	24	96	0	40	53-130
Pyrene	25	28	112	4	40	53-131
Butylbenzylphthalate	25	31	124	3	40	54-128
3,3'-Dichlorobenzidine	25	17	68	12	40	41-117
Benzo(a)anthracene	25	25	100	4	40	56-124
Chrysene	25	25	100	4	40	53-123
bis(2-Ethylhexyl)phthal	25	30	120	3	40	56-127
Di-n-octylphthalate	25	27	108	0	40	59-138
Benzo(b)fluoranthene	25	24	96	0	40	58-126
Benzo(k)fluoranthene	25	25	100	4	40	60-124
Benzo(a)pyrene	25	23	92	4	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	26	104	4	40	23-152
Dibenzo(a,h)anthracene	25	26	104	0	40	60-122
Benzo(g,h,i)perylene	25	27	108	4	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 59 outside limits
Spike Recovery: 5 out of 118 outside limits

COMMENTS: _____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID (Standard): S3C2474 Date Analyzed: 03/21/03

Instrument ID: S3 Time Analyzed: 1041

	EPA SAMPLE NO.	IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	121758	7.50	447304	9.92	265340	13.45
	UPPER LIMIT	243516	8.00	894608	10.42	530680	13.95
	LOWER LIMIT	60879	7.00	223652	9.42	132670	12.95
01	SBLK3B	137543	7.51	503322	9.92	294312	13.45
02	S3BLCS	143732	7.51	518696	9.93	302870	13.45
03	S3BLCSD	165353	7.51	602280	9.93	352693	13.45
04	MW-1	148997	7.51	528904	9.92	310122	13.44
05	MW-53S	147230	7.51	524576	9.92	304623	13.44
06	MW-59S	139976	7.51	501232	9.92	293926	13.44
07	MW-54S	155868	7.51	551986	9.92	316295	13.44
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Lab File ID (Standard): S3C2474 Date Analyzed: 03/21/03

Instrument ID: S3 Time Analyzed: 1041

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	425147	16.48	394904	21.88	250680	24.61
	UPPER LIMIT	850294	16.98	789808	22.38	501360	25.11
	LOWER LIMIT	212574	15.98	197452	21.38	125340	24.11
	EPA SAMPLE NO.						
01	SBLK3B	469608	16.47	400980	21.87	250868	24.60
02	S3BLCS	471909	16.47	402245	21.88	243859	24.60
03	S3BLCSD	538364	16.48	455852	21.88	276933	24.60
04	MW-1	494548	16.47	442907	21.87	299730	24.60
05	MW-53S	479615	16.46	416513	21.87	279465	24.60
06	MW-59S	462146	16.47	410847	21.87	269729	24.60
07	MW-54S	493806	16.47	417089	21.86	272614	24.60
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0354	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/7/03

Sample MW-535

bis(2-ethylhexyl)phthalate = 7 ug/L

$$\text{bis 2EHP} = \frac{(63807)(40\text{ng})(1000\text{mL})}{(41653)(0.878)(1\text{mL})(1000\text{mL})} = 6.98\text{ng/mL} = \text{ug/L}$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2484

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: B0354-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2484

Level: (low/med) LOW Date Received: 03/05/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	7	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

Data File: S3C2484.D
Report Date: 24-Mar-2003 15:03

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030321.B\S3C2484.D
Lab Smp Id: B0354-03E Client Smp ID: MW-53S
Inj Date : 21-MAR-2003 17:42
Operator : WC Inst ID: s3.i
Smp Info : B0354-03E,MW-53S,5973,,,B0354
Misc Info : ,,,1,,,,,,,7-MAR-03,5-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030321.B\S3_8270C.m
Meth Date : 21-Mar-2003 11:21 mtl Quant Type: ISTD
Cal Date : 12-MAR-2003 15:21 Cal File: S3C2284.D ✓
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub ✓
Target Version: 4.03
Processing Host: TARGET2

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	3 2-Fluorophenol	112	5.332	5.325	(0.710)	217704	52.6999	53
$	5 Phenol-d5	99	6.950	6.955	(0.926)	285843	58.7514	59
$	9 2-Chlorophenol-d4	132	7.127	7.131	(0.949)	292472	61.5661	62
*	12 1,4-Dichlorobenzene-d4	152	7.506	7.505	(1.000)	147230	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	7.784	7.788	(1.037)	112759	33.1523	33
$	22 Nitrobenzene-d5	82	8.564	8.568	(0.863)	231781	40.1549	40
*	31 Naphthalene-d8	136	9.921	9.925	(1.000)	524576	40.0000	
$	41 2-Fluorobiphenyl	172	12.100	12.110	(0.900)	440520	36.6427	37
*	48 Acenaphthene-d10	164	13.441	13.445	(1.000)	304623	40.0000	
$	60 2,4,6-Tribromophenol	330	15.060	15.069	(0.915)	79277	57.0554	57
*	64 Phenanthrene-d10	188	16.465	16.480	(1.000)	479615	40.0000	
$	72 Terphenyl-d14	244	19.756	19.760	(0.903)	455449	48.5478	48
*	76 Chrysene-d12	240	21.866	21.881	(1.000)	416513	40.0000	
	78 bis(2-Ethylhexyl)phthalate	149	21.951	21.961	(1.004)	63807	6.97948	7

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177					0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407					0.394	20.1*
4-Bromophenyl-phenylether	* 0.262					0.243	5.7*
Hexachlorobenzene	* 0.255					0.236	5.7*
Pentachlorophenol	* 0.166					0.143	15.2*
Phenanthrene	* 1.296					1.190	7.1*
Anthracene	* 1.261					1.166	6.3*
Di-n-butylphthalate	* 1.451					1.374	4.8*
Fluoranthene	* 1.230					1.143	7.2*
Pyrene	* 1.223					1.206	1.6*
Butylbenzylphthalate	* 0.629					0.613	2.3*
3,3'-Dichlorobenzidine	0.136					0.147	12.9
Benzo(a)anthracene	* 1.092					1.086	1.1*
Chrysene	* 0.963					1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824					0.878	6.6*
Di-n-octylphthalate	* 2.687					2.408	13.8*
Benzo(b)fluoranthene	* 1.959					1.686	12.1*
Benzo(k)fluoranthene	* 1.683					1.669	6.2*
Benzo(a)pyrene	* 1.582					1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678					1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479					1.323	8.0*
Benzo(g,h,i)perylene	* 1.338					1.245	6.0*
Nitrobenzene-d5	0.436					0.440	2.2*
2-Fluorobiphenyl	* 1.695					1.579	4.7*
Terphenyl-d14	* 0.882					0.901	1.7*
Phenol-d5	* 1.296					1.322	4.2*
2-Fluorophenol	* 1.164					1.122	3.9*
2,4,6-Tribromophenol	* 0.128					0.116	8.5*
2-Chlorophenol-d4	* 1.326					1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981					0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BC	AR1660BC	03/10/03	1428	6.79	22.14
23	BBLK1D	MB-5974	03/10/03	1550	6.79	22.14
24	B1DLCS	LCS-5975	03/10/03	1630	6.79	22.13
25	B1DLCSD	LCSD-5975	03/10/03	1706	6.78	22.13
26	MW-1	B0354-02E	03/10/03	1927	6.78	22.13
27	MW-53S	B0354-03E	03/10/03	2002	6.78	22.13
28	MW-59S	B0354-04E	03/10/03	2037	6.78	22.13
29	MW-54S	B0354-05E	03/10/03	2113	6.78	22.13
30	AR1660BD	AR1660BD	03/11/03	0009	6.78	22.13
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BC	AR1660BC	03/10/03	1428	8.45	25.36
23	BBLK1D	MB-5974	03/10/03	1550	8.46	25.36
24	B1DLCS	LCS-5975	03/10/03	1630	8.45	25.36
25	B1DLCSD	LCSD-5975	03/10/03	1706	8.45	25.35
26	MW-1	B0354-02E	03/10/03	1927	8.45	25.35
27	MW-53S	B0354-03E	03/10/03	2002	8.45	25.35
28	MW-59S	B0354-04E	03/10/03	2037	8.45	25.35
29	MW-54S	B0354-05E	03/10/03	2113	8.45	25.35
30	AR1660BD	AR1660BD	03/11/03	0009	8.46	25.36
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date: 03/10/03 Time: 1428

Lab File ID: E1D9780F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11694.000	0.01	2.0	15.0
(2)	24115.960	22721.000	0.01	5.8	15.0
(3)	14202.320	13326.000	0.01	6.2	15.0
Aroclor-1260	29455.240	27596.000	0.01	6.3	15.0
(2)	40190.280	42363.000	0.01	5.4	15.0
(3)	23147.960	22171.000	0.01	4.2	15.0
Tetrachloro-m-xylene	503358.00	508250.00	0.01	1.0	15.0
Decachlorobiphenyl	581298.00	521450.00	0.01	10.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date: 03/10/03 Time: 1428

Lab File ID: E1D9780R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44933.000	0.01	4.3	15.0
(2)	24183.600	22504.000	0.01	6.9	15.0
(3)	20737.640	19815.000	0.01	4.4	15.0
Aroclor-1260	45409.320	43191.000	0.01	4.9	15.0
(2)	46248.440	43857.000	0.01	5.2	15.0
(3)	64584.960	65965.000	0.01	2.1	15.0
Tetrachloro-m-xylene	741526.00	744150.00	0.01	0.4	15.0
Decachlorobiphenyl	711418.00	711500.00	0.01	0.0	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date: 03/11/03 Time: 0009

Lab File ID: E1D9796F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11152.000	0.01	6.5	15.0
(2)	24115.960	21739.000	0.01	9.8	15.0
(3)	14202.320	12672.000	0.01	10.8	15.0
Aroclor-1260	29455.240	26518.000	0.01	10.0	15.0
(2)	40190.280	40307.000	0.01	0.3	15.0
(3)	23147.960	21252.000	0.01	8.2	15.0
Tetrachloro-m-xylene	503358.00	486200.00	0.01	3.4	15.0
Decachlorobiphenyl	581298.00	524150.00	0.01	9.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID: E1 Calibration Date: 03/11/03 Time: 0009

Lab File ID: E1D9796R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43754.000	0.01	6.8	15.0
(2)	24183.600	22061.000	0.01	8.8	15.0
(3)	20737.640	19649.000	0.01	5.2	15.0
Aroclor-1260	45409.320	43363.000	0.01	4.5	15.0
(2)	46248.440	44446.000	0.01	3.9	15.0
(3)	64584.960	65294.000	0.01	1.1	15.0
Tetrachloro-m-xylene	741526.00	724800.00	0.01	2.2	15.0
Decachlorobiphenyl	711418.00	748500.00	0.01	5.2	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix: (soil/water) WATER Lab Sample ID: MB-5974

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9782F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1D	91	94	77	88			0
02	B1DLCS	90	90	85	95			0
03	B1DLCSD	88	88	86	97			0
04	MW-1	81	81	65	70			0
05	MW-53S	88	90	71	79			0
06	MW-59S	88	89	48	53			0
07	MW-54S	80	82	46	50			0
08								
09								
10								
11								
12								
13								
14								
15								
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23								
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25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix Spike - Sample No.: B1DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		8.8	88	45-162
Aroclor-1260	10		9.4	94	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	8.8	88	0	40	45-162
Aroclor-1260	10	9.6	96	2	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM III PCB

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO : **G. GLENN** **DATE:** **MAY 8, 2003**

FROM: **ERIN M. FAUST** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO 848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0354

SAMPLES: 4/Aqueous/

MW-1 MW-53S MW-54S MW-59S

Overview

The sample set for CTO 848, SDG B0354, NASA Wallops Island, consists of four (4) aqueous environmental samples.

The samples were analyzed for chloride, nitrate, nitrite, sulfate, total organic carbon (TOC) and total and dissolved target analyte list (TAL) metals. Samples analyzed for dissolved metals are designated "-F". The samples were collected by Tetra Tech NUS on March 3 and 4, 2003 and analyzed by Mitkem Corporation. Metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 method 7470A. Analyses for TOC were conducted using EPA method 415.1. Analyses for chloride, nitrate, nitrite and sulfate were conducted using EPA method 300.0.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, laboratory control sample (LCS) results, detection limits and analyte quantitation.

Metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) instrumentation. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) instrumentation.

Areas of concern with respect to data quality are listed below.

Minor Problems

- The 48-hour holding time for nitrate and nitrite was exceeded by 1 day for sample MW-1. The positive result reported for nitrate was qualified as estimated, "J". The nondetected result reported for nitrite was qualified as estimated, "UJ".

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Samples Affected: All

Analyte	Maximum Concentration	Action Level
Aluminum[(1)]	48.683 µg/L	243.42 µg/L
Antimony[(1)]	4.381 µg/L	21.90 µg/L
Beryllium	0.60 µg/L	3.0 µg/L
Cobalt	1.4 µg/L	7.0 µg/L
Copper[(1)]	8.06 µg/L	40.3 µg/L
Iron[(1)]	30.678 µg/L	153.39 µg/L
Magnesium[(1)]	51.105 µg/L	255.52 µg/L
Manganese[(1)]	1.118 µg/L	5.59 µg/L
Nickel	1.2 µg/L	6.0 µg/L
Potassium	267.9 µg/L	1339.5 µg/L
Sodium	91.4 µg/L	457 µg/L
Sulfate	0.198 mg/L	0.99 mg/L

[(1)] Maximum contamination present in an aqueous preparation blank.

An action level of five times the maximum contaminant level has been established to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results < the action level reported for aluminum, antimony, cobalt, copper, iron, manganese, nickel and potassium were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetected.

- Laboratory Control Sample (LCS) percent recovery for mercury was < 80% quality control limit. The nondetected results reported for mercury were qualified as biased low, "UL".

Notes

Contract Required Detection Limit (CRDL) and matrix spike (MS) percent recoveries and ICP serial dilution and laboratory duplicate percent differences could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the Interference Check Standard A (ICSA) on the Form 4; however, these results did not need to be evaluated because the interfering analytes were not present in the environmental samples at significant levels.

The nondetected results for nitrite were reported as "0 U" in the electronic database. The data reviewer corrected the results by replacing the zero with the laboratory's listed reporting limit (RL).

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. Nitrate and nitrite results in sample MW-1 were qualified due to holding time noncompliance. Mercury was qualified due to LCS noncompliance.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 as amended for use within USEPA Region III.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

UJ - Nondetected result is considered estimated, "UJ", as a result of technical noncompliances.

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-1		nsample	MW-53S		nsample	MW-54S	
samp_date	3/3/2003		samp_date	3/4/2003		samp_date	3/4/2003	
lab_id	B0354-02D		lab_id	B0354-03D		lab_id	B0354-05D	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/L		units	UG/L		units	UG/L	
Pct_Solids	0		Pct_Solids	0		Pct_Solids	0	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
ALUMINUM	589		
ANTIMONY	3.7	B	A
ARSENIC	3.8		
BARIUM	21.6		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	20700		
CHROMIUM	1.8		
COBALT	1.3	B	A
COPPER	8.5	B	A
IRON	129	B	A
LEAD	4.0	U	
MAGNESIUM	1810		
MANGANESE	8.9		
MERCURY	0.14	UL	E
NICKEL	1.3	B	A
POTASSIUM	6060		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	8590		
THALLIUM	3.0	U	
VANADIUM	3.0		
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	121	B	A
ANTIMONY	5.0	B	A
ARSENIC	3.0	U	
BARIUM	10.6		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4790		
CHROMIUM	0.82		
COBALT	0.90	U	
COPPER	4.2	B	A
IRON	73.1	B	A
LEAD	4.0	U	
MAGNESIUM	2210		
MANGANESE	3.1	B	A
MERCURY	0.12	UL	E
NICKEL	0.98	B	A
POTASSIUM	1530		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3190		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	174	B	A
ANTIMONY	4.2	B	A
ARSENIC	3.0	U	
BARIUM	10.0		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3020		
CHROMIUM	0.99		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	88.6	B	A
LEAD	4.0	U	
MAGNESIUM	3710		
MANGANESE	3.4	B	A
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1050	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3080		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-59S
samp_date	3/4/2003
lab_id	B0354-04D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	31.0	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	19.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3720		
CHROMIUM	0.98		
COBALT	0.99	B	A
COPPER	4.0	U	
IRON	75.8	B	A
LEAD	4.0	U	
MAGNESIUM	4000		
MANGANESE	9.0		
MERCURY	0.13	UL	E
NICKEL	2.2	B	A
POTASSIUM	1380		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	8170		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION: MF

nsample	MW-1-F	nsample	MW-53S-F	nsample	MW-54S-F
samp_date	3/3/2003	samp_date	3/4/2003	samp_date	3/4/2003
lab_id	B0354-06A	lab_id	B0354-07A	lab_id	B0354-09A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0.0	Pct_Solids	0.0	Pct_Solids	0.0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	107	B	A
ANTIMONY	4.4	B	A
ARSENIC	3.0	U	
BARIUM	15.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	17200		
CHROMIUM	1.2		
COBALT	1.1	B	A
COPPER	4.4	B	A
IRON	26.2	B	A
LEAD	4.0	U	
MAGNESIUM	1650		
MANGANESE	5.6		
MERCURY	0.14	UL	E
NICKEL	0.93	B	A
POTASSIUM	5890		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	8570		
THALLIUM	3.0	U	
VANADIUM	2.4		
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	5.3	B	A
ARSENIC	3.0	U	
BARIUM	9.9		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	5330		
CHROMIUM	0.60	U	
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	2450		
MANGANESE	2.0	B	A
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1540		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3330		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	7.6		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2990		
CHROMIUM	0.66		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	3680		
MANGANESE	1.3	B	A
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1030	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3040		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION: MF

nsample	MW-59S-F
samp_date	3/4/2003
lab_id	B0354-08A
qc_type	NM
units	UG/L
Pct_Solids	0.0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	19.0		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3710		
CHROMIUM	0.90		
COBALT	1.0	B	A
COPPER	4.0	U	
IRON	58.5	B	A
LEAD	4.0	U	
MAGNESIUM	3940		
MANGANESE	9.1		
MERCURY	0.14	UL	E
NICKEL	2.0	B	A
POTASSIUM	1350		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	8110		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-1
samp_date	3/3/2003
lab_id	203171-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	6.2		
NITRATE	MG/L	1.2	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	5.6		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	MW-53S
samp_date	3/4/2003
lab_id	203171-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.2		
NITRATE	MG/L	4.9		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	2.6		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	MW-54S
samp_date	3/4/2003
lab_id	203171-004
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.5		
NITRATE	MG/L	0.60		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	5.5		
TOTAL ORGANIC CARBON	MG/L	6	U	

PROJ_NO: 4740

SDG: B0354 MEDIA: WATER DATA FRACTION:

nsample	MW-59S
samp_date	3/4/2003
lab_id	203171-003
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	10		
NITRATE	MG/L	0.25		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-02D

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	589			P
7440-36-0	Antimony	3.7	B		P
7440-38-2	Arsenic	3.8	B		P
7440-39-3	Barium	21.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	20700			P
7440-47-3	Chromium	1.8	B		P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	8.5	B		P
7439-89-6	Iron	129	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	1810			P
7439-96-5	Manganese	8.9	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	6060			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	8590			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	3.0	B		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-03D

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	121	B		P
7440-36-0	Antimony	5.0	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	10.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4790			P
7440-47-3	Chromium	0.82	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.2	B		P
7439-89-6	Iron	73.1	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2210			P
7439-96-5	Manganese	3.1	B		P
7439-97-6	Mercury	0.12	U		CV
7440-02-0	Nickel	0.98	B		P
7440-09-7	Potassium	1530			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3190			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-54S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0354__

Matrix (soil/water): WATER Lab Sample ID: B0354-05D_____

Level (low/med): MED Date Received: 03/05/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	174	B		P
7440-36-0	Antimony	4.2	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	10.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3020			P
7440-47-3	Chromium	0.99	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	88.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3710			P
7439-96-5	Manganese	3.4	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3080			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-59S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354

Matrix (soil/water): WATER_ Lab Sample ID: B0354-04D_____

Level (low/med): MED____ Date Received: 03/05/03

% Solids: ___

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31.0	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	19.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3720			P
7440-47-3	Chromium	0.98	B		P
7440-48-4	Cobalt	0.99	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	75.8	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4000			P
7439-96-5	Manganese	9.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	8170			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-1F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-06A

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	107	B		P
7440-36-0	Antimony	4.4	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	15.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	17200			P
7440-47-3	Chromium	1.2	B		P
7440-48-4	Cobalt	1.1	B		P
7440-50-8	Copper	4.4	B		P
7439-89-6	Iron	26.2	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	1650			P
7439-96-5	Manganese	5.6	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.93	B		P
7440-09-7	Potassium	5890			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	8570			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW-53S-F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-07A

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	5.3	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	9.9	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	5330			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2450			P
7439-96-5	Manganese	2.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1540			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3330			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW-54S-F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-09A

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	7.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2990			P
7440-47-3	Chromium	0.66	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3680			P
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1030			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3040			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW-59S-F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Matrix (soil/water): WATER Lab Sample ID: B0354-08A

Level (low/med): MED Date Received: 03/05/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	19.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3710			P
7440-47-3	Chromium	0.90	B		P
7440-48-4	Cobalt	1.0	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	58.5	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3940			P
7439-96-5	Manganese	9.1	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.0	B		P
7440-09-7	Potassium	1350			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	8110			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

LABORATORY TEST RESULTS

Job Number: 203171

Date:03/17/2003

CUSTOMER: NITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0354-02C
Date Sampled.....: 03/03/2003
Time Sampled.....: 15:45
Sample Matrix.....: Water

Laboratory Sample ID: 203171-1
Date Received.....: 03/06/2003
Time Received.....: 10:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	6.2			0.15	1.0	1	mg/L	15128		03/06/03 1507	ddm
	Nitrate as N (NO3-N)	1.2			0.002	0.10	1	mg/L	15128		03/06/03 1507	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15128		03/06/03 1507	ddm
	Sulfate	5.6			0.012	1.0	1	mg/L	15128		03/06/03 1507	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: MW-1
Lab ID: B0354-02

Project: Wallops Island
Collection Date: 03/03/03 15:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203171

Date:03/17/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0354-03C
Date Sampled.....: 03/04/2003
Time Sampled.....: 09:20
Sample Matrix.....: Water

Laboratory Sample ID: 203171-2
Date Received.....: 03/06/2003
Time Received.....: 10:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.2			0.15	1.0	1	mg/L	15128		03/06/03 1548	ddm
	Nitrate as N (NO3-N)	4.9			0.002	0.10	1	mg/L	15128		03/06/03 1548	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15128		03/06/03 1548	ddm
	Sulfate	2.6			0.012	1.0	1	mg/L	15128		03/06/03 1548	ddm

0000004

* In Description = Dry Wgt.

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: MW-53S
Lab ID: B0354-03

Project: Wallops Island
Collection Date: 03/04/03 9:20

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

- ND - Not Detected at the Reporting Limit
- J - Analyte detected below quanititation limits
- B - Analyte detected in the associated Method Blank
- DF - Dilution Factor
- S - Spike Recovery outside accepted recovery limits
- R - RPD outside accepted recovery limits
- E - Value above quantitation range
- RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203171

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0354-05C
Date Sampled.....: 03/04/2003
Time Sampled.....: 15:50
Sample Matrix.....: Water

Laboratory Sample ID: 203171-4
Date Received.....: 03/06/2003
Time Received.....: 10:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.5			0.15	1.0	1	mg/L	15128		03/06/03 1614	ddm
	Nitrate as N (NO3-N)	0.60			0.002	0.10	1	mg/L	15128		03/06/03 1614	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15128		03/06/03 1614	ddm
	Sulfate	5.5			0.012	1.0	1	mg/L	15128		03/06/03 1614	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: MW-54S
Lab ID: B0354-05

Project: Wallops Island
Collection Date: 03/04/03 15:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION					**E415.1_TOC_W**		
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203171

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0354-04C
Date Sampled.....: 03/04/2003
Time Sampled.....: 12:45
Sample Matrix.....: Water

Laboratory Sample ID: 203171-3
Date Received.....: 03/06/2003
Time Received.....: 10:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	10			0.15	1.0	1	mg/L	15128		03/06/03 1601	ddm
	Nitrate as N (NO3-N)	0.25			0.002	0.10	1	mg/L	15128		03/06/03 1601	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15128		03/06/03 1601	ddm
	Sulfate	11			0.012	1.0	1	mg/L	15128		03/06/03 1601	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Client Sample ID: MW-59S
Lab ID: B0354-04

Project: Wallops Island
Collection Date: 03/04/03 12:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C
SUPPORT DOCUMENTATION

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: 30354
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40ml VOA vials HCl; TCL VOC + MTBE 1 Liter Amber glass; TCL SVOC 1 Liter Amber glass; TCL PEST 500ml poly HNO3; TAL Metals 500ml poly Dissolved metals; Sulfate, Nitrate, Chloride 500ml poly H2SO4; Dissolved metals 40ml VOA vials HCl; TOC	COMMENTS
TB-030303	3/3/03 / 1325		X	X			01	2	2*	Trip Blank
MW-1	3/3/03 / 1545		X	X			02	8	2* 1* 1* 1* 1* 2*	
MW-53S	3/4/03 / 0920		X	X			03	8	2 1 1 1 1 2	
MW-59S	3/4/03 / 1245		X	X			04	8	2 1 1 1 1 2	
MW-54S	3/4/03 / 1550		X	X			05	8	2 1 1 1 1 2	
MW-1F	3/3/03 / 1545		X	X			06	1	1	
MW-53SF	3/4/03 / 0920		X	X			07	1	1	
MW-59S-F	3/4/03 / 1245		X	X			08	1	1	
MW-54S-F	3/4/03 / 1550		X	X			09	1	1	
	/									
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	3/4/03 / 1700	[signature]	3-5-03 / 0900	Shipped via Federal Express Airbill NO 8286 8464 5186 Blank water and Bottles provided by the Lab	3°
		/		/		
		/		/		

6000

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

Sample Condition Form

Page 1 of 1

Received By:	Reviewed By:	Date: 3-5-03	MITKEM Project: 30354
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed YES / NO*
*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX
879482405186

5)Cooler Temperature 3c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 3-5-03

8)Time Received 0900

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
30354 01					H
02	<2				H
03	<2				H
04	<2				H
05	<2				H
06	<2				
07	<2				
08	<2				
30354 09	<2				

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks

Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

rpjsckl	Job Sample Receipt Checklist Report	V2

Job Number.: 203171 Location.: 57207 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 03/06/2003 Date of the Report..: 03/06/2003
Project Number.: 20000646 Project Description.: Nitrate/Sulfate Project Manager.....: jld
Customer.....: MITKEM Contact.: Paul Senecal

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?	Y	
...If "yes", completed properly?	Y	
Custody seal on shipping container?	Y	
...If "yes", custody seal intact?	Y	
Custody seals on sample containers?	N	
...If "yes", custody seal intact?		
Samples iced?	Y	BAGGED ICE
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	0 C
Samples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		
Correct containers used?	Y	
Adequate sample volume provided?	Y	
Samples preserved correctly?		
Samples received within holding-time?	N	SAMPLES 01 AND 02 RECEIVED OUT OF HOLD
Agreement between COC and sample labels?	Y	
Radioactivity at or below background levels?	Y	
A Sample Discrepancy Report (SDR) was needed?	N	
Comments	Y	SHORT HOLDS (NITRATES)
If samples were shipped was there an air bill #?	Y	FE 7922 0300 8749
Sample Custodian Signature/Date	Y	Alex C. Yanowski 03/06/03

B0354

HOLDING TIME

05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	MW-1	203171-001	NORMAL	B0354	CL	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	CL	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	CL	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	CL	03/04/03	/ /	03/06/03	0	0	2
%	LCSW	0308LCSW	LCS	B0354	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	MW-1	B0354-02D	NORMAL	B0354	HG	03/03/03	03/08/03	03/10/03	5	2	7
UG/L	MW-53S	B0354-03D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-54S	B0354-05D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-59S	B0354-04D	NORMAL	B0354	HG	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	PBW	0308PBW	M_BLANK	B0354	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	MW-1F	B0354-06A	NORMAL	B0354	HGF	03/03/03	03/08/03	03/10/03	5	2	7
UG/L	MW-53S-F	B0354-07A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-54S-F	B0354-09A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
UG/L	MW-59S-F	B0354-08A	NORMAL	B0354	HGF	03/04/03	03/08/03	03/10/03	4	2	6
%	LCSW	0308LCSW	LCS	B0354	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	MW-1	B0354-02D	NORMAL	B0354	M	03/03/03	03/08/03	03/09/03	5	1	6
UG/L	MW-53S	B0354-03D		B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-54S	B0354-05D	NORMAL	B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-59S	B0354-04D	NORMAL	B0354	M	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	PBW	0308PBW	M_BLANK	B0354	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	MW-1F	B0354-06A	NORMAL	B0354	MF	03/03/03	03/08/03	03/09/03	5	1	6
UG/L	MW-53S-F	B0354-07A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-54S-F	B0354-09A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5
UG/L	MW-59S-F	B0354-08A	NORMAL	B0354	MF	03/04/03	03/08/03	03/09/03	4	1	5

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	MW-1	203171-001	NORMAL	B0354	NTA	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	NTA	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-1	203171-001		B0354	NTI	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002	NORMAL	B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	NTI	03/04/03	/ /	03/06/03	0	0	2
UG/L	MW-1	B0354-02E	NORMAL	B0354	OS	03/03/03	03/07/03	03/21/03	4	14	18
%	MW-53S	B0354-03E	NORMAL	B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	MW-54S	B0354-05E		B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	MW-59S	B0354-04E	NORMAL	B0354	OS	03/04/03	03/07/03	03/21/03	3	14	17
%	SBLK3B	MB-5973	M_BLANK	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCS	LCS-5973	LCS	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCSD	LCSD-5973	LCSD	B0354	OS	/ /	03/07/03	03/21/03	0	14	0
%	MW-1	B0354-02A	NORMAL	B0354	OV	03/03/03	03/12/03	03/12/03	9	0	9
%	MW-53S	B0354-03A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
%	MW-54S	B0354-05A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
UG/L	MW-59S	B0354-04A	NORMAL	B0354	OV	03/04/03	03/12/03	03/12/03	8	0	8
%	TB-030303	B0354-01A	NORMAL	B0354	OV	03/03/03	03/12/03	03/12/03	9	0	9
%	VBLK6N	V6B0312A	M_BLANK	B0354	OV	/ /	03/12/03	03/12/03	0	0	0
%	VBLK6NLCS	V6L0312A	LCS	B0354	OV	/ /	03/12/03	03/12/03	0	0	0
%	BBLK1D	MB-5974	M_BLANK	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCS	LCS-5975	LCS	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCSD	LCSD-5975	LCSD	B0354	PCB	/ /	03/07/03	03/10/03	0	3	0
%	MW-1	B0354-02E	NORMAL	B0354	PCB	03/03/03	03/07/03	03/10/03	4	3	7
%	MW-53S	B0354-03E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	MW-54S	B0354-05E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6
%	MW-59S	B0354-04E	NORMAL	B0354	PCB	03/04/03	03/07/03	03/10/03	3	3	6
MG/L	MW-1	203171-001	NORMAL	B0354	SO4	03/03/03	/ /	03/06/03	0	0	3
MG/L	MW-53S	203171-002		B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-54S	203171-004		B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
MG/L	MW-59S	203171-003	NORMAL	B0354	SO4	03/04/03	/ /	03/06/03	0	0	2
%	LCS--6204	LCS--6204	LCS	B0354	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB--6204	MB--6204	M_BLANK	B0354	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MW-1	B0354-02B	NORMAL	B0354	TOC	03/03/03	03/18/03	03/18/03	15	0	15
MG/L	MW-53S	B0354-03B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14
MG/L	MW-54S	B0354-05B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14
MG/L	MW-59S	B0354-04B	NORMAL	B0354	TOC	03/04/03	03/18/03	03/18/03	14	0	14

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for nine aqueous samples that were collected on March 4, 2003, and received at Mitkem on March 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of chloromethane and vinyl chloride and low recovery of 1,2-dibromo-3-chloropropane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 2,4-dimethylphenol and hexachlorocyclopentadiene in the lab control sample and high recovery isophorone and low recovery of hexachlorocyclopentadiene in the lab control sample duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

SEVERN TRENT STL

STL Report : 203171
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Samples received out of hold. Client contacted and authorized STL to analyze out of hold.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Ion Chromatography Analysis – Chloride, Nitrate, Nitrite, Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A Cascio for
Jeffrey G. Curran
Laboratory Manager

March 17, 2003
Date

SAMPLE INFORMATION

Date: 03/17/2003

Job Number.: 203171
Customer...: MITKEM
Attn.....: Paul Senecal

Project Number.....: 20000646
Customer Project ID....: MITRATE SULFATE
Project Description....: Nitrate/Sulfate

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
203171-1	B0354-02C	Water	03/03/2003	15:45	03/06/2003	10:20
203171-2	B0354-03C	Water	03/04/2003	09:20	03/06/2003	10:20
203171-3	B0354-04C	Water	03/04/2003	12:45	03/06/2003	10:20
203171-4	B0354-05C	Water	03/04/2003	15:50	03/06/2003	10:20

LABORATORY CHRONICLE

Job Number: 203171 Date: 03/17/2003

CUSTOMER: NITCOM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Lab ID	Client ID	Date Recvd	Sample Date
203171-1	B0354-02C	03/06/2003	03/03/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15128			03/06/2003 1507	

Lab ID	Client ID	Date Recvd	Sample Date
203171-2	B0354-03C	03/06/2003	03/04/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15128			03/06/2003 1548	

Lab ID	Client ID	Date Recvd	Sample Date
203171-3	B0354-04C	03/06/2003	03/04/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15128			03/06/2003 1601	

Lab ID	Client ID	Date Recvd	Sample Date
203171-4	B0354-05C	03/06/2003	03/04/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15128			03/06/2003 1614	

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354___

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
__MW-1_____	_B0354-02D
__MW-1F_____	B0354-06A
__MW-53S_____	__B0354-03D_____
__MW-53S-F_____	__B0354-07A_____
__MW-54S_____	__B0354-05D
__MW-54S-F_____	__B0354-09A
__MW-59S_____	__B0354-04D_____
__MW-59S-F_____	__B0354-08A_____

Were ICP interelement corrections applied ? Yes/No YES_

Were ICP background corrections applied ? Yes/No YES_

If yes - were raw data generated before application of background corrections ? Yes/No NO_

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: RICHARD A. COUZENS

Date: 3/6/13 Title: CHEMIST

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2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354__

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	10201.54	102.0	10000.0	10317.05	103.2	10332.60	103.3	P
Antimony	500.0	531.58	106.3	500.0	538.27	107.7	540.16	108.0	P
Arsenic	500.0	522.05	104.4	500.0	525.44	105.1	528.25	105.6	P
Barium	10000.0	10525.51	105.3	10000.0	10606.02	106.1	10577.46	105.8	P
Beryllium	250.0	250.90	100.4	250.0	253.14	101.3	251.80	100.7	P
Cadmium	250.0	258.28	103.3	250.0	261.49	104.6	260.78	104.3	P
Calcium	25000.0	25048.30	100.2	25000.0	25220.36	100.9	25320.98	101.3	P
Chromium	1000.0	1020.75	102.1	1000.0	1033.52	103.4	1031.59	103.2	P
Cobalt	2500.0	2595.20	103.8	2500.0	2647.49	105.9	2638.12	105.5	P
Copper	1250.0	1291.76	103.3	1250.0	1307.68	104.6	1296.12	103.7	P
Iron	5000.0	5129.06	102.6	5000.0	5163.18	103.3	5170.92	103.4	P
Lead	500.0	513.75	102.8	500.0	515.38	103.1	518.11	103.6	P
Magnesium	25000.0	25620.98	102.5	25000.0	25871.33	103.5	25886.56	103.5	P
Manganese	2500.0	2558.88	102.4	2500.0	2563.73	102.5	2554.46	102.2	P
Mercury	5.0	4.86	97.2	5.0	4.91	98.2	4.95	99.0	CV
Nickel	2500.0	2591.44	103.7	2500.0	2602.63	104.1	2599.56	104.0	P
Potassium	25000.0	25238.09	101.0	25000.0	24437.95	97.8	24758.27	99.0	P
Selenium	500.0	522.68	104.5	500.0	525.57	105.1	531.89	106.4	P
Silver	1250.0	1210.22	96.8	1250.0	1229.37	98.3	1226.45	98.1	P
Sodium	25000.0	24255.69	97.0	25000.0	23752.37	95.0	23747.48	95.0	P
Thallium	500.0	522.52	104.5	500.0	527.10	105.4	528.19	105.6	P
Vanadium	2500.0	2571.39	102.9	2500.0	2597.57	103.9	2585.99	103.4	P
Zinc	2500.0	2586.04	103.4	2500.0	2611.44	104.5	2617.10	104.7	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.3	B	17.0	U	31.2	B			48.683	B	P
Antimony	3.3	B	3.0	U	4.1	B			4.381	B	P
Arsenic	3.0	U	3.0	U	3.0	U			3.000	U	P
Barium	4.0	U	4.0	U	4.0	U			4.000	U	P
Beryllium	0.6	B	0.5	U	0.5	U			0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U			0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U			240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U			0.600	U	P
Cobalt	1.4	B	0.9	U	0.9	U			0.916	B	P
Copper	4.0	U	4.0	U	4.0	U			8.060	B	P
Iron	26.0	U	26.0	U	26.0	U			30.678	B	P
Lead	4.0	U	4.0	U	4.0	U			4.000	U	P
Magnesium	21.8	B	8.0	U	31.9	B			51.105	B	P
Manganese	1.1	B	0.8	U	0.8	U			1.118	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel	1.2	B	0.8	U	0.8	U			0.800	U	P
Potassium	267.9	B	78.0	U	78.0	U			135.477	B	P
Selenium	9.0	U	9.0	U	9.0	U			9.000	U	P
Silver	2.0	U	2.0	U	2.0	U			2.000	U	P
Sodium	91.4	B	83.0	U	83.0	U			83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U			3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U			0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U			7.000	U	P
Cyanide											

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4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		26036.8	104.1		25515.0	102.1
Selenium								
Silver								
Sodium		25000		25128.7	100.5		24660.2	98.6
Thallium								
Vanadium								
Zinc								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	%R	Final Found Sol. A	Final Found Sol. AB	%R
Aluminum	500000	500000	495148	490166.6	98.0	494981	489047.8	97.8
Antimony		600		634.4	105.7		648.0	108.0
Arsenic		100		112.7	112.7		111.6	111.6
Barium		500		505.6	101.1		501.8	100.4
Beryllium		500		496.9	99.4		495.3	99.1
Cadmium		1000		936.4	93.6		933.7	93.4
Calcium	500000	500000	515452	511427.0	102.3	516517	508140.2	101.6
Chromium		500		488.3	97.7		485.9	97.2
Cobalt		500		463.5	92.7		461.0	92.2
Copper		500		524.9	105.0		518.4	103.7
Iron	200000	200000	185597	184168.2	92.1	185227	183735.4	91.9
Lead		500		476.2	95.2		473.4	94.7
Magnesium	500000	500000	491303	486552.8	97.3	490021	485153.1	97.0
Manganese		500		484.6	96.9		479.3	95.9
Mercury								
Nickel		1000		910.3	91.0		902.8	90.3
Potassium								
Selenium		500		516.5	103.3		511.7	102.3
Silver		200		197.1	98.6		197.6	98.8
Sodium								
Thallium		100		82.3	82.3		94.1	94.1
Vanadium		500		495.0	99.0		491.6	98.3
Zinc		1000		934.5	93.4		930.7	93.1

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LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354...

Solid LCS Source: _____

Aqueous LCS Source: HIGH_PURITY_#802115

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	9100.0	9118.6	100.2						
Antimony	455.0	483.5	106.3						
Arsenic	455.0	450.7	99.1						
Barium	9100.0	9284.5	102.0						
Beryllium	227.0	227.3	100.1						
Cadmium	227.0	225.7	99.4						
Calcium	22700.0	22263.5	98.1						
Chromium	910.0	907.3	99.7						
Cobalt	2270.0	2328.3	102.6						
Copper	1130.0	1141.0	101.0						
Iron	4550.0	4573.2	100.5						
Lead	455.0	448.4	98.5						
Magnesium	22700.0	23070.0	101.6						
Manganese	2270.0	2284.0	100.6						
Mercury	4.6	3.4	73.9						
Nickel	2270.0	2264.8	99.8						
Potassium	22700.0	21955.4	96.7						
Selenium	455.0	451.8	99.3						
Silver	1130.0	1115.4	98.7						
Sodium	22700.0	21822.2	96.1						
Thallium	455.0	455.6	100.1						
Vanadium	2270.0	2281.4	100.5						
Zinc	2270.0	2299.2	101.3						
Cyanide									

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

_____

_____

_____

_____

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0354____

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/08/03		50
MW-1	03/08/03		50
MW-1F	03/08/03		50
MW-53S	03/08/03		50
MW-53S-F	03/08/03		50
MW-54S	03/08/03		50
MW-54S-F	03/08/03		50
MW-59S	03/08/03		50
MW-59S-F	03/08/03		50
PBW	03/08/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354_____

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/08/03		100
MW-1	03/08/03		142
MW-1F	03/08/03		138
MW-53S	03/08/03		122
MW-53S-F	03/08/03		132
MW-54S	03/08/03		133
MW-54S-F	03/08/03		134
MW-59S	03/08/03		130
MW-59S-F	03/08/03		138
PBW	03/08/03		100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0354___

Instrument ID Number: OPTIMA_2A Method: P___

Start Date: 03/09/03 End Date: 03/09/03___

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1015		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S1	1.00	1020		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S2	1.00	1024		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
S3	1.00	1028		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1032																										
ZZZZZZ	1.00	1036																										
ZZZZZZ	1.00	1038																										
ZZZZZZ	1.00	1042																										
ZZZZZZ	1.00	1046																										
ICV	1.00	1051		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1055		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1100		X						X				X		X												
ICSAB	1.00	1102		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1105		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1109		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-1	1.00	1113		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-53S	1.00	1117		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-59S	1.00	1121		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-54S	1.00	1125		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-1F	1.00	1129		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-53S-F	1.00	1133		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1137		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1142		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-59S-F	1.00	1146		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW-54S-F	1.00	1150		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1154																										
ZZZZZZ	1.00	1158																										
ZZZZZZ	1.00	1202																										
ZZZZZZ	1.00	1206																										
ICSA	1.00	1210		X						X				X		X												
ICSAB	1.00	1213		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: ___ SAS No.: _____ SDG No.: B0354___

Instrument ID Number: OPTIMA_2A_____ Method: P

Start Date: 03/09/03___ End Date: 03/09/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB_____	1.00___	1219___		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0354__

Instrument ID Number: OPTIMA_1A_____ Method: P

Start Date: 03/10/03 End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1138																				X				
S1	1.00	1140																				X				
S2	1.00	1142																				X				
S3	1.00	1145																				X				
ZZZZZZ	1.00	1147																								
ZZZZZZ	1.00	1149																								
ICV	1.00	1153																				X				
ICB	1.00	1156																				X				
ICSA	1.00	1158																								
ICSAB	1.00	1200																				X				
PBW	1.00	1203																				X				
LCSW	1.00	1205																				X				
MW-1	1.00	1207																				X				
MW-53S	1.00	1209																				X				
MW-59S	1.00	1212																				X				
MW-54S	1.00	1214																				X				
MW-1F	1.00	1216																				X				
MW-53S-F	1.00	1219																				X				
CCV	1.00	1221																				X				
CCB	1.00	1223																				X				
MW-59S-F	1.00	1226																				X				
MW-54S-F	1.00	1228																				X				
ZZZZZZ	1.00	1230																								
ZZZZZZ	1.00	1233																								
ZZZZZZ	1.00	1235																								
ICSA	1.00	1237																								
ICSAB	1.00	1240																				X				
CCV	1.00	1242																				X				
CCB	1.00	1244																				X				

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0354

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/10/03 End Date: 03/10/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1347																		X							
S1	1.00	1350																		X							
S2	1.00	1352																		X							
S3	1.00	1354																		X							
ZZZZZZ	1.00	1357																									
ZZZZZZ	1.00	1359																									
ICV	1.00	1401																		X							
ICB	1.00	1403																		X							
ICSA	1.00	1406																									
ICSAB	1.00	1408																		X							
PBW	1.00	1410																		X							
LCSW	1.00	1413																		X							
MW-1	1.00	1415																		X							
MW-53S	1.00	1417																		X							
MW-59S	1.00	1420																		X							
MW-54S	1.00	1422																		X							
MW-1F	1.00	1424																		X							
MW-53S-F	1.00	1426																		X							
CCV	1.00	1429																		X							
CCB	1.00	1431																		X							
MW-59S-F	1.00	1433																		X							
MW-54S-F	1.00	1436																		X							
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1440																									
ZZZZZZ	1.00	1443																									
ICSA	1.00	1445																									
ICSAB	1.00	1447																		X							
CCV	1.00	1450																		X							
CCB	1.00	1452																		X							

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0354__

Instrument ID Number: COMM_FIMS_____ Method: CV_

Start Date: 03/10/03 End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1120																X								
S0.2	1.00	1122																X								
S1	1.00	1123																X								
S2	1.00	1124																X								
S5	1.00	1126																X								
S10	1.00	1127																X								
ICV	1.00	1128																X								
ICB	1.00	1130																X								
PBW	1.00	1131																X								
LCSW	1.00	1132																X								
MW-1	1.00	1134																X								
MW-53S	1.00	1135																X								
MW-59S	1.00	1136																X								
MW-54S	1.00	1138																X								
MW-1F	1.00	1139																X								
MW-53S-F	1.00	1140																X								
CCV	1.00	1142																X								
CCB	1.00	1143																X								
MW-59S-F	1.00	1144																X								
MW-54S-F	1.00	1146																X								
ZZZZZZ	1.00	1147																								
ZZZZZZ	1.00	1148																								
ZZZZZZ	1.00	1150																								
ZZZZZZ	1.00	1151																								
ZZZZZZ	1.00	1152																								
ZZZZZZ	1.00	1154																								
CCV	1.00	1155																X								
CCB	1.00	1156																X								

QUALITY CONTROL RESULTS

Job Number.: 203171 — Report Date.: 03/17/2003

CUSTOMER: NITKEM — PROJECT: NITRATE SULFATE — ATTN: Paul Senecal

Test Method.....: 300.0 — Batch.....: 15128 — Analyst...: ckm
Method Description.: Ion Chromatography Analysis — Equipment Code....: LACHET 3 — Test Code.: CHL
Parameter.....: Chloride

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15128-002	W03BWRK019	mg/L	50.00000		50.00000						03/04/2003	1927
STD	15128-003	W03BWRK020	mg/L	30.00000		30.00000						03/04/2003	1941
STD	15128-004	W03BWRK021	mg/L	10.00000		10.00000						03/04/2003	1954
STD	15128-005	W03BWRK022	mg/L	4.00000		4.00000						03/04/2003	2008
STD	15128-006	W03BWRK023	mg/L	1.00000		1.00000						03/04/2003	2021
STD	15128-007	W03BWRK024	mg/L	0.50000 B		0.50000						03/04/2003	2035
ICV	15128-009	W03AWRK035	mg/L	25.10800		25.00000		100			90-110	03/04/2003	2101
ICB	15128-010		mg/L	0.14700 U								03/04/2003	2115
CCV	15128-011	W03AWRK035	mg/L	25.15500		25.00000		101		%	90-110	03/04/2003	2128
CCB	15128-012		mg/L	0.14700 U								03/04/2003	2142
MS	15128-013	W03ASPK001	mg/L	23.86600		24.00000	0.14700 U	99			75-125	03/04/2003	2155
LCS	15128-014	W03ALCS004	mg/L	10.43500		11.40000		92		%	85-115	03/04/2003	2209
MB	15128-016		mg/L	0.14700 U								03/04/2003	2235
MD	203152-4		mg/L	57.09900			56.95100	0.3			20.0	03/04/2003	2342
MS	203152-4	W03ASPK001	mg/L	81.43700		24.00000	56.95100	102			75-125	03/04/2003	2356
CCV	15128-023	W03AWRK035	mg/L	25.35400		25.00000		101		%	90-110	03/05/2003	0009
CCB	15128-024		mg/L	0.14700 U								03/05/2003	0023
CCV	15128-026	W03AWRK035	mg/L	25.18000		25.00000		101		%	90-110	03/05/2003	0050
CCB	15128-027		mg/L	0.14700 U								03/05/2003	0103
CCV	15128-028	W03AWRK035	mg/L	25.86700		25.00000		103		%	90-110	03/05/2003	0943
CCB	15128-029		mg/L	0.14700 U								03/05/2003	0956
LCS	15128-036	W03ALCS004	mg/L	10.21400		11.40000		90		%	85-115	03/05/2003	1130
MB	15128-038		mg/L	0.14700 U								03/05/2003	1157
CCV	15128-040	W03AWRK035	mg/L	25.48700		25.00000		102		%	90-110	03/05/2003	1224
CCB	15128-041		mg/L	0.14700 U								03/05/2003	1237
MD	203126-1		mg/L	31.72200			31.61700	0.3			20.0	03/05/2003	1251
MS	203126-1	W03ASPK001	mg/L	56.38700		24.00000	31.61700	103			75-125	03/05/2003	1304
MD	203161-2		mg/L	0.69100 B			0.72900 B	0.0380			1.0000	03/05/2003	1451
CCV	15128-052	W03AWRK035	mg/L	25.05600		25.00000		100		%	90-110	03/05/2003	1505
CCB	15128-053		mg/L	0.14700 U								03/05/2003	1518
MS	203161-2	W03ASPK001	mg/L	22.95600		24.00000	0.72900 B	93			75-125	03/05/2003	1532
CCV	15128-064	W03AWRK035	mg/L	25.14100		25.00000		101		%	90-110	03/05/2003	1746
CCB	15128-065		mg/L	0.14700 U								03/05/2003	1759
CCV	15128-076	W03AWRK035	mg/L	25.13100		25.00000		101		%	90-110	03/05/2003	2027
CCB	15128-077		mg/L	0.14700 U								03/05/2003	2041
CCV	15128-082	W03AWRK035	mg/L	25.40800		25.00000		102		%	90-110	03/05/2003	2148
CCB	15128-083		mg/L	0.14700 U								03/05/2003	2201
CCV	15128-084	W03AWRK035	mg/L	24.83400		25.00000		99		%	90-110	03/06/2003	1400
CCB	15128-085		mg/L	0.14700 U								03/06/2003	1414
LCS	15128-086	W03ALCS004	mg/L	10.12700		11.40000		89		%	85-115	03/06/2003	1427
MB	15128-088		mg/L	0.14700 U								03/06/2003	1454
MD	203171-1		mg/L	6.23700			6.22900	0.1			20.0	03/06/2003	1521
MS	203171-1	W03ASPK001	mg/L	30.81200		24.00000	6.22900	102			75-125	03/06/2003	1534
CCV	15128-096	W03AWRK035	mg/L	24.81200		25.00000		99		%	90-110	03/06/2003	1641
CCB	15128-097		mg/L	0.14700 U								03/06/2003	1655
CCV	15128-102	W03AWRK035	mg/L	24.94100		25.00000		100		%	90-110	03/06/2003	1802
CCB	15128-103		mg/L	0.14700 U								03/06/2003	1815

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203171 Report Date.: 03/17/2003

CUSTOMER: NITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15128 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15128-002	W03BWRK019	mg/L	5.00000		5.00000						03/04/2003	1927
STD	15128-003	W03BWRK020	mg/L	3.00000		3.00000						03/04/2003	1941
STD	15128-004	W03BWRK021	mg/L	1.00000		1.00000						03/04/2003	1954
STD	15128-005	W03BWRK022	mg/L	0.40000		0.40000						03/04/2003	2008
STD	15128-006	W03BWRK023	mg/L	0.10000		0.10000						03/04/2003	2021
STD	15128-007	W03BWRK024	mg/L	0.05000 B		0.05000						03/04/2003	2035
ICV	15128-009	W03AWRK035	mg/L	2.49900		2.50000		100			90-110	03/04/2003	2101
ICB	15128-010		mg/L	0.00200 U								03/04/2003	2115
CCV	15128-011	W03AWRK035	mg/L	2.50200		2.50000		100		%	90-110	03/04/2003	2128
CCB	15128-012		mg/L	0.00200 U								03/04/2003	2142
MS	15128-013	W03ASPK001	mg/L	1.96600		2.00000	0.00200 U	98			75-125	03/04/2003	2155
LCS	15128-014	W03ALCS004	mg/L	11.07500		9.71000		114		%	85-115	03/04/2003	2209
LCS	15128-015	W03ALCS004	mg/L	8.90700		9.71000		92		%	85-115	03/04/2003	2222
MB	15128-016		mg/L	0.00200 U								03/04/2003	2235
CCV	15128-023	W03AWRK035	mg/L	2.52300		2.50000		101		%	90-110	03/05/2003	0009
CCB	15128-024		mg/L	0.00200 U								03/05/2003	0023
CCV	15128-026	W03AWRK035	mg/L	2.48500		2.50000		99		%	90-110	03/05/2003	0050
CCB	15128-027		mg/L	0.00200 U								03/05/2003	0103
CCV	15128-028	W03AWRK035	mg/L	2.56100		2.50000		102		%	90-110	03/05/2003	0943
CCB	15128-029		mg/L	0.00200 U								03/05/2003	0956
MD	203152-4		mg/L	10.20600			10.21700	0.1			20.0	03/05/2003	1050
MS	203152-4	W03ASPK001	mg/L	20.74100		10.00000	10.21700	105			75-125	03/05/2003	1103
LCS	15128-036	W03ALCS004	mg/L	10.75300		9.71000		111		%	85-115	03/05/2003	1130
LCS	15128-037	W03ALCS004	mg/L	8.71800		9.71000		90		%	85-115	03/05/2003	1143
MB	15128-038		mg/L	0.00200 U								03/05/2003	1157
CCV	15128-040	W03AWRK035	mg/L	2.52500		2.50000		101		%	90-110	03/05/2003	1224
CCB	15128-041		mg/L	0.00200 U								03/05/2003	1237
MD	203126-1		mg/L	5.01700			5.01500	0.0			20.0	03/05/2003	1251
MS	203126-1	W03ASPK001	mg/L	7.23700		2.00000	5.01500	111			75-125	03/05/2003	1304
MD	203161-2		mg/L	0.00200 U			0.00200 U	0.0000			0.1000	03/05/2003	1451
CCV	15128-052	W03AWRK035	mg/L	2.49300		2.50000		100		%	90-110	03/05/2003	1505
CCB	15128-053		mg/L	0.00200 U								03/05/2003	1518
MS	203161-2	W03ASPK001	mg/L	1.90500		2.00000	0.00200 U	95			75-125	03/05/2003	1532
CCV	15128-064	W03AWRK035	mg/L	2.49400		2.50000		100		%	90-110	03/05/2003	1746
CCB	15128-065		mg/L	0.00200 U								03/05/2003	1759
CCV	15128-076	W03AWRK035	mg/L	2.49900		2.50000		100		%	90-110	03/05/2003	2027
CCB	15128-077		mg/L	0.00200 U								03/05/2003	2041
CCV	15128-082	W03AWRK035	mg/L	2.51900		2.50000		101		%	90-110	03/05/2003	2148
CCB	15128-083		mg/L	0.00200 U								03/05/2003	2201
CCV	15128-084	W03AWRK035	mg/L	2.45200		2.50000		98		%	90-110	03/06/2003	1400
CCB	15128-085		mg/L	0.00200 U								03/06/2003	1414
LCS	15128-086	W03ALCS004	mg/L	10.73100		9.71000		111		%	85-115	03/06/2003	1427
LCS	15128-087	W03ALCS004	mg/L	8.68400		9.71000		89		%	85-115	03/06/2003	1440
MB	15128-088		mg/L	0.00200 U								03/06/2003	1454
MD	203171-1		mg/L	1.16800			1.16700	0.1			20.0	03/06/2003	1521
MS	203171-1	W03ASPK001	mg/L	3.20700		2.00000	1.16700	102			75-125	03/06/2003	1534
CCV	15128-096	W03AWRK035	mg/L	2.45800		2.50000		98		%	90-110	03/06/2003	1641
CCB	15128-097		mg/L	0.00200 U								03/06/2003	1655
CCV	15128-102	W03AWRK035	mg/L	2.47100		2.50000		99		%	90-110	03/06/2003	1802
CCB	15128-103		mg/L	0.00200 U								03/06/2003	1815

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203171 Report Date.: 03/17/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15128 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15128-002	W03BWRK019	mg/L	100.00000		100.00000						03/04/2003	1927
STD	15128-003	W03BWRK020	mg/L	60.00000		60.00000						03/04/2003	1941
STD	15128-004	W03BWRK021	mg/L	20.00000		20.00000						03/04/2003	1954
STD	15128-005	W03BWRK022	mg/L	8.00000		8.00000						03/04/2003	2008
STD	15128-006	W03BWRK023	mg/L	2.00000		2.00000						03/04/2003	2021
STD	15128-007	W03BWRK024	mg/L	1.00000		1.00000						03/04/2003	2035
ICV	15128-009	W03AWRK035	mg/L	52.01900		50.00000		104			90-110	03/04/2003	2101
ICB	15128-010		mg/L	0.19800 B								03/04/2003	2115
CCV	15128-011	W03AWRK035	mg/L	52.01500		50.00000		104		%	90-110	03/04/2003	2128
CCB	15128-012		mg/L	0.01200 U								03/04/2003	2142
MS	15128-013	W03ASPK001	mg/L	19.89000		20.00000	0.01200 U	99			75-125	03/04/2003	2155
LCS	15128-014	W03ALCS004	mg/L	8.81000		9.21000		96		%	85-115	03/04/2003	2209
LCS	15128-015	W03ALCS004	mg/L	8.87700		9.21000		96		%	85-115	03/04/2003	2222
MB	15128-016		mg/L	0.01200 U								03/04/2003	2235
MD	203152-4		mg/L	58.18500			58.18000	0.0			20.0	03/04/2003	2342
MS	203152-4	W03ASPK001	mg/L	74.87500		20.00000	58.18000	83			75-125	03/04/2003	2356
CCV	15128-023	W03AWRK035	mg/L	52.27900		50.00000		105		%	90-110	03/05/2003	0009
CCB	15128-024		mg/L	0.01200 U								03/05/2003	0023
CCV	15128-026	W03AWRK035	mg/L	51.14400		50.00000		102		%	90-110	03/05/2003	0050
CCB	15128-027		mg/L	0.01200 U								03/05/2003	0103
CCV	15128-028	W03AWRK035	mg/L	53.27600		50.00000		107		%	90-110	03/05/2003	0943
CCB	15128-029		mg/L	0.01200 U								03/05/2003	0956
LCS	15128-036	W03ALCS004	mg/L	8.51400		9.21000		92		%	85-115	03/05/2003	1130
LCS	15128-037	W03ALCS004	mg/L	8.53000		9.21000		93		%	85-115	03/05/2003	1143
MB	15128-038		mg/L	0.01200 U								03/05/2003	1157
CCV	15128-040	W03AWRK035	mg/L	52.63500		50.00000		105		%	90-110	03/05/2003	1224
CCB	15128-041		mg/L	0.01200 U								03/05/2003	1237
MD	203126-1		mg/L	13.14900			13.21800	0.5			20.0	03/05/2003	1251
MS	203126-1	W03ASPK001	mg/L	33.73400		20.00000	13.21800	103			75-125	03/05/2003	1304
MD	203161-2		mg/L	32.07400			32.16300	0.3			20.0	03/05/2003	1451
CCV	15128-052	W03AWRK035	mg/L	52.51400		50.00000		105		%	90-110	03/05/2003	1505
CCB	15128-053		mg/L	0.01200 U								03/05/2003	1518
MS	203161-2	W03ASPK001	mg/L	51.66000		20.00000	32.16300	97			75-125	03/05/2003	1532
CCV	15128-064	W03AWRK035	mg/L	51.91400		50.00000		104		%	90-110	03/05/2003	1746
CCB	15128-065		mg/L	0.01200 U								03/05/2003	1759
CCV	15128-076	W03AWRK035	mg/L	51.69700		50.00000		103		%	90-110	03/05/2003	2027
CCB	15128-077		mg/L	0.01200 U								03/05/2003	2041
CCV	15128-082	W03AWRK035	mg/L	52.54200		50.00000		105		%	90-110	03/05/2003	2148
CCB	15128-083		mg/L	0.01200 U								03/05/2003	2201
CCV	15128-084	W03AWRK035	mg/L	50.86200		50.00000		102		%	90-110	03/06/2003	1400
CCB	15128-085		mg/L	0.01200 U								03/06/2003	1414
LCS	15128-086	W03ALCS004	mg/L	8.44600		9.21000		92		%	85-115	03/06/2003	1427
LCS	15128-087	W03ALCS004	mg/L	8.50800		9.21000		92		%	85-115	03/06/2003	1440
MB	15128-088		mg/L	0.01200 U								03/06/2003	1454
MD	203171-1		mg/L	5.64200			5.56400	1.4			20.0	03/06/2003	1521
MS	203171-1	W03ASPK001	mg/L	25.41800		20.00000	5.56400	99			75-125	03/06/2003	1534
CCV	15128-096	W03AWRK035	mg/L	50.35200		50.00000		101		%	90-110	03/06/2003	1641
CCB	15128-097		mg/L	0.01200 U								03/06/2003	1655
CCV	15128-102	W03AWRK035	mg/L	51.14000		50.00000		102		%	90-110	03/06/2003	1802
CCB	15128-103		mg/L	0.01200 U								03/06/2003	1815

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000011

QUALITY CONTROL RESULTS

Job Number.: 203171 Report Date.: 03/17/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15128 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15128-002	W03BWRK019	mg/L	5.00000		5.00000						03/04/2003	1927
STD	15128-003	W03BWRK020	mg/L	3.00000		3.00000						03/04/2003	1941
STD	15128-004	W03BWRK021	mg/L	1.00000		1.00000						03/04/2003	1954
STD	15128-005	W03BWRK022	mg/L	0.40000		0.40000						03/04/2003	2008
STD	15128-006	W03BWRK023	mg/L	0.10000		0.10000						03/04/2003	2021
STD	15128-007	W03BWRK024	mg/L	0.05000 B		0.05000						03/04/2003	2035
ICV	15128-009	W03AWRK035	mg/L	2.49800		2.50000		100			90-110	03/04/2003	2101
ICB	15128-010		mg/L	0.00300 U								03/04/2003	2115
CCV	15128-011	W03AWRK035	mg/L	2.50100		2.50000		100		%	90-110	03/04/2003	2128
CCB	15128-012		mg/L	0.00300 U								03/04/2003	2142
MS	15128-013	W03ASPK001	mg/L	1.95000		2.00000	0.00300 U	98			75-125	03/04/2003	2155
LCS	15128-014	W03ALCS004	mg/L	5.39500		5.00000		108		%	85-115	03/04/2003	2209
LCS	15128-015	W03ALCS004	mg/L	4.88200		5.00000		98		%	85-115	03/04/2003	2222
MB	15128-016		mg/L	0.00300 U								03/04/2003	2235
MD	203152-4		mg/L	0.97700			0.97500	0.2			20.0	03/04/2003	2342
MS	203152-4	W03ASPK001	mg/L	2.92900		2.00000	0.97500	98			75-125	03/04/2003	2356
CCV	15128-023	W03AWRK035	mg/L	2.52500		2.50000		101		%	90-110	03/05/2003	0009
CCB	15128-024		mg/L	0.00300 U								03/05/2003	0023
CCV	15128-026	W03AWRK035	mg/L	2.51600		2.50000		101		%	90-110	03/05/2003	0050
CCB	15128-027		mg/L	0.00300 U								03/05/2003	0103
CCV	15128-028	W03AWRK035	mg/L	2.56600		2.50000		103		%	90-110	03/05/2003	0943
CCB	15128-029		mg/L	0.00300 U								03/05/2003	0956
LCS	15128-036	W03ALCS004	mg/L	5.32800		5.00000		107		%	85-115	03/05/2003	1130
LCS	15128-037	W03ALCS004	mg/L	4.83100		5.00000		97		%	85-115	03/05/2003	1143
MB	15128-038		mg/L	0.00300 U								03/05/2003	1157
CCV	15128-040	W03AWRK035	mg/L	2.55800		2.50000		102		%	90-110	03/05/2003	1224
CCB	15128-041		mg/L	0.00300 U								03/05/2003	1237
MD	203126-1		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/05/2003	1251
MS	203126-1	W03ASPK001	mg/L	1.88900		2.00000	0.00300 U	94			75-125	03/05/2003	1304
MD	203161-2		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/05/2003	1451
CCV	15128-052	W03AWRK035	mg/L	2.50300		2.50000		100		%	90-110	03/05/2003	1505
CCB	15128-053		mg/L	0.00300 U								03/05/2003	1518
MS	203161-2	W03ASPK001	mg/L	1.85800		2.00000	0.00300 U	93			75-125	03/05/2003	1532
CCV	15128-064	W03AWRK035	mg/L	2.51700		2.50000		101		%	90-110	03/05/2003	1746
CCB	15128-065		mg/L	0.00300 U								03/05/2003	1759
CCV	15128-076	W03AWRK035	mg/L	2.53000		2.50000		101		%	90-110	03/05/2003	2027
CCB	15128-077		mg/L	0.00300 U								03/05/2003	2041
CCV	15128-082	W03AWRK035	mg/L	2.52400		2.50000		101		%	90-110	03/05/2003	2148
CCB	15128-083		mg/L	0.00300 U								03/05/2003	2201
CCV	15128-084	W03AWRK035	mg/L	2.46900		2.50000		99		%	90-110	03/06/2003	1400
CCB	15128-085		mg/L	0.00300 U								03/06/2003	1414
LCS	15128-086	W03ALCS004	mg/L	5.28400		5.00000		106		%	85-115	03/06/2003	1427
LCS	15128-087	W03ALCS004	mg/L	4.75800		5.00000		95		%	85-115	03/06/2003	1440
MB	15128-088		mg/L	0.00300 U								03/06/2003	1454
MD	203171-1		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/06/2003	1521
MS	203171-1	W03ASPK001	mg/L	1.89400		2.00000	0.00300 U	95			75-125	03/06/2003	1534
CCV	15128-096	W03AWRK035	mg/L	2.52000		2.50000		101		%	90-110	03/06/2003	1641
CCB	15128-097		mg/L	0.00300 U								03/06/2003	1655
CCV	15128-102	W03AWRK035	mg/L	2.49900		2.50000		100		%	90-110	03/06/2003	1802
CCB	15128-103		mg/L	0.00300 U								03/06/2003	1815

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000010

Batch #: 030304 runlog	Calibration used: 03/04/2003	Instrument: Lachat 8000 IC					
Reviewer: MM	Date: 3/17/03						
Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/04/03	19:14:31	BLANK	030304.001	epa300a.met	1	dave	
03/04/03	19:27:58	STDW03BWRK019	030304.002	epa300a.met	1	dave	Calibration Std. 1
03/04/03	19:41:25	STDW03BWRK020	030304.003	epa300a.met	1	dave	Calibration Std. 2
03/04/03	19:54:49	STDW03BWRK021	030304.004	epa300a.met	1	dave	Calibration Std. 3
03/04/03	20:08:16	STDW03BWRK022	030304.005	epa300a.met	1	dave	Calibration Std. 4
03/04/03	20:21:41	STDW03BWRK023	030304.006	epa300a.met	1	dave	Calibration Std. 5
03/04/03	20:35:07	STDW03BWRK024	030304.007	epa300a.met	1	dave	Calibration Std. 6
03/04/03	20:48:31	BLANK STD	030304.008	epa300a.met	1	dave	Calibration Std. 7
03/04/03	21:01:56	ICVW03AWRK035	030304.009	epa300a.met	1	dave	
03/04/03	21:15:22	ICB	030304.010	epa300a.met	1	dave	
03/04/03	21:28:47	CCVW03AWRK035	030304.011	epa300a.met	1	dave	
03/04/03	21:42:11	CCB	030304.012	epa300a.met	1	dave	
03/04/03	21:55:35	MS W03ASPK001	030304.013	epa300a.met	1	dave	
03/04/03	22:09:00	LCSW03ALCS004	030304.014	epa300a.met	1	dave	
03/04/03	22:22:25	LCSW03ALCS004	030304.015	epa300a.met	5	dave	
03/04/03	22:35:50	MB	030304.016	epa300a.met	1	dave	
03/04/03	22:49:16	203152-1	030304.017	epa300a.met	1	dave	
03/04/03	23:02:43	203152-2	030304.018	epa300a.met	1	dave	
03/04/03	23:16:08	203152-3	030304.019	epa300a.met	1	dave	
03/04/03	23:29:32	203152-4	030304.020	epa300a.met	1	dave	
03/04/03	23:42:59	203152-4 -MD	030304.021	epa300a.met	1	dave	
03/04/03	23:56:25	203152-4 -MS	030304.022	epa300a.met	1	dave	
03/05/03	00:09:50	CCVW03AWRK035	030304.023	epa300a.met	1	dave	
03/05/03	00:23:16	CCB	030304.024	epa300a.met	1	dave	
03/05/03	00:36:41	203152-5	030304.025	epa300a.met	1	dave	
03/05/03	00:50:06	CCVW03AWRK035	030304.026	epa300a.met	1	dave	
03/05/03	01:03:30	CCB	030304.027	epa300a.met	1	dave	
03/05/03	09:43:03	CCVW03AWRK035	030304.028	epa300a.met	1	dave	
03/05/03	09:56:30	CCB	030304.029	epa300a.met	1	dave	
03/05/03	10:09:58	203152-2	030304.030	epa300a.met	5	dave	Rerun with dilution
03/05/03	10:23:24	203152-3	030304.031	epa300a.met	5	dave	Rerun with dilution
03/05/03	10:36:48	203152-4	030304.032	epa300a.met	5	dave	Rerun with dilution
03/05/03	10:50:13	203152-4 -MD	030304.033	epa300a.met	5	dave	Rerun with dilution
03/05/03	11:03:39	203152-4 -MS	030304.034	epa300a.met	5	dave	Rerun with dilution
03/05/03	11:17:03	203152-5	030304.035	epa300a.met	5	dave	Rerun with dilution
03/05/03	11:30:27	LCSW03ALCS004	030304.036	epa300a.met	1	dave	
03/05/03	11:43:54	LCSW03ALCS004	030304.037	epa300a.met	5	dave	
03/05/03	11:57:20	MB	030304.038	epa300a.met	1	dave	
03/05/03	12:10:45	203126-1	030304.039	epa300a.met	1	dave	
03/05/03	12:24:11	CCVW03AWRK035	030304.040	epa300a.met	1	dave	
03/05/03	12:37:37	CCB	030304.041	epa300a.met	1	dave	
03/05/03	12:51:00	203126-1 -MD	030304.042	epa300a.met	1	dave	
03/05/03	13:04:26	203126-1 -MS	030304.043	epa300a.met	1	dave	
03/05/03	13:17:52	203126-2	030304.044	epa300a.met	1	dave	
03/05/03	13:31:19	203126-3	030304.045	epa300a.met	1	dave	
03/05/03	13:44:44	203126-4	030304.046	epa300a.met	1	dave	
03/05/03	13:58:11	203126-5	030304.047	epa300a.met	1	dave	

Batch #: 030304 runlog	Calibration used: 03/04/2003	Instrument: Lachat 8000 IC					
Reviewer:		Date: 03/17/03					
Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/05/03	14:11:35	203152-7	030304.048	epa300a.met	1	dave	
03/05/03	14:25:02	203161-1	030304.049	epa300a.met	1	dave	
03/05/03	14:38:26	203161-2	030304.050	epa300a.met	1	dave	
03/05/03	14:51:50	203161-2 -MD	030304.051	epa300a.met	1	dave	
03/05/03	15:05:17	CCVW03AWRK035	030304.052	epa300a.met	1	dave	
03/05/03	15:18:43	CCB	030304.053	epa300a.met	1	dave	
03/05/03	15:32:09	203161-2 -MS	030304.054	epa300a.met	1	dave	
03/05/03	15:45:34	203161-3	030304.055	epa300a.met	1	dave	
03/05/03	15:58:59	203161-4	030304.056	epa300a.met	1	dave	
03/05/03	16:12:23	203161-5	030304.057	epa300a.met	1	dave	
03/05/03	16:25:49	203161-6	030304.058	epa300a.met	1	dave	
03/05/03	16:39:17	203126-6	030304.059	epa300a.met	1	dave	
03/05/03	16:52:43	203126-7	030304.060	epa300a.met	1	dave	
03/05/03	17:06:07	203126-8	030304.061	epa300a.met	1	dave	
03/05/03	17:19:32	203126-9	030304.062	epa300a.met	1	dave	
03/05/03	17:32:58	203126-10	030304.063	epa300a.met	1	dave	
03/05/03	17:46:25	CCVW03AWRK035	030304.064	epa300a.met	1	dave	
03/05/03	17:59:51	CCB	030304.065	epa300a.met	1	dave	
03/05/03	18:13:18	203126-11	030304.066	epa300a.met	1	dave	
03/05/03	18:26:43	203126-12	030304.067	epa300a.met	1	dave	
03/05/03	18:40:08	203126-13	030304.068	epa300a.met	1	dave	
03/05/03	18:53:34	203126-14	030304.069	epa300a.met	1	dave	
03/05/03	19:06:59	203126-15	030304.070	epa300a.met	1	dave	
03/05/03	19:20:24	203126-16	030304.071	epa300a.met	1	dave	
03/05/03	19:33:49	203126-17	030304.072	epa300a.met	1	dave	
03/05/03	19:47:15	203126-18	030304.073	epa300a.met	1	dave	
03/05/03	20:00:42	203126-19	030304.074	epa300a.met	1	dave	
03/05/03	20:14:08	203126-5	030304.075	epa300a.met	5	dave	Rerun with dilution
03/05/03	20:27:35	CCVW03AWRK035	030304.076	epa300a.met	1	dave	
03/05/03	20:41:02	CCB	030304.077	epa300a.met	1	dave	
03/05/03	20:54:29	203161-3	030304.078	epa300a.met	2.5	dave	Rerun with dilution
03/05/03	21:07:53	203161-4	030304.079	epa300a.met	2.5	dave	Rerun with dilution
03/05/03	21:21:20	203161-5	030304.080	epa300a.met	2	dave	Rerun with dilution
03/05/03	21:34:45	203161-6	030304.081	epa300a.met	25	dave	Rerun with dilution
03/05/03	21:48:11	CCVW03AWRK035	030304.082	epa300a.met	1	dave	
03/05/03	22:01:36	CCB	030304.083	epa300a.met	1	dave	
03/06/03	14:00:43	CCVW03AWRK035	030304.084	epa300a.met	1	dave	
03/06/03	14:14:09	CCB	030304.085	epa300a.met	1	dave	
03/06/03	14:27:34	LCSW03ALCS004	030304.086	epa300a.met	1	dave	
03/06/03	14:40:59	LCSW03ALCS004	030304.087	epa300a.met	5	dave	
03/06/03	14:54:24	MB	030304.088	epa300a.met	1	dave	
03/06/03	15:07:50	203171-1	030304.089	epa300a.met	1	dave	
03/06/03	15:21:17	203171-1 -MD	030304.090	epa300a.met	1	dave	
03/06/03	15:34:43	203171-1 -MS	030304.091	epa300a.met	1	dave	
03/06/03	15:48:06	203171-2	030304.092	epa300a.met	1	dave	
03/06/03	16:01:30	203171-3	030304.093	epa300a.met	1	dave	
03/06/03	16:14:55	203171-4	030304.094	epa300a.met	1	dave	

Batch #: 030304 runlog	Calibration used: 03/04/2003	Instrument: Lachat 8000 IC					
Reviewer:		Date: 03/17/03					
Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/06/03	16:28:19	203126-12	030304.095	epa300a.met	5	dave	Rerun with dilution
03/06/03	16:41:42	CCVW03AWRK035	030304.096	epa300a.met	1	dave	
03/06/03	16:55:06	CCB	030304.097	epa300a.met	1	dave	
03/06/03	17:08:31	203126-13	030304.098	epa300a.met	5	dave	Rerun with dilution
03/06/03	17:21:58	203126-14	030304.099	epa300a.met	5	dave	Rerun with dilution
03/06/03	17:35:23	203126-18	030304.100	epa300a.met	5	dave	Rerun with dilution
03/06/03	17:48:49	203126-19	030304.101	epa300a.met	5	dave	Rerun with dilution
03/06/03	18:02:15	CCVW03AWRK035	030304.102	epa300a.met	1	dave	
03/06/03	18:15:41	CCB	030304.103	epa300a.met	1	dave	

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0354
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6204**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **3/18/03**			Run ID: **TOC1_030318A**		
Client ID: **MB-6204**	Batch ID: **6204**	Units: **mg/L**			Analysis Date: **3/18/03**			SeqNo: **86851**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6204**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/18/03**			Run ID: **TOC1_030318A**		
Client ID: **LCS-6204**	Batch ID: **6204**	Units: **mg/L**			Analysis Date: **3/18/03**			SeqNo: **86852**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	53	6.0	54.1	0	98	80	120	0	0		

0012

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	79.2	0.0004	mg/L	0.00005	0.0004	mg/L	0.00005	14.57%
Al 308.215	2075.3	0.0487	mg/L	0.00618	0.0487	mg/L	0.00618	12.70%
As 188.979	1.2	0.0007	mg/L	0.00110	0.0007	mg/L	0.00110	161.80%
Ba 233.527	213.5	0.0032	mg/L	0.00006	0.0032	mg/L	0.00006	1.76%
Be 313.107	2401.0	0.0003	mg/L	0.00002	0.0003	mg/L	0.00002	5.02%
Co 228.616	27.5	0.0009	mg/L	0.00004	0.0009	mg/L	0.00004	4.05%
Cr 267.716	124.6	0.0005	mg/L	0.00014	0.0005	mg/L	0.00014	29.99%
Cu 324.752	2793.7	0.0081	mg/L	0.00128	0.0081	mg/L	0.00128	15.88%
Fe 273.955	1233.4	0.0307	mg/L	0.00181	0.0307	mg/L	0.00181	5.89%
Mg 279.077	1969.0	0.0511	mg/L	0.00214	0.0511	mg/L	0.00214	4.18%
Mn 257.610	370.6	0.0011	mg/L	0.00005	0.0011	mg/L	0.00005	4.85%
Ni 231.604	49.2	0.0008	mg/L	0.00000	0.0008	mg/L	0.00000	0.49%
Pb 220.353	20.1	0.0011	mg/L	0.00045	0.0011	mg/L	0.00045	40.68%
Sb 206.836	9.1	0.0044	mg/L	0.00024	0.0044	mg/L	0.00024	5.55%
Se 196.026	2.5	0.0017	mg/L	0.00173	0.0017	mg/L	0.00173	103.62%
Tl 190.801	-2.0	-0.0011	mg/L	0.00190	-0.0011	mg/L	0.00190	177.75%
V 292.402	171.8	0.0006	mg/L	0.00013	0.0006	mg/L	0.00013	21.54%
Zn 206.200	316.7	0.0040	mg/L	0.00026	0.0040	mg/L	0.00026	6.52%
Na 330.237	173.6	0.0920	mg/L	0.11904	0.0920	mg/L	0.11904	129.38%
Cd 226.502	129.2	0.0005	mg/L	0.00006	0.0005	mg/L	0.00006	12.72%
Ti 334.940	595.4	0.0006	mg/L	0.00006	0.0006	mg/L	0.00006	9.52%
Ca 227.546	-58.0	-0.1218	mg/L	0.01628	-0.1218	mg/L	0.01628	13.36%

Sequence No.: 15
Sample ID: LCS-5996,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 3/9/2003 11:08:10 AM

Sample Prep Volume:
Data Type: Original

Mean Data: LCS-5996,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	257154.6	1.1154	mg/L	0.00611	1.1154	mg/L	0.00611	0.55%
Al 308.215	388704.2	9.1186	mg/L	0.10197	9.1186	mg/L	0.10197	1.12%
As 188.979	777.7	0.4507	mg/L	0.00041	0.4507	mg/L	0.00041	0.09%
Ba 233.527	622249.9	9.2845	mg/L	0.04244	9.2845	mg/L	0.04244	0.46%
Be 313.107	1566947.0	0.2273	mg/L	0.00123	0.2273	mg/L	0.00123	0.54%
Co 228.616	69891.1	2.3283	mg/L	0.01401	2.3283	mg/L	0.01401	0.60%
Cr 267.716	240975.9	0.9073	mg/L	0.00752	0.9073	mg/L	0.00752	0.83%
Cu 324.752	396625.2	1.1410	mg/L	0.01054	1.1410	mg/L	0.01054	0.92%
Fe 273.955	183854.3	4.5732	mg/L	0.04723	4.5732	mg/L	0.04723	1.03%
Mg 279.077	888519.2	23.070	mg/L	0.1063	23.070	mg/L	0.1063	0.46%
Mn 257.610	756848.0	2.2840	mg/L	0.00702	2.2840	mg/L	0.00702	0.31%
Ni 231.604	140301.0	2.2648	mg/L	0.02847	2.2648	mg/L	0.02847	1.26%
Pb 220.353	8198.2	0.4484	mg/L	0.00098	0.4484	mg/L	0.00098	0.22%
Sb 206.836	999.5	0.4835	mg/L	0.00042	0.4835	mg/L	0.00042	0.09%
Se 196.026	685.8	0.4518	mg/L	0.00000	0.4518	mg/L	0.00000	0.00%
Tl 190.801	844.1	0.4556	mg/L	0.00114	0.4556	mg/L	0.00114	0.25%
V 292.402	662568.0	2.2814	mg/L	0.01150	2.2814	mg/L	0.01150	0.50%
Zn 206.200	183342.7	2.2992	mg/L	0.01741	2.2992	mg/L	0.01741	0.76%
Na 330.237	41440.8	21.845	mg/L	0.2065	21.845	mg/L	0.2065	0.95%
Cd 226.502	59953.6	0.2257	mg/L	0.00191	0.2257	mg/L	0.00191	0.84%
Ti 334.940	1107.9	0.0011	mg/L	0.00002	0.0011	mg/L	0.00002	2.20%
Ca 227.546	10702.7	22.263	mg/L	0.0137	22.263	mg/L	0.0137	0.06%

Sequence No.: 16
Sample ID: B0354-02D,5996 MW-1
Analyst:
Sample Wt:
Dilution: QUF 5/8/03

Autosampler Location: 19
Date Collected: 3/9/2003 11:12:21 AM

Sample Prep Volume:
Data Type: Original

Mean Data: B0354-02D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	189.0	0.0004	mg/L	0.00018	0.0004	mg/L	0.00018	44.14%

As= 0.0038 mg/L x 1000 ug/1mg = 3.8 ug/L

Al 308.215	25088.8	~~0.5886 mg/L~~	0.01859	0.5886 mg/L	0.01859	3.16%
As 188.979	6.6	0.0038 mg/L	0.00043	0.0038 mg/L	0.00043	11.51%
Ba 233.527	1449.2	0.0216 mg/L	0.00041	0.0216 mg/L	0.00041	1.92%
Be 313.107	2191.0	0.0003 mg/L	0.00002	0.0003 mg/L	0.00002	5.53%
Co 228.616	38.0	0.0013 mg/L	0.00012	0.0013 mg/L	0.00012	9.17%
Cr 267.716	475.0	0.0018 mg/L	0.00020	0.0018 mg/L	0.00020	11.17%
Cu 324.752	2974.7	0.0085 mg/L	0.00072	0.0085 mg/L	0.00072	8.41%
Fe 273.955	5180.6	0.1289 mg/L	0.00188	0.1289 mg/L	0.00188	1.46%
Mg 279.077	69923.3	1.8147 mg/L	0.03191	1.8147 mg/L	0.03191	1.76%
Mn 257.610	2967.7	0.0089 mg/L	0.00006	0.0089 mg/L	0.00006	0.68%
Ni 231.604	82.1	0.0013 mg/L	0.00004	0.0013 mg/L	0.00004	3.01%
Pb 220.353	12.9	0.0008 mg/L	0.00027	0.0008 mg/L	0.00027	34.38%
Sb 206.836	7.7	0.0037 mg/L	0.00087	0.0037 mg/L	0.00087	23.21%
Se 196.026	4.9	0.0033 mg/L	0.00362	0.0033 mg/L	0.00362	111.07%
Tl 190.801	-3.3	-0.0018 mg/L	0.00171	-0.0018 mg/L	0.00171	96.64%
V 292.402	870.5	0.0030 mg/L	0.00026	0.0030 mg/L	0.00026	8.53%
Zn 206.200	440.4	0.0054 mg/L	0.00042	0.0054 mg/L	0.00042	7.84%
Na 330.237	14490.0	7.6307 mg/L	0.26217	7.6307 mg/L	0.26217	3.44%
Cd 226.502	78.5	0.0003 mg/L	0.00007	0.0003 mg/L	0.00007	23.08%
Ti 334.940	3187.1	0.0033 mg/L	0.00001	0.0033 mg/L	0.00001	0.26%
Ca 227.546	9861.3	20.660 mg/L	0.0718	20.660 mg/L	0.0718	0.35%

Sequence No.: 17
Sample ID: B0354-03D,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 20
Date Collected: 3/9/2003 11:16:26 AM

Sample Prep Volume:
Data Type: Original

Mean Data: B0354-03D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-42.2	-0.0003	mg/L	0.00013	-0.0003	mg/L	0.00013	47.28%
Al 308.215	5168.0	0.1212	mg/L	0.00661	0.1212	mg/L	0.00661	5.45%
As 188.979	3.1	0.0018	mg/L	0.00224	0.0018	mg/L	0.00224	125.89%
Ba 233.527	714.3	0.0106	mg/L	0.00012	0.0106	mg/L	0.00012	1.09%
Be 313.107	1817.8	0.0003	mg/L	0.00002	0.0003	mg/L	0.00002	8.46%
Co 228.616	25.5	0.0008	mg/L	0.00019	0.0008	mg/L	0.00019	22.66%
Cr 267.716	217.0	0.0008	mg/L	0.00004	0.0008	mg/L	0.00004	5.39%
Cu 324.752	1460.5	0.0042	mg/L	0.00076	0.0042	mg/L	0.00076	18.16%
Fe 273.955	2938.4	0.0731	mg/L	0.00046	0.0731	mg/L	0.00046	0.63%
Mg 279.077	85048.2	2.2071	mg/L	0.02080	2.2071	mg/L	0.02080	0.94%
Mn 257.610	1033.9	0.0031	mg/L	0.00003	0.0031	mg/L	0.00003	0.88%
Ni 231.604	60.7	0.0010	mg/L	0.00015	0.0010	mg/L	0.00015	15.49%
Pb 220.353	10.9	0.0006	mg/L	0.00006	0.0006	mg/L	0.00006	10.36%
Sb 206.836	10.3	0.0050	mg/L	0.00220	0.0050	mg/L	0.00220	44.18%
Se 196.026	0.8	0.0006	mg/L	0.00672	0.0006	mg/L	0.00672	>999.9%
Tl 190.801	-2.5	-0.0013	mg/L	0.00152	-0.0013	mg/L	0.00152	114.97%
V 292.402	104.8	0.0004	mg/L	0.00009	0.0004	mg/L	0.00009	24.20%
Zn 206.200	319.7	0.0039	mg/L	0.00014	0.0039	mg/L	0.00014	3.53%
Na 330.237	5354.7	2.8232	mg/L	0.00410	2.8232	mg/L	0.00410	0.15%
Cd 226.502	67.8	0.0003	mg/L	0.00003	0.0003	mg/L	0.00003	11.45%
Ti 334.940	2125.2	0.0021	mg/L	0.00001	0.0021	mg/L	0.00001	0.47%
Ca 227.546	2286.9	4.7908	mg/L	0.05149	4.7908	mg/L	0.05149	1.07%

Sequence No.: 18
Sample ID: B0354-04D,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 3/9/2003 11:20:30 AM

Sample Prep Volume:
Data Type: Original

Mean Data: B0354-04D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	93.3	0.0003	mg/L	0.00006	0.0003	mg/L	0.00006	19.01%
Al 308.215	1319.7	0.0310	mg/L	0.00187	0.0310	mg/L	0.00187	6.04%
As 188.979	4.5	0.0026	mg/L	0.00081	0.0026	mg/L	0.00081	31.25%
Ba 233.527	1321.4	0.0197	mg/L	0.00016	0.0197	mg/L	0.00016	0.82%

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 22, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC/SVOC/PCB CTO 848, NASA WALLOPS ISLAND SDG B0365**		
SAMPLES:	3/Aqueous		
	FTAMW-105D	FTAMW-60I	TB030503*

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0365 consists of one (1) trip blank, and two (2) environmental aqueous samples. The environmental samples were both analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on March 5, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- Positive results reported below the quantitation limit but above the method detection limit were qualified as estimated (J).
- The semivolatile initial calibration performed on March 12 exceeded the 30% (and was >50%) relative standard deviation (RSD) quality control criteria for 3-nitroaniline. Both results for 3-nitroaniline were qualified as estimated (UJ).
- The semivolatile continuing calibration performed on March 21 at 10:41 exceeded the 30% (and was >50%) percent difference quality control criteria for 4-chloroaniline. Both results for 4-chloroaniline were qualified as estimated (UJ).

- The semivolatile blank spike/blank spike duplicate was below the laboratory's percent recovery quality control criteria for hexachlorocyclopentadiene. The non-detected results for hexachlorocyclopentadiene were qualified as estimated (UJ).

Notes

The volatile blank spike sample exceeded the percent recovery quality control criteria for bromomethane. No qualifications were made on this basis because all results for bromomethane were non-detected.

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The semivolatile initial calibration performed on March 12 exceeded the 30% (but was <50%) RSD quality control criteria for 4-chloroaniline. No qualifications were made on this basis because the associated results were non-detected.

The semivolatile continuing calibration performed on March 21 at 10:41 exceeded the 25% (but was <50%) difference quality control criteria for 2,2'-oxybis(1-chloropropane), hexachlorocyclopentadiene, 2,4-dinitrophenol, 3-nitroaniline, and 4-nitroaniline. No qualifications were made on this basis because the associated results were non-detected.

The semivolatile blank spike/blank spike duplicate exceeded the laboratory's percent recovery quality control criteria for isophorone. No qualifications were made on this basis because the results for isophorone were non-detected.

The semivolatile blank spike was below the laboratory's percent recovery quality control criteria for 2,4-dimethylphenol. The RPD also exceeded the laboratory's quality control criteria. No qualifications were made on this basis because the blank spike duplicate was compliant.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances and blank spike/blank spike duplicate non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A -- Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-105D		nsample	FTAMW-105D		nsample	FTAMW-60I	
samp_date	3/5/2003		samp_date	3/5/2003		samp_date	3/5/2003	
lab_id	B0365-03A		lab_id	B0365-03A		lab_id	B0365-02A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/L		units	UG/L		units	UG/L	
Pct_Solids	0		Pct_Solids	0		Pct_Solids	0	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1		

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1		
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-60I
samp_date	3/5/2003
lab_id	B0365-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-030503
samp_date	3/5/2003
lab_id	B0365-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	9		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-030503
samp_date	3/5/2003
lab_id	B0365-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	29		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION: P

nsample	FTAMW-105D	nsample	FTAMW-60I
samp_date	3/5/2003	samp_date	3/5/2003
lab_id	B0365-03E	lab_id	B0365-02E
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5420

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	
67-66-3	Chloroform	1	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5420

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5420

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5419

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-105D
samp_date	3/5/2003
lab_id	B0365-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-105D
samp_date	3/5/2003
lab_id	B0365-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	4	J	P
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-60I
samp_date	3/5/2003
lab_id	B0365-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	UJ	C
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-60I
samp_date	3/5/2003
lab_id	B0365-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	1	J	P
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5419

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5419

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5418

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	9	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	29	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5418

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

TB-030503

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5418

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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7.					
8.					
9.					
10.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2482

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2482

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2482

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	20.29	10	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2481

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2481

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	1	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2481

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	20.16	7	J
2.		UNKNOWN	20.33	22	J
3.		UNKNOWN	25.78	10	J
4.		UNKNOWN	27.57	19	J
5.		UNKNOWN	29.02	7	J
6.		UNKNOWN	30.03	9	J
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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22.					
23.					
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29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9799F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/06/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9798F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/06/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/11/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Appendix C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0305
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl Low Conc TCL VOC + MTBE	1 Liter Amber Bottle TCL SVOC	1 Liter Amber Bottle TCL PCB	40 ml VOA Vial HCl TAL 500 ml Poly HNO3	500 ml Poly HNO3 TAL Metals	500 ml Poly HNO3 Cyanide Sulfide Nitrate	500 ml Poly HNO3 Dissolved Metals	COMMENTS
TB-030503	3/5/03 0720		X	X			01	2	2							
ETA MW-60I	3/5/03 0940		X	X			02	8	2	1	1	2	1	1		
ETA MW-105D	3/5/03 1505		X	X			03	8	2	1	1	2	1	1		
ETA MW-60I F	3/5/03 0940		X	X			04	1							1	
ETA MW-105D F	3/5/03 1505		X	X			05	1							1	
	/															
	/															
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Marlon Mangan	1700 / 3/5/03	D. Jeffrey Rocks	3-6-03 / 0900	Trip Blank water was provided by the Laboratory 3 samples shipped under Airbill NO 8286 8464 5267	4C
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

000007

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.
-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0365

HOLDING TIME
05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	CL	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	CL	03/05/03	03/10/03	03/10/03	5	0	5
UG/L	FTAMW-105D	B0365-03D	NORMAL	B0365	HG	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-60I	B0365-02D	NORMAL	B0365	HG	03/05/03	03/08/03	03/10/03	3	2	5
%	LCSW	0308LCSW1	LCS	B0365	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	PBW	0308PBW1	M_BLANK	B0365	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	FTAMW-105DF	B0365-05A	NORMAL	B0365	HGF	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-60IF	B0365-04A	NORMAL	B0365	HGF	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-105D	B0365-03D	NORMAL	B0365	M	03/05/03	03/08/03	03/09/03	3	1	4
UG/L	FTAMW-60I	B0365-02D	NORMAL	B0365	M	03/05/03	03/08/03	03/09/03	3	1	4
%	LCSW	0308LCSW1	LCS	B0365	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	PBW	0308PBW1	M_BLANK	B0365	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	FTAMW-105DF	B0365-05A	NORMAL	B0365	MF	03/05/03	03/08/03	03/09/03	3	1	4
UG/L	FTAMW-60IF	B0365-04A	NORMAL	B0365	MF	03/05/03	03/08/03	03/09/03	3	1	4
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	NTA	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	NTA	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	NTI	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	NTI	03/05/03	03/10/03	03/10/03	5	0	5
UG/L	FTAMW-105D	B0365-03E	NORMAL	B0365	OS	03/05/03	03/07/03	03/21/03	2	14	16
%	FTAMW-60I	B0365-02E	NORMAL	B0365	OS	03/05/03	03/07/03	03/21/03	2	14	16
%	SBLK3B	MB-5973	M_BLANK	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCS	LCS-5973	LCS	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCSD	LCSD-5973	LCSD	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	FTAMW-105D	B0365-03A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-60I	B0365-02A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9
%	TB-030503	B0365-01A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9
%	VBLK2N	V2B0314A	M_BLANK	B0365	OV	/ /	03/14/03	03/14/03	0	0	0
%	VBLK2NLCS	V2L0314A	LCS	B0365	OV	/ /	03/14/03	03/14/03	0	0	0
%	BBLK1D	MB-5974	M_BLANK	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCS	LCS-5975	LCS	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCSD	LCSD-5975	LCSD	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	FTAMW-105D	B0365-03E	NORMAL	B0365	PCB	03/05/03	03/07/03	03/11/03	2	4	6
%	FTAMW-60I	B0365-02E	NORMAL	B0365	PCB	03/05/03	03/07/03	03/11/03	2	4	6
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	SO4	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	SO4	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-105D	B0365-03B	NORMAL	B0365	TOC	03/05/03	03/18/03	03/18/03	13	0	13
MG/L	FTAMW-60I	B0365-02B	NORMAL	B0365	TOC	03/05/03	03/18/03	03/18/03	13	0	13
%	LCS-6204	LCS-6204	LCS	B0365	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB-6204	MB-6204	M_BLANK	B0365	TOC	/ /	03/18/03	03/18/03	0	0	0

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

March 28, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0365

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 5, 2003, and received at Mitkem on March 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of bromomethane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 2,4-dimethylphenol and hexachlorocyclopentadiene in the lab control sample and high recovery isophorone and low recovery of hexachlorocyclopentadiene in the lab control sample duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dimethylphenol and 3-nitroaniline.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/28/03

MITKEM CORPORATION

Sample Condition Form

Page 1 of 1

Received By:	Reviewed By:	Date: 3-6-03	MITKEM Project: Bo36s
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed (YES) / NO*
*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody (Present) / Absent

4)Airbill(s) (Present) / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 4°

Coolant Condition ICE

6)Sample Bottles (Intact)/Broken/Leaking

7)Date Received 3-6-03

8)Time Received 0900

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B0361 01	(OK)				H
02	OK				H
03	OK				H
04	OK				
B0365 05	OK				

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks

Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Lab File ID: V2F5400 BFB Injection Date: 03/14/03

Instrument ID: V2 BFB Injection Time: 1108

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.1
175	5.0 - 9.0% of mass 174	5.6 (7.2)1
176	95.0 - 101.0% of mass 174	74.9 (97.0)1
177	5.0 - 9.0% of mass 176	4.9 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0202M	V2S0314B	V2F5403	03/14/03	1222
02	VSTD2002M	V2S0314D	V2F5405	03/14/03	1320
03	VSTD1002M	V2S0314E	V2F5406	03/14/03	1348
04	VSTD0502M	V2S0314A	V2F5407	03/14/03	1418
05	VSTD0052M	V2S0314C	V2F5408	03/14/03	1447
06					
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22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: V2 Calibration Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Calibration Time(s): 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5408 RRF20 =V2F5403
RRF50 =V2F5407 RRF100=V2F5406 RRF200=V2F5405

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	%RSD
	Dichlorodifluoromethane	0.379	0.399	0.388	0.384	0.372	0.384	2.6
*	Chloromethane	0.454	0.475	0.462	0.444	0.416	0.450	4.9*
	Vinyl Chloride	0.334	0.353	0.361	0.353	0.338	0.348	3.2
	Bromomethane	0.130	0.112	0.099	0.097	0.097	0.107	13.2
	Chloroethane	0.164	0.166	0.168	0.162	0.160	0.164	2.1
	Trichlorofluoromethane	0.470	0.527	0.530	0.528	0.517	0.514	4.9
	1,1-Dichloroethene	0.275	0.268	0.267	0.261	0.248	0.264	3.8
	Acetone	0.111	0.089	0.092	0.090	0.083	0.093	11.2
	Carbon Disulfide	0.931	0.908	0.920	0.887	0.850	0.899	3.6
	Methylene Chloride	0.348	0.296	0.291	0.280	0.269	0.297	10.3
	trans-1,2-Dichloroethene	0.297	0.293	0.290	0.281	0.268	0.286	4.1
	Methyl tert-butyl ether	0.727	0.758	0.786	0.762	0.726	0.752	3.4
*	1,1-Dichloroethane	0.591	0.614	0.611	0.589	0.572	0.595	2.8*
	2-Butanone	0.131	0.124	0.124	0.114	0.103	0.119	9.2
	cis-1,2-Dichloroethene	0.276	0.302	0.305	0.296	0.276	0.291	4.9
	Chloroform	0.626	0.618	0.617	0.603	0.572	0.607	3.5
	1,1,1-Trichloroethane	0.555	0.555	0.555	0.549	0.534	0.550	1.7
	Carbon Tetrachloride	0.496	0.487	0.499	0.489	0.478	0.490	1.6
	1,2-Dichloroethane	0.478	0.492	0.496	0.482	0.456	0.481	3.2
	Benzene	1.024	1.110	1.091	1.038	0.940	1.041	6.4
	Trichloroethene	0.264	0.282	0.290	0.285	0.279	0.280	3.5
	1,2-Dichloropropane	0.272	0.274	0.272	0.262	0.246	0.265	4.4
	Bromodichloromethane	0.435	0.452	0.457	0.454	0.448	0.449	1.9
	cis-1,3-Dichloropropene	0.353	0.440	0.477	0.472	0.462	0.441	11.6
	4-Methyl-2-pentanone	0.127	0.167	0.192	0.199	0.203	0.178	17.9
	Toluene	0.894	1.067	1.094	1.065	0.976	1.019	8.2
	trans-1,3-Dichloropropene	0.323	0.400	0.447	0.450	0.451	0.414	13.3
	1,1,2-Trichloroethane	0.207	0.217	0.220	0.215	0.210	0.214	2.5
	Tetrachloroethene	0.366	0.362	0.369	0.357	0.348	0.360	2.3
	2-Hexanone	0.111	0.142	0.173	0.186	0.201	0.163	22.3
	Dibromochloromethane	0.407	0.433	0.448	0.445	0.451	0.437	4.2
	1,2-Dibromoethane	0.305	0.323	0.344	0.343	0.350	0.333	5.6
*	Chlorobenzene	1.064	1.054	1.016	0.931	0.853	0.984	9.1*
	Ethylbenzene	0.389	0.494	0.514	0.498	0.462	0.471	10.5
	m,p-Xylene	0.523	0.639	0.631	0.574	0.552	0.584	8.6
	o-Xylene	0.444	0.591	0.610	0.572	0.540	0.551	11.9
	Xylene (Total)	0.496	0.623	0.624	0.574	0.548	0.573	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: V2 Calibration Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Calibration Time(s): 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5408 RRF20 =V2F5403
RRF50 =V2F5407 RRF100=V2F5406 RRF200=V2F5405

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.777	1.011	1.038	0.948	0.928	0.940	10.8
Bromoform	*	0.266	0.277	0.296	0.301	0.307	0.289	6.0*
Isopropylbenzene		1.059	1.485	1.593	1.565	1.482	1.437	15.1
1,1,2,2-Tetrachloroethane	*	0.792	0.749	0.732	0.710	0.718	0.740	4.4*
1,3,5-Trimethylbenzene		2.197	2.643	2.617	2.466	2.540	2.493	7.2
1,2,4-Trimethylbenzene		2.086	2.610	2.678	2.654	2.656	2.537	10.0
1,3-Dichlorobenzene		1.400	1.446	1.482	1.478	1.494	1.460	2.6
1,4-Dichlorobenzene		1.605	1.502	1.501	1.512	1.467	1.517	3.4
1,2-Dichlorobenzene		1.308	1.308	1.345	1.313	1.284	1.312	1.7
1,2-Dibromo-3-chloropropane		0.133	0.108	0.122	0.127	0.138	0.126	9.0
1,2,4-Trichlorobenzene		0.420	0.453	0.631	0.726	0.822	0.610	28.3
1,1,2-Trichlo-1,2,2-trifluor		0.315	0.311	0.320	0.300	0.290	0.307	3.9
Methyl Acetate		0.244	0.205	0.215	0.209	0.198	0.214	8.3
Cyclohexane		0.379	0.464	0.476	0.458	0.452	0.446	8.6
Methylcyclohexane		0.366	0.442	0.457	0.434	0.416	0.423	8.2
Dibromofluoromethane		0.313	0.321	0.324	0.314	0.302	0.315	2.7
1,2-Dichloroethane-d4		0.056	0.065	0.064	0.063	0.060	0.062	6.0
Toluene-d8		1.100	1.337	1.348	1.312	1.217	1.263	8.3
Bromofluorobenzene		0.437	0.548	0.570	0.559	0.558	0.534	10.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE)#	SMC3 (TOL)#	OTHER (BFB)#	TOT OUT
01	VBLK2N	100	98	97	85	0
02	V2NLCS	100	100	96	104	0
03	TB-030503	105	97	98	81	0
04	FIAMW-60I	105	99	99	80	0
05	FIAMW-105D	106	98	100	78	0
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30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER(BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Lab File ID: V2F5410 BFB Injection Date: 03/14/03

Instrument ID: V2 BFB Injection Time: 1513

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.5
75	30.0 - 60.0% of mass 95	50.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	79.8
175	5.0 - 9.0% of mass 174	5.8 (7.3)1
176	95.0 - 101.0% of mass 174	77.7 (97.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502N	V2S0314F	V2F5411	03/14/03	1529
02	VBLK2N	V2B0314A	V2F5412	03/14/03	1559
03	V2NLCS	V2L0314A	V2F5414	03/14/03	1656
04	TB-030503	B0365-01A	V2F5418	03/14/03	1920
05	FIAMW-60I	B0365-02A	V2F5419	03/14/03	1949
06	FIAMW-105D	B0365-03A	V2F5420	03/14/03	2018
07					
08					
09					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: V2 Calibration Date: 03/14/03 Time: 1529

Lab File ID: V2F5411 Init. Calib. Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Init. Calib. Times: 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.384	0.366	0.01	4.7	20.0
Chloromethane	0.450	0.427	0.1	5.1	20.0
Vinyl Chloride	0.348	0.332	0.01	4.6	20.0
Bromomethane	0.107	0.095	0.01	11.2	20.0
Chloroethane	0.164	0.161	0.01	1.8	20.0
Trichlorofluoromethane	0.514	0.482	0.01	6.2	20.0
1,1-Dichloroethene	0.264	0.249	0.01	5.7	20.0
Acetone	0.092	0.090	0.01	2.2	20.0
Carbon Disulfide	0.899	0.861	0.01	4.2	20.0
Methylene Chloride	0.297	0.285	0.01	4.0	20.0
trans-1,2-Dichloroethene	0.286	0.274	0.01	4.2	20.0
Methyl tert-butyl ether	0.752	0.767	0.01	2.0	20.0
1,1-Dichloroethane	0.595	0.584	0.1	1.8	20.0
2-Butanone	0.119	0.119	0.01	0.0	20.0
cis-1,2-Dichloroethene	0.291	0.289	0.01	0.7	20.0
Chloroform	0.607	0.597	0.01	1.6	20.0
1,1,1-Trichloroethane	0.550	0.522	0.01	5.1	20.0
Carbon Tetrachloride	0.490	0.469	0.01	4.3	20.0
1,2-Dichloroethane	0.481	0.491	0.01	2.1	20.0
Benzene	1.041	1.035	0.01	0.6	20.0
Trichloroethene	0.280	0.269	0.01	3.9	20.0
1,2-Dichloropropane	0.265	0.259	0.01	2.3	20.0
Bromodichloromethane	0.449	0.445	0.01	0.9	20.0
cis-1,3-Dichloropropene	0.441	0.448	0.01	1.6	20.0
4-Methyl-2-pentanone	0.178	0.187	0.01	5.0	20.0
Toluene	1.019	1.031	0.01	1.2	20.0
trans-1,3-Dichloropropene	0.414	0.428	0.01	3.4	20.0
1,1,2-Trichloroethane	0.214	0.217	0.01	1.4	20.0
Tetrachloroethene	0.360	0.347	0.01	3.6	20.0
2-Hexanone	0.163	0.171	0.01	4.9	20.0
Dibromochloromethane	0.437	0.442	0.01	1.1	20.0
1,2-Dibromoethane	0.333	0.339	0.01	1.8	20.0
Chlorobenzene	0.984	0.972	0.3	1.2	20.0
Ethylbenzene	0.471	0.482	0.01	2.3	20.0
m,p-Xylene	0.584	0.593	0.01	1.5	20.0
o-Xylene	0.551	0.583	0.01	5.8	20.0
Xylene (Total)	0.573	0.590	0.01	3.0	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: V2 Calibration Date: 03/14/03 Time: 1529

Lab File ID: V2F5411 Init. Calib. Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Init. Calib. Times: 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	0.940	1.003	0.01	6.7	20.0
Bromoform	0.289	0.300	0.1	3.8	20.0
Isopropylbenzene	1.437	1.504	0.01	4.7	20.0
1,1,2,2-Tetrachloroethane	0.740	0.714	0.3	3.5	20.0
1,3,5-Trimethylbenzene	2.493	2.372	0.01	4.8	20.0
1,2,4-Trimethylbenzene	2.537	2.410	0.01	5.0	20.0
1,3-Dichlorobenzene	1.460	1.353	0.01	7.3	20.0
1,4-Dichlorobenzene	1.517	1.387	0.01	8.6	20.0
1,2-Dichlorobenzene	1.312	1.256	0.01	4.3	20.0
1,2-Dibromo-3-chloropropane	0.126	0.115	0.01	8.7	20.0
1,2,4-Trichlorobenzene	0.610	0.576	0.01	5.6	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.307	0.306	0.01	0.3	20.0
Methyl Acetate	0.214	0.222	0.01	3.7	20.0
Cyclohexane	0.446	0.433	0.01	2.9	20.0
Methylcyclohexane	0.423	0.415	0.01	1.9	20.0
Dibromofluoromethane	0.315	0.315	0.01	0.0	20.0
1,2-Dichloroethane-d4	0.062	0.066	0.01	6.4	20.0
Toluene-d8	1.263	1.272	0.01	0.7	20.0
Bromofluorobenzene	0.534	0.540	0.01	1.1	20.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: V2B0314A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5412

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: V2B0314A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5412

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK2N

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: V2B0314A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5412

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/14/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: V2NLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		48	96	48-135
Chloromethane	50		49	98	60-118
Vinyl Chloride	50		50	100	65-113
Bromomethane	50		120	240*	73-122
Chloroethane	50		59	118	72-118
Trichlorofluoromethane	50		55	110	68-129
1,1-Dichloroethene	50		50	100	67-121
Acetone	50		58	116	38-161
Carbon Disulfide	50		51	102	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		52	104	71-124
Methyl tert-butyl ether	50		50	100	75-123
1,1-Dichloroethane	50		52	104	83-116
2-Butanone	50		50	100	64-139
cis-1,2-Dichloroethene	50		50	100	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		51	102	81-122
Carbon Tetrachloride	50		52	104	79-125
1,2-Dichloroethane	50		53	106	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		50	100	77-121
1,2-Dichloropropane	50		51	102	81-116
Bromodichloromethane	50		52	104	90-114
cis-1,3-Dichloropropene	50		51	102	78-119
4-Methyl-2-pentanone	50		50	100	57-138
Toluene	50		53	106	81-121
trans-1,3-Dichloroprope	50		52	104	85-118
1,1,2-Trichloroethane	50		53	106	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: V2NLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		51	102	73-121
2-Hexanone	50		49	98	53-145
Dibromochloromethane	50		51	102	80-124
1,2-Dibromoethane	50		51	102	80-124
Chlorobenzene	50		51	102	82-118
Ethylbenzene	50		54	108	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		55	110	77-128
Bromoform	50		53	106	77-130
Isopropylbenzene	50		54	108	58-148
1,1,2,2-Tetrachloroetha	50		48	96	76-125
1,3,5-Trimethylbenzene	50		48	96	76-116
1,2,4-Trimethylbenzene	50		48	96	77-117
1,3-Dichlorobenzene	50		47	94	80-116
1,4-Dichlorobenzene	50		46	92	80-114
1,2-Dichlorobenzene	50		48	96	81-116
1,2-Dibromo-3-chloropro	50		46	92	71-126
1,2,4-Trichlorobenzene	50		44	88	67-114
1,1,2-Trichlo-1,2,2-tri	50		53	106	70-130
Methyl Acetate	50		52	104	70-130
Cyclohexane	50		50	100	70-130
Methylcyclohexane	50		51	102	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0365	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard P Spada III	CHECKED BY	APPROVED BY	DATE 5/16/03

Sample TB-030503

Methylene Chloride = 29 ug/L

$$\text{Methylene Chloride} = \frac{(167010)(50\ ug/L)}{(980945)(0.297)} = 28.66\ ug/L$$

Data File: V2F5418.D
Report Date: 21-Mar-2003 09:23

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v2.i\030314A.B\V2F5418.D
Lab Smp Id: B0365-01A Client Smp ID: TB-030503
Inj Date : 14-MAR-2003 19:20
Operator : YD Inst ID: v2.i
Smp Info : TETRA,B0365-01A,TB-030503,V2B0314A,,B0365
Misc Info : 06-MAR-03,
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v2.i\030314A.B\v28260.m
Meth Date : 21-Mar-2003 09:17 mtl Quant Type: ISTD
Cal Date : 14-MAR-2003 14:47 Cal File: V2F5408.D ✓
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	9 Acetone	43	2.799	2.801	(0.494)	16420	9.04265	9
	14 Methylene Chloride	84	3.207	3.208	(0.565)	167010	28.6829	29
$	30 Dibromofluoromethane	113	4.951	4.952	(0.873)	325227	52.6582	53
$	35 1,2-Dichloroethane-d4	102	5.306	5.308	(0.936)	59010	48.6979	49
*	38 Fluorobenzene	96	5.672	5.673	(1.000)	980945	50.0000	
$	47 Toluene-d8	98	7.479	7.480	(0.805)	787772	49.1612	49
*	57 Chlorobenzene-d5	117	9.286	9.287	(1.000)	634512	50.0000	
$	68 Bromofluorobenzene	95	10.842	10.844	(1.168)	275099	40.5602	40
*	81 1,4-Dichlorobenzene-d4	152	12.273	12.275	(1.000)	252112	50.0000	

SB 3/21/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Lab File ID: S3C2278 DFTPP Injection Date: 03/12/03

Instrument ID: S3 DFTPP Injection Time: 1030

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	50.4
68	Less than 2.0% of mass 69	0.9 (1.9)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	59.4
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	23.8
365	Greater than 1.0% of mass 198	3.56
441	Present, but less than mass 443	10.1
442	40.0 - 99.9% of mass 198	71.3
443	17.0 - 23.0% of mass 442	14.3 (20.0)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503L	SS0312A	S3C2279	03/12/03	1051
02	SSTD1603L	SS0312B	S3C2280	03/12/03	1136
03	SSTD0103L	SS0312C	S3C2281	03/12/03	1305
04	SSTD1203L	SS0312D	S3C2282	03/12/03	1350
05	SSTD0203L	SS0312E	S3C2283	03/12/03	1435
06	SSTD0803L	SS0312F	S3C2284	03/12/03	1521
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6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.390					1.399	3.2*
bis(2-Chloroethyl)Ether	* 1.100					1.112	4.4*
2-Chlorophenol	* 1.371					1.295	3.5*
2-Methylphenol	* 1.198					1.130	3.8*
2,2'-oxybis(1-Chloropropane)	* 1.235					1.228	8.5*
4-Methylphenol	* 1.129					1.108	1.6*
N-Nitroso-di-n-propylamine	* 0.729					0.820	7.3*
Hexachloroethane	* 0.627					0.609	2.4*
Nitrobenzene	* 0.406					0.416	4.6*
Isophorone	* 0.535					0.541	2.3*
2-Nitrophenol	* 0.219					0.207	5.1*
2,4-Dimethylphenol	* 0.383					0.349	7.8*
2,4-Dichlorophenol	* 0.356					0.321	8.1*
Naphthalene	* 1.196					1.127	4.2*
4-Chloroaniline	* 0.251					0.255	31.9*
bis(2-Chloroethoxy)methane	* 0.403					0.396	2.1*
Hexachlorobutadiene	* 0.220					0.214	4.2*
4-Chloro-3-Methylphenol	* 0.348					0.331	4.0*
2-Methylnaphthalene	* 1.032					0.959	7.5*
Hexachlorocyclopentadiene	* 0.369					0.323	10.7*
2,4,6-Trichlorophenol	* 0.424					0.387	7.2*
2,4,5-Trichlorophenol	* 0.457					0.412	7.4*
2-Chloronaphthalene	* 1.346					1.224	7.1*
2-Nitroaniline	* 0.518					0.527	2.8*
Dimethylphthalate	* 1.415					1.385	1.7*
Acenaphthylene	* 1.879					1.819	2.1*
2,6-Dinitrotoluene	* 0.318					0.308	2.6*
3-Nitroaniline	* 0.274					0.181	52.2*
Acenaphthene	* 1.311					1.218	5.3*
2,4-Dinitrophenol	* 0.201					0.167	17.9*
4-Nitrophenol	* 0.265					0.267	6.2*
Dibenzofuran	* 2.250					2.192	5.6*
2,4-Dinitrotoluene	* 0.456					0.427	7.5*
Diethylphthalate	* 1.413					1.367	3.2*
4-Chlorophenyl-phenylether	* 0.600					0.656	7.8*
Fluorene	* 1.325					1.349	7.0*
4-Nitroaniline	* 0.111					0.150	18.7*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: S3 Calibration Date(s): 03/12/03 03/12/03

Calibration Time(s): 1051 1521

LAB FILE ID: RRF160=S3C2280

COMPOUND	RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.177						0.159	11.0*
N-Nitrosodiphenylamine (1)	* 0.407						0.394	20.1*
4-Bromophenyl-phenylether	* 0.262						0.243	5.7*
Hexachlorobenzene	* 0.255						0.236	5.7*
Pentachlorophenol	* 0.166						0.143	15.2*
Phenanthrene	* 1.296						1.190	7.1*
Anthracene	* 1.261						1.166	6.3*
Di-n-butylphthalate	* 1.451						1.374	4.8*
Fluoranthene	* 1.230						1.143	7.2*
Pyrene	* 1.223						1.206	1.6*
Butylbenzylphthalate	* 0.629						0.613	2.3*
3,3'-Dichlorobenzidine	0.136						0.147	12.9
Benzo(a)anthracene	* 1.092						1.086	1.1*
Chrysene	* 0.963						1.034	5.0*
bis(2-Ethylhexyl)phthalate	* 0.824						0.878	6.6*
Di-n-octylphthalate	* 2.687						2.408	13.8*
Benzo(b)fluoranthene	* 1.959						1.686	12.1*
Benzo(k)fluoranthene	* 1.683						1.669	6.2*
Benzo(a)pyrene	* 1.582						1.448	6.9*
Indeno(1,2,3-cd)pyrene	* 1.678						1.536	6.2*
Dibenzo(a,h)anthracene	* 1.479						1.323	8.0*
Benzo(g,h,i)perylene	* 1.338						1.245	6.0*
Nitrobenzene-d5	0.436						0.440	2.2*
2-Fluorobiphenyl	* 1.695						1.579	4.7*
Terphenyl-d14	* 0.882						0.901	1.7*
Phenol-d5	* 1.296						1.322	4.2*
2-Fluorophenol	* 1.164						1.122	3.9*
2,4,6-Tribromophenol	* 0.128						0.116	8.5*
2-Chlorophenol-d4	* 1.326						1.291	1.9*
1,2-Dichlorobenzene-d4	* 0.981						0.924	3.9*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK

DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Lab File ID: S3C2473 DFTPP Injection Date: 03/21/03

Instrument ID: S3 DFTPP Injection Time: 1020

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	51.2
68	Less than 2.0% of mass 69	0.7 (1.6)1
69	Mass 69 relative abundance	46.2
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	57.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.2
275	10.0 - 30.0% of mass 198	25.9
365	Greater than 1.0% of mass 198	5.03
441	Present, but less than mass 443	12.7
442	40.0 - 99.9% of mass 198	81.6
443	17.0 - 23.0% of mass 442	15.9 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Z	SS0321A	S3C2474	03/21/03	1041
02	SBLK3B	MB-5973	S3C2477	03/21/03	1248
03	S3BLCS	LCS-5973	S3C2478	03/21/03	1330
04	S3BLCSD	LCSD-5973	S3C2479	03/21/03	1412
05	FIAMW-60I	B0365-02E	S3C2481	03/21/03	1536
06	FIAMW-105D	B0365-03E	S3C2482	03/21/03	1618
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: S3 Calibration Date: 03/21/03 Time: 1041

Lab File ID: S3C2474 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.399	1.365	0.050	-2.4	20.0
bis(2-Chloroethyl)Ether	1.112	1.170	0.050	5.2	100
2-Chlorophenol	1.295	1.278	0.050	-1.3	100
2-Methylphenol	1.130	1.112	0.050	-1.6	100
2,2'-oxybis(1-Chloropropane)	1.228	1.582	0.050	-28.8	100
4-Methylphenol	1.108	1.104	0.050	-0.4	100
N-Nitroso-di-n-propylamine	0.820	0.848	0.050	3.4	100
Hexachloroethane	0.609	0.632	0.050	3.8	100
Nitrobenzene	0.416	0.388	0.050	-6.7	100
Isophorone	0.541	0.564	0.050	4.2	100
2-Nitrophenol	0.207	0.186	0.050	-10.1	20.0
2,4-Dimethylphenol	0.349	0.286	0.050	-18.0	100
2,4-Dichlorophenol	0.321	0.290	0.050	-9.6	20.0
Naphthalene	1.127	1.064	0.050	-5.6	100
4-Chloroaniline	0.255	0.113	0.050	-55.7	100
bis(2-Chloroethoxy)methane	0.396	0.379	0.050	-4.3	100
Hexachlorobutadiene	0.214	0.186	0.050	-13.1	20.0
4-Chloro-3-Methylphenol	0.331	0.336	0.050	1.5	20.0
2-Methylnaphthalene	0.959	0.934	0.050	-2.6	100
Hexachlorocyclopentadiene	0.323	0.181	0.050	-44.0	100
2,4,6-Trichlorophenol	0.387	0.351	0.050	-9.3	100
2,4,5-Trichlorophenol	0.412	0.351	0.050	-14.8	100
2-Chloronaphthalene	1.224	1.083	0.050	-11.5	100
2-Nitroaniline	0.527	0.496	0.050	-5.9	100
Dimethylphthalate	1.385	1.375	0.050	-0.7	100
Acenaphthylene	1.819	1.844	0.050	1.4	100
2,6-Dinitrotoluene	0.308	0.299	0.050	-2.9	100
3-Nitroaniline	0.181	0.264	0.050	45.8	100
Acenaphthene	1.218	1.172	0.050	-3.8	20.0
2,4-Dinitrophenol	0.167	0.115	0.050	-31.1	100
4-Nitrophenol	0.267	0.213	0.050	-20.2	100
Dibenzofuran	2.192	2.018	0.050	-7.9	100
2,4-Dinitrotoluene	0.427	0.390	0.050	-8.7	100
Diethylphthalate	1.367	1.451	0.050	6.1	100
4-Chlorophenyl-phenylether	0.656	0.588	0.050	-10.4	100
Fluorene	1.349	1.310	0.050	-2.9	100
4-Nitroaniline	0.150	0.220	0.050	-46.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: S3 Calibration Date: 03/21/03 Time: 1041

Lab File ID: S3C2474 Init. Calib. Date(s): 03/12/03 03/12/03

Init. Calib. Times: 1051 1521

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.159	0.129	0.050	-18.9	100
N-Nitrosodiphenylamine(1)	0.394	0.410	0.050	4.1	20.0
4-Bromophenyl-phenylether	0.243	0.205	0.050	-15.6	100
Hexachlorobenzene	0.236	0.226	0.050	-4.2	100
Pentachlorophenol	0.143	0.128	0.050	-10.5	20.0
Phenanthrene	1.190	1.111	0.050	-6.6	100
Anthracene	1.166	1.026	0.050	-12.0	100
Di-n-butylphthalate	1.374	1.438	0.050	4.6	100
Fluoranthene	1.143	1.132	0.050	-1.0	20.0
Pyrene	1.206	1.237	0.050	2.6	100
Butylbenzylphthalate	0.613	0.690	0.050	12.6	100
3,3'-Dichlorobenzidine	0.147	0.180		22.4	
Benzo(a)anthracene	1.086	1.036	0.050	-4.6	100
Chrysene	1.034	0.984	0.050	-4.8	100
bis(2-Ethylhexyl)phthalate	0.878	1.007	0.050	14.7	100
Di-n-octylphthalate	2.408	2.677	0.050	11.2	20.0
Benzo(b)fluoranthene	1.686	1.569	0.050	-6.9	100
Benzo(k)fluoranthene	1.669	1.644	0.050	-1.5	100
Benzo(a)pyrene	1.448	1.343	0.050	-7.2	20.0
Indeno(1,2,3-cd)pyrene	1.536	1.733	0.050	12.8	100
Dibenzo(a,h)anthracene	1.323	1.459	0.050	10.3	100
Benzo(g,h,i)perylene	1.245	1.429	0.050	14.8	100
Nitrobenzene-d5	0.440	0.410	0.050	-6.8	100
2-Fluorobiphenyl	1.579	1.379	0.050	-12.7	100
Terphenyl-d14	0.901	0.894	0.050	-0.8	100
Phenol-d5	1.322	1.274	0.050	-3.6	100
2-Fluorophenol	1.122	1.122	0.050	0.0	100
2,4,6-Tribromophenol	0.116	0.108	0.050	-6.9	100
2-Chlorophenol-d4	1.291	1.296	0.050	0.4	100
1,2-Dichlorobenzene-d4	0.924	0.910	0.050	-1.5	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK3B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: MB-5973

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2477

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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29.					
30.					

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		22	88	0-127
bis(2-Chloroethyl)Ether	25		23	92	46-109
2-Chlorophenol	25		21	84	22-117
2-Methylphenol	25		16	64	40-104
2,2'-oxybis(1-Chloropro	25		29	116	10-134
4-Methylphenol	25		20	80	35-106
N-Nitroso-di-n-prop.(1)	25		25	100	44-122
Hexachloroethane	25		18	72	24-104
Nitrobenzene	25		22	88	47-112
Isophorone	25		32	128*	48-118
2-Nitrophenol	25		21	84	29-122
2,4-Dimethylphenol	25		3	12*	14-109
2,4-Dichlorophenol	25		20	80	31-122
Naphthalene	25		21	84	38-117
4-Chloroaniline	25		12	48	0-152
bis(2-Chloroethoxy)meth	25		23	92	49-112
Hexachlorobutadiene	25		15	60	28-109
4-Chloro-3-Methylphenol	25		22	88	48-117
2-Methylnaphthalene	25		17	68	43-113
Hexachlorocyclopentadie	25		5	20*	34-103
2,4,6-Trichlorophenol	25		20	80	34-127
2,4,5-Trichlorophenol	25		20	80	32-131
2-Chloronaphthalene	25		20	80	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		24	96	53-124
Acenaphthylene	25		24	96	50-119
2,6-Dinitrotoluene	25		24	96	52-122
3-Nitroaniline	25		19	76	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		23	92	50-121
2,4-Dinitrophenol	25		14	56	0-144
4-Nitrophenol	25		18	72	0-160
Dibenzofuran	25		17	68	51-122
2,4-Dinitrotoluene	25		22	88	52-126
Diethylphthalate	25		27	108	53-126
4-Chlorophenyl-phenylet	25		22	88	50-124
Fluorene	25		23	92	52-125
4-Nitroaniline	25		16	64	47-117
4,6-Dinitro-2-methylphe	25		18	72	3-151
N-Nitrosodiphenylamine	25		36	144	50-150
4-Bromophenyl-phenyleth	25		21	84	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		20	80	5-125
Phenanthrene	25		23	92	52-128
Anthracene	25		21	84	52-127
Di-n-butylphthalate	25		27	108	56-132
Fluoranthene	25		24	96	53-130
Pyrene	25		27	108	53-131
Butylbenzylphthalate	25		30	120	54-128
3,3'-Dichlorobenzidine	25		15	60	41-117
Benzo(a)anthracene	25		24	96	56-124
Chrysene	25		24	96	53-123
bis(2-Ethylhexyl)phthal	25		29	116	56-127
Di-n-octylphthalate	25		27	108	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		24	96	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		27	108	23-152
Dibenzo(a,h)anthracene	25		26	104	60-122
Benzo(g,h,i)perylene	25		28	112	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	24	96	9	40	0-127
bis(2-Chloroethyl)Ether	25	24	96	4	40	46-109
2-Chlorophenol	25	22	88	5	40	22-117
2-Methylphenol	25	19	76	17	40	40-104
2,2'-oxybis(1-Chloropro	25	29	116	0	40	10-134
4-Methylphenol	25	23	92	14	40	35-106
N-Nitroso-di-n-prop.(1)	25	27	108	8	40	44-122
Hexachloroethane	25	15	60	18	40	24-104
Nitrobenzene	25	24	96	9	40	47-112
Isophorone	25	33	132*	3	40	48-118
2-Nitrophenol	25	22	88	5	40	29-122
2,4-Dimethylphenol	25	5	20	50*	40	14-109
2,4-Dichlorophenol	25	22	88	10	40	31-122
Naphthalene	25	21	84	0	40	38-117
4-Chloroaniline	25	16	64	28	40	0-152
bis(2-Chloroethoxy)meth	25	24	96	4	40	49-112
Hexachlorobutadiene	25	12	48	22	40	28-109
4-Chloro-3-Methylphenol	25	24	96	9	40	48-117
2-Methylnaphthalene	25	17	68	0	40	43-113
Hexachlorocyclopentadie	25	4	16*	22	40	34-103
2,4,6-Trichlorophenol	25	22	88	10	40	34-127
2,4,5-Trichlorophenol	25	22	88	10	40	32-131
2-Chloronaphthalene	25	21	84	5	40	47-116
2-Nitroaniline	25	19	76	11	40	51-120
Dimethylphthalate	25	24	96	0	40	53-124
Acenaphthylene	25	24	96	0	40	50-119
2,6-Dinitrotoluene	25	23	92	4	40	52-122
3-Nitroaniline	25	12	48	45*	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
*. Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	23	92	0	40	50-121
2,4-Dinitrophenol	25	16	64	13	40	0-144
4-Nitrophenol	25	20	80	10	40	0-160
Dibenzofuran	25	18	72	6	40	51-122
2,4-Dinitrotoluene	25	22	88	0	40	52-126
Diethylphthalate	25	26	104	4	40	53-126
4-Chlorophenyl-phenylet	25	22	88	0	40	50-124
Fluorene	25	24	96	4	40	52-125
4-Nitroaniline	25	18	72	12	40	47-117
4,6-Dinitro-2-methylphe	25	19	76	5	40	3-151
N-Nitrosodiphenylamine	25	37	148	3	40	50-150
4-Bromophenyl-phenyleth	25	22	88	5	40	51-124
Hexachlorobenzene	25	24	96	0	40	52-124
Pentachlorophenol	25	21	84	5	40	5-125
Phenanthrene	25	23	92	0	40	52-128
Anthracene	25	22	88	5	40	52-127
Di-n-butylphthalate	25	28	112	4	40	56-132
Fluoranthene	25	24	96	0	40	53-130
Pyrene	25	28	112	4	40	53-131
Butylbenzylphthalate	25	31	124	3	40	54-128
3,3'-Dichlorobenzidine	25	17	68	12	40	41-117
Benzo(a)anthracene	25	25	100	4	40	56-124
Chrysene	25	25	100	4	40	53-123
bis(2-Ethylhexyl)phthal	25	30	120	3	40	56-127
Di-n-octylphthalate	25	27	108	0	40	59-138
Benzo(b)fluoranthene	25	24	96	0	40	58-126
Benzo(k)fluoranthene	25	25	100	4	40	60-124
Benzo(a)pyrene	25	23	92	4	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: S3BLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	26	104	4	40	23-152
Dibenzo(a,h)anthracene	25	26	104	0	40	60-122
Benzo(g,h,i)perylene	25	27	108	4	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 2 out of 59 outside limits
Spike Recovery: 5 out of 118 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job-4740 SDG-B0365	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/6/03

Sample FTAMW-105D bis(2-ethylhexyl)phthalate = 4 ug/L

$$\text{bis(2-ethylhexyl)phthalate} = \frac{(44124)(40\text{ mg})(1000\text{ ml})}{(464775)(0.878)(1\text{ L})(1000\text{ ml})} = 4.325\text{ mg/mL} = \text{ug/L}$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2482

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: B0365-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2482

Level: (low/med) LOW Date Received: 03/06/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/07/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

Data File: S3C2482.D
Report Date: 25-Mar-2003 15:50

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030321.B\S3C2482.D
Lab Smp Id: B0365-03E Client Smp ID: FIAMW-105D
Inj Date : 21-MAR-2003 16:18
Operator : WC Inst ID: s3.i
Smp Info : B0365-03E,FIAMW-105D,5973,,,B0365
Misc Info : ,,,1,,,,,,,7-MAR-03,6-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S3.i\030321.B\S3_8270C.m
Meth Date : 21-Mar-2003 11:21 mtl Quant Type: ISTD
Cal Date : 12-MAR-2003 15:21 Cal File: S3C2284.D ✓
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub ✓
Target Version: 4.03

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	3 2-Fluorophenol	112	5.332	5.325	(0.710)	283596	63.7269	64
$	5 Phenol-d5	99	6.955	6.955	(0.927)	356508	68.0204	68
$	9 2-Chlorophenol-d4	132	7.132	7.131	(0.950)	349820	68.3567	68
*	12 1,4-Dichlorobenzene-d4	152	7.506	7.505	(1.000)	158605	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	7.789	7.788	(1.038)	154038	42.0407	42
$	22 Nitrobenzene-d5	82	8.563	8.568	(0.863)	276144	44.5657	44
*	31 Naphthalene-d8	136	9.920	9.925	(1.000)	563124	40.0000	
$	41 2-Fluorobiphenyl	172	12.100	12.110	(0.900)	535102	41.0761	41
*	48 Acenaphthene-d10	164	13.441	13.445	(1.000)	330090	40.0000	
$	60 2,4,6-Tribromophenol	330	15.065	15.069	(0.915)	103775	68.6576	69
*	64 Phenanthrene-d10	188	16.470	16.480	(1.000)	521731	40.0000	
$	72 Terphenyl-d14	244	19.755	19.760	(0.903)	522920	49.9517	50
*	76 Chrysene-d12	240	21.871	21.881	(1.000)	464775	40.0000	
	78 bis(2-Ethylhexyl)phthalate	149	21.951	21.961	(1.004)	44124	4.32529	4(a)
*	83 Perylene-d12	264	24.601	24.605	(1.000)	318067	40.0000	

JC
3-25-03

000106

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BC	AR1660BC	03/10/03	1428	6.79	22.14
23	BBLK1D	MB-5974	03/10/03	1550	6.79	22.14
24	B1DLCS	LCS-5975	03/10/03	1630	6.79	22.13
25	B1DLCSD	LCSD-5975	03/10/03	1706	6.78	22.13
26	AR1660BD	AR1660BD	03/11/03	0009	6.78	22.13
27	FIAMW-60I	B0365-02E	03/11/03	0120	6.78	22.13
28	FIAMW-105D	B0365-03E	03/11/03	0155	6.78	22.13
29	AR1660BE	AR1660BE	03/11/03	1009	6.78	22.12
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BC	AR1660BC	03/10/03	1428	8.45	25.36
23	BBLK1D	MB-5974	03/10/03	1550	8.46	25.36
24	B1DLCS	LCS-5975	03/10/03	1630	8.45	25.36
25	B1DLCSD	LCSD-5975	03/10/03	1706	8.45	25.35
26	AR1660BD	AR1660BD	03/11/03	0009	8.46	25.36
27	FIAMW-60I	B0365-02E	03/11/03	0120	8.45	25.35
28	FIAMW-105D	B0365-03E	03/11/03	0155	8.45	25.35
29	AR1660BE	AR1660BE	03/11/03	1009	8.45	25.34
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/10/03 Time: 1428

Lab File ID: E1D9780F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11694.000	0.01	2.0	15.0
(2)	24115.960	22721.000	0.01	5.8	15.0
(3)	14202.320	13326.000	0.01	6.2	15.0
Aroclor-1260	29455.240	27596.000	0.01	6.3	15.0
(2)	40190.280	42363.000	0.01	5.4	15.0
(3)	23147.960	22171.000	0.01	4.2	15.0
Tetrachloro-m-xylene	503358.00	508250.00	0.01	1.0	15.0
Decachlorobiphenyl	581298.00	521450.00	0.01	10.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/10/03 Time: 1428

Lab File ID: E1D9780R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44933.000	0.01	4.3	15.0
(2)	24183.600	22504.000	0.01	6.9	15.0
(3)	20737.640	19815.000	0.01	4.4	15.0
Aroclor-1260	45409.320	43191.000	0.01	4.9	15.0
(2)	46248.440	43857.000	0.01	5.2	15.0
(3)	64584.960	65965.000	0.01	2.1	15.0
Tetrachloro-m-xylene	741526.00	744150.00	0.01	0.4	15.0
Decachlorobiphenyl	711418.00	711500.00	0.01	0.0	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/11/03 Time: 0009

Lab File ID: E1D9796F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11152.000	0.01	6.5	15.0
(2)	24115.960	21739.000	0.01	9.8	15.0
(3)	14202.320	12672.000	0.01	10.8	15.0
Aroclor-1260	29455.240	26518.000	0.01	10.0	15.0
(2)	40190.280	40307.000	0.01	0.3	15.0
(3)	23147.960	21252.000	0.01	8.2	15.0
Tetrachloro-m-xylene	503358.00	486200.00	0.01	3.4	15.0
Decachlorobiphenyl	581298.00	524150.00	0.01	9.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/11/03 Time: 0009

Lab File ID: E1D9796R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43754.000	0.01	6.8	15.0
(2)	24183.600	22061.000	0.01	8.8	15.0
(3)	20737.640	19649.000	0.01	5.2	15.0
Aroclor-1260	45409.320	43363.000	0.01	4.5	15.0
(2)	46248.440	44446.000	0.01	3.9	15.0
(3)	64584.960	65294.000	0.01	1.1	15.0
Tetrachloro-m-xylene	741526.00	724800.00	0.01	2.2	15.0
Decachlorobiphenyl	711418.00	748500.00	0.01	5.2	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/11/03 Time: 1009

Lab File ID: E1D9814F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	11767.000	0.01	1.4	15.0
(2)	24115.960	23185.000	0.01	3.9	15.0
(3)	14202.320	13488.000	0.01	5.0	15.0
Aroclor-1260	29455.240	28707.000	0.01	2.5	15.0
(2)	40190.280	42781.000	0.01	6.4	15.0
(3)	23147.960	22804.000	0.01	1.5	15.0
Tetrachloro-m-xylene	503358.00	517500.00	0.01	2.8	15.0
Decachlorobiphenyl	581298.00	551400.00	0.01	5.1	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID: E1 Calibration Date: 03/11/03 Time: 1009

Lab File ID: E1D9814R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	46112.000	0.01	1.8	15.0
(2)	24183.600	23085.000	0.01	4.5	15.0
(3)	20737.640	20647.000	0.01	0.4	15.0
Aroclor-1260	45409.320	44908.000	0.01	1.1	15.0
(2)	46248.440	45657.000	0.01	1.3	15.0
(3)	64584.960	67789.000	0.01	5.0	15.0
Tetrachloro-m-xylene	741526.00	763150.00	0.01	2.9	15.0
Decachlorobiphenyl	711418.00	754550.00	0.01	6.1	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix: (soil/water) WATER Lab Sample ID: MB-5974

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9782F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/07/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1D	91	94	77	88			0
02	B1DLCS	90	90	85	95			0
03	B1DLCSD	88	88	86	97			0
04	FIAMW-60I	84	87	36	38			0
05	FIAMW-105D	82	85	66	74			0
06								
07								
08								
09								
10								
11								
12								
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29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix Spike - Sample No.: B1DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		8.8	88	45-162
Aroclor-1260	10		9.4	94	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	8.8	88	0	40	45-162
Aroclor-1260	10	9.6	96	2	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 22, 2003**

FROM: **ETHAN G. LEE** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0365

SAMPLES: 2/AQUEOUS/

FTAMW-105D FTAMW-60I

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0365, consists of two (2) aqueous environmental samples.

All samples were analyzed for total and dissolved target analyte list (TAL) metals, chloride, nitrate, nitrite, sulfate, and total organic carbon (TOC). Samples analyzed for dissolved metals are appended with the suffix "-F". The samples were collected by Tetra Tech NUS March 5, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Chloride, nitrate, nitrite, and sulfate were analyzed by Severn Trent Laboratories Connecticut. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7470A. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA method 300. TOC analyses were conducted using EPA method 415.1.

Summary

All analytes were successfully analyzed, with the exception of nitrite, which was rejected due to holding time exceedance. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Major Problems

- The 48-hour holding time limit for nitrate and nitrite was exceeded by >2X the required limit (3 days). Positive results reported for nitrate were qualified as biased extremely low (L). Nondetected results reported for nitrite were qualified as rejected (UR).

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum[(1)]	48.683 ug/L	243.415 ug/L
Antimony[(1)]	4.381 ug/L	21.905 ug/L
Beryllium	0.6 ug/L	3.0 ug/L
Cobalt	1.4 ug/L	7.0 ug/L
Copper[(1)]	8.06 ug/L	40.30 ug/L
Iron[(1)]	30.678 ug/L	153.39 ug/L
Magnesium[(1)]	51.105 ug/L	255.525 ug/L
Manganese	2.4 ug/L	12.0 ug/L
Nickel	1.2 ug/L	6.0 ug/L
Potassium	267.9 ug/L	1339.5 ug/L
Sodium	91.4 ug/L	457.0 ug/L
Vanadium	0.7 ug/L	3.5 ug/L
Chloride	0.22 mg/L	1.1 mg/L

[(1)] Maximum concentration present in aqueous preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, antimony, cobalt, iron, manganese, nickel, and potassium were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or they were nondetects.

- The laboratory control sample (LCS) percent recovery (%R) was below the 80% control limit for mercury. Nondetected results reported for mercury were qualified as biased low (UL).

Notes

The laboratory reported the prefix to the samples in this SDG (FTAMW) incorrectly as "FIAMW". The data reviewer amended the database for these samples.

Matrix spike, laboratory duplicate, and ICP serial dilution analyses were not performed for metals in this SDG.

Executive Summary

Laboratory Performance: Several analytes were qualified due to holding time exceedance. Several analytes were present in the laboratory method/preparation blanks. Mercury was qualified due to LCS noncompliance.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U	-	Value is a nondetect as reported by the laboratory.
UL	-	Nondetect is considered biased low as a result of technical noncompliance.
UR	-	Nondetect is considered rejected as a result of technical noncompliance.
B	-	Positive result is considered to be an artifact of blank contamination and should not be considered present.
L	-	Positive result is considered biased low as a result of technical noncompliance.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-105D	nsample	FTAMW-60I
samp_date	3/5/2003	samp_date	3/5/2003
lab_id	B0365-03D	lab_id	B0365-02D
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	84.4	B	A
ANTIMONY	4.5	B	A
ARSENIC	3.0	U	
BARIUM	17.2		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4240		
CHROMIUM	0.60	U	
COBALT	7.3		
COPPER	4.0	U	
IRON	233		
LEAD	4.0	U	
MAGNESIUM	3180		
MANGANESE	384		
MERCURY	0.13	UL	E
NICKEL	2.8	B	A
POTASSIUM	1230	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	7540		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	94.9	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	8.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3860		
CHROMIUM	0.60	U	
COBALT	0.90	U	
COPPER	4.0	U	
IRON	75.4	B	A
LEAD	4.0	U	
MAGNESIUM	3760		
MANGANESE	3.2	B	A
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1150	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3630		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-105DF
samp_date	3/5/2003
lab_id	B0365-05A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	14.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3710		
CHROMIUM	0.60	U	
COBALT	6.6	B	A
COPPER	4.0	U	
IRON	102	B	A
LEAD	4.0	U	
MAGNESIUM	2890		
MANGANESE	321		
MERCURY	0.13	UL	E
NICKEL	2.5	B	A
POTASSIUM	1260	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	7820		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

nsample	FTAMW-60IF
samp_date	3/5/2003
lab_id	B0365-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.1	B	A
ARSENIC	3.0	U	
BARIUM	7.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3650		
CHROMIUM	0.60	U	
COBALT	0.90	U	
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	3630		
MANGANESE	1.2	B	A
MERCURY	0.14	UL	E
NICKEL	0.80	U	
POTASSIUM	1150	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3570		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0365 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-105D
samp_date	3/5/2003
lab_id	203186-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	8.4		
NITRATE	MG/L	0.41	L	H
NITRITE	MG/L	0.10	UR	H
SULFATE	MG/L	12		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-60I
samp_date	3/5/2003
lab_id	203186-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.8		
NITRATE	MG/L	0.96	L	H
NITRITE	MG/L	0.10	UR	H
SULFATE	MG/L	9.9		
TOTAL ORGANIC CARBON	MG/L	6	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix (soil/water): WATER Lab Sample ID: B0365-03D

Level (low/med): MED Date Received: 03/06/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	84.4	B		P
7440-36-0	Antimony	4.5	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	17.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4240			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	7.3	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	233			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3180			P
7439-96-5	Manganese	384			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	7540			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60I

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365__

Matrix (soil/water): WATER Lab Sample ID: B0365-02D

Level (low/med): MED____ Date Received: 03/06/03____

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	94.9	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	8.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3860			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	75.4	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3760			P
7439-96-5	Manganese	3.2	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1150			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3630			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture:

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-105DF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Matrix (soil/water): WATER Lab Sample ID: B0365-05A

Level (low/med): MED Date Received: 03/06/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	14.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3710			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	6.6	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	102	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2890			P
7439-96-5	Manganese	321			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	1260			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	7820			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FIAMW-60IF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365___

Matrix (soil/water): WATER_ Lab Sample ID: B0365-04A

Level (low/med): MED Date Received: 03/06/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.1	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	7.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3650			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3630			P
7439-96-5	Manganese	1.2	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1150			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3570			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

_____

_____

_____

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: FIAMW-105D **Collection Date:** 03/05/03 15:05
Lab ID: B0365-03

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203186

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0365-02C
Date Sampled.....: 03/05/2003
Time Sampled.....: 09:40
Sample Matrix.....: Water

Laboratory Sample ID: 203186-1
Date Received.....: 03/08/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis										
	Chloride	3.8		0.15	1.0	1	mg/L	15142		03/10/03 0116	ddm
	Nitrate as N (NO3-N)	0.96		0.002	0.10	1	mg/L	15142		03/10/03 0116	ddm
	Nitrite as N (NO2-N)	ND		0.003	0.10	1	mg/L	15142		03/10/03 0116	ddm
	Sulfate	9.9		0.012	1.0	1	mg/L	15142		03/10/03 0116	ddm

* In Description = Dry Wgt.

C0000

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc. **Project:** Wallops Island
Client Sample ID: FIAMW-60I **Collection Date:** 03/05/03 9:40
Lab ID: B0365-02

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION						**E415.1_TOC_W**	
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C

SUPPORT DOCUMENTATION

LABORATORY TEST RESULTS

Job Number: 203186

Date:03/17/2003

CUSTOMER: MITKEM | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Customer Sample ID: B0365-03C
Date Sampled.....: 03/05/2003
Time Sampled.....: 15:05
Sample Matrix.....: Water

Laboratory Sample ID: 203186-2
Date Received.....: 03/08/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	8.4			0.15	1.0	1	mg/L	15142		03/10/03 0129	ddm
	Nitrate as N (NO3-N)	0.41			0.002	0.10	1	mg/L	15142		03/10/03 0129	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15142		03/10/03 0129	ddm
	Sulfate	12			0.012	1.0	1	mg/L	15142		03/10/03 0129	ddm

* In Description = Dry Wgt.

P0000

B0365

HOLDING TIME

05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	CL	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	CL	03/05/03	03/10/03	03/10/03	5	0	5
UG/L	FTAMW-105D	B0365-03D	NORMAL	B0365	HG	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-60I	B0365-02D	NORMAL	B0365	HG	03/05/03	03/08/03	03/10/03	3	2	5
%	LCSW	0308LCSW1	LCS	B0365	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	PBW	0308PBW1	M_BLANK	B0365	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	FTAMW-105DF	B0365-05A	NORMAL	B0365	HGF	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-60IF	B0365-04A	NORMAL	B0365	HGF	03/05/03	03/08/03	03/10/03	3	2	5
UG/L	FTAMW-105D	B0365-03D	NORMAL	B0365	M	03/05/03	03/08/03	03/09/03	3	1	4
UG/L	FTAMW-60I	B0365-02D	NORMAL	B0365	M	03/05/03	03/08/03	03/09/03	3	1	4
%	LCSW	0308LCSW1	LCS	B0365	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	PBW	0308PBW1	M_BLANK	B0365	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	FTAMW-105DF	B0365-05A	NORMAL	B0365	MF	03/05/03	03/08/03	03/09/03	3	1	4
UG/L	FTAMW-60IF	B0365-04A	NORMAL	B0365	MF	03/05/03	03/08/03	03/09/03	3	1	4
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	NTA	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	NTA	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	NTI	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	NTI	03/05/03	03/10/03	03/10/03	5	0	5
UG/L	FTAMW-105D	B0365-03E	NORMAL	B0365	OS	03/05/03	03/07/03	03/21/03	2	14	16
%	FTAMW-60I	B0365-02E	NORMAL	B0365	OS	03/05/03	03/07/03	03/21/03	2	14	16
%	SBLK3B	MB-5973	M_BLANK	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCS	LCS-5973	LCS	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	SBLK3BLCSD	LCSD-5973	LCSD	B0365	OS	/ /	03/07/03	03/21/03	0	14	0
%	FTAMW-105D	B0365-03A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-60I	B0365-02A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9
%	TB-030503	B0365-01A	NORMAL	B0365	OV	03/05/03	03/14/03	03/14/03	9	0	9
%	VBLK2N	V2B0314A	M_BLANK	B0365	OV	/ /	03/14/03	03/14/03	0	0	0
%	VBLK2NLCS	V2L0314A	LCS	B0365	OV	/ /	03/14/03	03/14/03	0	0	0
%	BBLK1D	MB-5974	M_BLANK	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCS	LCS-5975	LCS	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	BBLK1DLCSD	LCSD-5975	LCSD	B0365	PCB	/ /	03/07/03	03/10/03	0	3	0
%	FTAMW-105D	B0365-03E	NORMAL	B0365	PCB	03/05/03	03/07/03	03/11/03	2	4	6
%	FTAMW-60I	B0365-02E	NORMAL	B0365	PCB	03/05/03	03/07/03	03/11/03	2	4	6
MG/L	FTAMW-105D	203186-002	NORMAL	B0365	SO4	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-60I	203186-001	NORMAL	B0365	SO4	03/05/03	03/10/03	03/10/03	5	0	5
MG/L	FTAMW-105D	B0365-03B	NORMAL	B0365	TOC	03/05/03	03/18/03	03/18/03	13	0	13
MG/L	FTAMW-60I	B0365-02B	NORMAL	B0365	TOC	03/05/03	03/18/03	03/18/03	13	0	13
%	LCS-6204	LCS-6204	LCS	B0365	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB-6204	MB-6204	M_BLANK	B0365	TOC	/ /	03/18/03	03/18/03	0	0	0

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0305
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl Low Lev.	TCL VOC MTBE 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TCL PEST 40 ml VOA Vial HCl	TAL 500 ml poly HNO3	TAL Metals 500 ml poly	Chloride Sulfate Nitrate 500 ml poly HNO3	Dissolved Metals	COMMENTS
TB-030503	3/5/03 0720		X	X			01	2	2								
ETA MW-60I	3/5/03 0940		X	X			02	8	2*	1*	1*	2*	1	1			
ETA MW-105D	3/5/03 1505		X	X			03	8	2	1	1	2	1	1			
ETA MW-60I F	3/5/03 0940		X	X			04	1							1		
ETA MW-105D F	3/5/03 1505		X	X			05	1							1		
	/																
	/																
	/																
	/																
	/																
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Marla Mikoy	1700 / 3/5/03	D. Jeff Reeder	3-6-03 / 0900	Trip Blank water was provided by the Laboratory Samples shipped under Airbill NO 8286 8464 5267	4C
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

000007

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 5, 2003, and received at Mitkem on March 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of bromomethane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 2,4-dimethylphenol and hexachlorocyclopentadiene in the lab control sample and high recovery isophorone and low recovery of hexachlorocyclopentadiene in the lab control sample duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dimethylphenol and 3-nitroaniline.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/28/03

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365___

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FIAMW-105D	B0365-03D
FIAMW-105DF	B0365-05A
FIAMW-60I	B0365-02D
FIAMW-60IF	B0365-04A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: RENNER A. CURRAN

Date: 3/17/93 Title: CHEMIST

ANALYTICAL REPORT

JOB NUMBER: 203186

Prepared For:

MITKEM
175 Metro Center Boulevard
Warwick, RI 02886-1755

Project: NITRATE SULFATE

Attention: Paul Senecal

Date: 03/17/2003

Johanna Dubauskas
Signature

3.17.03
Date

Name: Johanna L. Dubauskas

Title: Project Manager

E-Mail: jdubauskas@stl-inc.com

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

This Report Contains (51) Pages

SEVERN TRENT **STL**

STL Report : 203186
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Samples were received out of hold for nitrate and nitrite analysis. Client was contacted and asked STL to proceed with the analyses.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Ion Chromatography Analysis – Chloride, Nitrate, Nitrite, Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Jeffrey C. Curran
Laboratory Manager

March 17, 2003
Date

SAMPLE INFORMATION
Date: 03/17/2003

Job Number.: 203186
Customer...: MITKEM
Attn.....: Paul Senecal

Project Number.....: 20000646
Customer Project ID....: NITRATE SULFATE
Project Description....: Nitrate/Sulfate

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
203186-1	B0365-02C	Water	03/05/2003	09:40	03/08/2003	10:45
203186-2	B0365-03C	Water	03/05/2003	15:05	03/08/2003	10:45

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3
BLANKS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0365___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.3	B	17.0	U	31.2	B	17.0	U	48.683	B	P
Antimony	3.3	B	3.0	U	4.1	B	3.0	U	4.381	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.6	B	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	1.4	B	0.9	U	0.9	U	0.9	U	0.916	B	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	8.060	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	30.678	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	21.8	B	8.0	U	31.9	B	8.0	U	51.105	B	P
Manganese	1.1	B	0.8	U	0.8	U	0.8	U	1.118	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	1.2	B	0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium	267.9	B	78.0	U	78.0	U	78.0	U	135.477	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	91.4	B	83.0	U	83.0	U	83.0	U	83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365___

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg): ___

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	36.6	B					P
Antimony			3.0	U	3.0	U					P
Arsenic			3.0	U	3.0	U					P
Barium			4.0	U	4.2	B					P
Beryllium			0.5	U	0.5	U					P
Cadmium			0.7	U	0.7	U					P
Calcium			240.0	U	240.0	U					P
Chromium			0.6	U	0.6	U					P
Cobalt			1.0	B	1.2	B					P
Copper			4.0	U	4.0	U					P
Iron			26.0	U	28.1	B					P
Lead			4.0	U	4.0	U					P
Magnesium			31.7	B	51.5	B					P
Manganese			2.4	B	2.1	B					P
Mercury											
Nickel			0.8	U	1.2	B					P
Potassium			78.0	U							P
Selenium			9.0	U	9.0	U					P
Silver			2.0	U	2.0	U					P
Sodium			83.0	U							P
Thallium			3.0	U	3.0	U					P
Vanadium			0.7	B	0.9	B					P
Zinc			7.0	U	7.0	U					P
Cyanide											

Mitkem Corporation

Date: *25-Mar-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0365
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6204**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **3/18/03**		Run ID: **TOC1_030318A**	
Client ID: **MB-6204**	Batch ID: **6204**	Units: **mg/L**			Analysis Date: **3/18/03**		SeqNo: **86851**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6204**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/18/03**		Run ID: **TOC1_030318A**	
Client ID: **LCS-6204**	Batch ID: **6204**	Units: **mg/L**			Analysis Date: **3/18/03**		SeqNo: **86852**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	53	6.0	54.1	0	98	80	120	0	0		

000434

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Solid LCS Source:

Aqueous LCS Source: HIGH_PURITY_#802115

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	9100.0	9118.6	100.2						
Antimony	455.0	483.5	106.3						
Arsenic	455.0	450.7	99.1						
Barium	9100.0	9284.5	102.0						
Beryllium	227.0	227.3	100.1						
Cadmium	227.0	225.7	99.4						
Calcium	22700.0	22263.5	98.1						
Chromium	910.0	907.3	99.7						
Cobalt	2270.0	2328.3	102.6						
Copper	1130.0	1141.0	101.0						
Iron	4550.0	4573.2	100.5						
Lead	455.0	448.4	98.5						
Magnesium	22700.0	23070.0	101.6						
Manganese	2270.0	2284.0	100.6						
Mercury	4.6	3.4	73.9						
Nickel	2270.0	2264.8	99.8						
Potassium	22700.0	21955.4	96.7						
Selenium	455.0	451.8	99.3						
Silver	1130.0	1115.4	98.7						
Sodium	22700.0	21822.2	96.1						
Thallium	455.0	455.6	100.1						
Vanadium	2270.0	2281.4	100.5						
Zinc	2270.0	2299.2	101.3						
Cyanide									

QUALITY CONTROL RESULTS

Job Number.: 203186 Report Date.: 03/17/2003

CUSTOMER: NITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: CHL
Parameter.....: Chloride

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	50.00000		50.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	30.00000		30.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	10.00000		10.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	4.00000		4.00000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	1.00000		1.00000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.50000 B		0.50000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	24.69800		25.00000		99		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.14700 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	24.85500		25.00000		99	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.14700 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	23.89700		24.00000	0.14700 U	100		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	23.83800		24.00000	0.14700 U	99		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	10.13500		11.40000		89	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	9.82300		11.40000		86	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.14700 U							03/09/2003	2315
MD	203185-1		mg/L	12.63200			12.61000	0.2		20.0	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	37.58500		24.00000	12.61000	104		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	24.91600		25.00000		100	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.22000 B							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	24.77300		25.00000		99	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.14700 U							03/10/2003	0156

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	5.00000		5.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	3.00000		3.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	1.00000		1.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	0.40000		0.40000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	0.10000		0.10000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.05000 B		0.05000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	2.48500		2.50000		99		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.00200 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	2.49100		2.50000		100	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.00200 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	1.97100		2.00000	0.00200 U	99		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	1.96800		2.00000	0.00200 U	98		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	10.77200		9.71000		111	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	8.73200		9.71000		90	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.00200 U							03/09/2003	2315
MD	203185-1		mg/L	0.76800			0.77000	0.3		20.0	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	2.75600		2.00000	0.77000	99		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	2.48100		2.50000		99	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.00200 U							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	2.48100		2.50000		99	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.00200 U							03/10/2003	0156

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203186 Report Date.: 03/17/2003

CUSTOMER: NITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ckm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	5.00000		5.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	3.00000		3.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	1.00000		1.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	0.40000		0.40000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	0.10000		0.10000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.05000 B		0.05000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	2.48200		2.50000		99		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.00300 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	2.48500		2.50000		99	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.00300 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	1.95100		2.00000	0.00300 U	98		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	1.94600		2.00000	0.00300 U	97		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	5.36900		5.00000		107	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	4.87100		5.00000		97	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.00300 U							03/09/2003	2315
MD	203185-1		mg/L	0.00300 U			0.00300 U	0.0000		0.1000	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	1.88100		2.00000	0.00300 U	94		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	2.48100		2.50000		99	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.00300 U							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	2.47400		2.50000		99	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.00300 U							03/10/2003	0156

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ckm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	100.00000		100.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	60.00000		60.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	20.00000		20.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	8.00000		8.00000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	2.00000		2.00000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	1.00000		1.00000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	50.72000		50.00000		101		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.01200 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	50.68000		50.00000		101	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.01200 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	19.02700		20.00000	0.01200 U	95		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	18.95400		20.00000	0.01200 U	95		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	8.20500		9.21000		89	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	8.71200		9.21000		95	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.01200 U							03/09/2003	2315
MD	203185-1		mg/L	3.17100			3.16600	0.0050		1.0000	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	21.92100		20.00000	3.16600	94		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	50.56300		50.00000		101	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.01200 U							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	50.38500		50.00000		101	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.01200 U							03/10/2003	0156

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0365___

ICP ID Number: OPTIMA_2A____ Date: 02/01/03___

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365__

ICP ID Number: _____ Date: 02/01/03__

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FIAMW-105D	03/08/03		50
FIAMW-105DF	03/08/03		50
FIAMW-601	03/08/03		50
FIAMW-601F	03/08/03		50
LCSW	03/08/03		50
PBW	03/08/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FIAMW-105D	03/08/03		130
FIAMW-105DF	03/08/03		128
FIAMW-601	03/08/03		128
FIAMW-601F	03/08/03		142
LCSW	03/08/03		100
PBW	03/08/03		100

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 03/09/03 End Date: 03/09/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1015		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S1	1.00	1020		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S2	1.00	1024		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
S3	1.00	1028		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
ZZZZZZ	1.00	1032																									
ZZZZZZ	1.00	1036																									
ZZZZZZ	1.00	1038																									
ZZZZZZ	1.00	1042																									
ZZZZZZ	1.00	1046																									
ICV	1.00	1051		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1055		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1100		X						X				X			X											
ICSAB	1.00	1102		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1105		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1109		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1113																										
ZZZZZZ	1.00	1117																										
ZZZZZZ	1.00	1121																										
ZZZZZZ	1.00	1125																										
ZZZZZZ	1.00	1129																										
ZZZZZZ	1.00	1133																										
CCV	1.00	1137		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1142		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1146																										
ZZZZZZ	1.00	1150																										
ZZZZZZ	1.00	1154																										
ZZZZZZ	1.00	1158																										
ZZZZZZ	1.00	1202																										
ZZZZZZ	1.00	1206																										
ZZZZZZ	1.00	1210																										
ZZZZZZ	1.00	1213																										
CCV	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0365__

Instrument ID Number: OPTIMA_2A_____ Method: P_

Start Date: 03/09/03 End Date: 03/09/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB	1.00	1219		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1223																									
ZZZZZZ	1.00	1227																									
ZZZZZZ	1.00	1231																									
ZZZZZZ	1.00	1236																									
ZZZZZZ	1.00	1240																									
ZZZZZZ	1.00	1244																									
FIAMW-60I	1.00	1248		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
FIAMW-105D	1.00	1252		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1256		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1300		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1304																									
ZZZZZZ	1.00	1308																									
ZZZZZZ	1.00	1312																									
FIAMW-60IF	1.00	1316		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
FIAMW-105DF	1.00	1320		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1324																									
ZZZZZZ	1.00	1328																									
ZZZZZZ	1.00	1331																									
ZZZZZZ	1.00	1334																									
ZZZZZZ	1.00	1337																									
ZZZZZZ	1.00	1342																									
ZZZZZZ	1.00	1346																									
ZZZZZZ	1.00	1350																									
ZZZZZZ	1.00	1354																									
ZZZZZZ	1.00	1358																									
ZZZZZZ	1.00	1402																									
ZZZZZZ	1.00	1406																									
ZZZZZZ	1.00	1411																									
CCV	1.00	1415		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1419		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1423																									

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0365__

Instrument ID Number: OPTIMA_2A_____ Method: P

Start Date: 03/09/03___ End Date: 03/09/03___

EPA Sample No.	D/F	Time	%R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1427																									
ZZZZZZ	1.00	1431																									
ZZZZZZ	1.00	1434																									
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1440																									
ICSA	1.00	1443		X						X				X		X											
ICSAB	1.00	1445		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1448		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1452		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _ SDG No.: B0365__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/10/03__ End Date: 03/10/03__

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1138																				X				
S1	1.00	1140																				X				
S2	1.00	1142																				X				
S3	1.00	1145																				X				
ZZZZZZ	1.00	1147																								
ZZZZZZ	1.00	1149																								
ICV	1.00	1153																				X				
ICB	1.00	1156																				X				
ICSA	1.00	1158																								
ICSAB	1.00	1200																				X				
PBW	1.00	1203																				X				
LCSW	1.00	1205																				X				
ZZZZZZ	1.00	1207																								
ZZZZZZ	1.00	1209																								
ZZZZZZ	1.00	1212																								
ZZZZZZ	1.00	1214																								
ZZZZZZ	1.00	1216																								
ZZZZZZ	1.00	1219																								
CCV	1.00	1221																				X				
CCB	1.00	1223																				X				
ZZZZZZ	1.00	1226																								
ZZZZZZ	1.00	1228																								
ZZZZZZ	1.00	1230																								
ZZZZZZ	1.00	1233																								
ZZZZZZ	1.00	1235																								
ZZZZZZ	1.00	1237																								
ZZZZZZ	1.00	1240																								
CCV	1.00	1242																				X				
CCB	1.00	1244																				X				
ZZZZZZ	1.00	1246																								
ZZZZZZ	1.00	1249																								
ZZZZZZ	1.00	1251																								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0365__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/10/03 End Date: 03/10/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1253																												
ZZZZZZ	1.00	1256																												
FIAMW-60I	1.00	1258																				X								
FIAMW-105D	1.00	1300																				X								
CCV	1.00	1302																				X								
CCB	1.00	1305																				X								
ZZZZZZ	1.00	1307																												
ZZZZZZ	1.00	1309																												
FIAMW-60IF	1.00	1312																				X								
FIAMW-105DF	1.00	1314																				X								
ZZZZZZ	1.00	1316																												
ICSA	1.00	1319																												
ICSAB	1.00	1321																				X								
CCV	1.00	1323																				X								
CCB	1.00	1324																				X								

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365___

Instrument ID Number: OPTIMA_1A_____ Method: P_

Start Date: 03/10/03 End Date: 03/10/03___

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1347																		X							
S1	1.00	1350																		X							
S2	1.00	1352																		X							
S3	1.00	1354																		X							
ZZZZZZ	1.00	1357																									
ZZZZZZ	1.00	1359																									
ICV	1.00	1401																		X							
ICB	1.00	1403																		X							
ICSA	1.00	1406																									
ICSAB	1.00	1408																		X							
PBW	1.00	1410																		X							
LCSW	1.00	1413																		X							
ZZZZZZ	1.00	1415																									
ZZZZZZ	1.00	1417																									
ZZZZZZ	1.00	1420																									
ZZZZZZ	1.00	1422																									
ZZZZZZ	1.00	1424																									
ZZZZZZ	1.00	1426																									
CCV	1.00	1429																		X							
CCB	1.00	1431																		X							
ZZZZZZ	1.00	1433																									
ZZZZZZ	1.00	1436																									
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1440																									
ZZZZZZ	1.00	1443																									
ZZZZZZ	1.00	1445																									
ZZZZZZ	1.00	1447																									
CCV	1.00	1450																		X							
CCB	1.00	1452																		X							
ZZZZZZ	1.00	1454																									
ZZZZZZ	1.00	1456																									
ZZZZZZ	1.00	1459																									

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/10/03__ End Date: 03/10/03__

EPA Sample No.	D/F	Time	%R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1501																									
ZZZZZZ	1.00	1503																									
FIAMW-60I	1.00	1506																	X								
FIAMW-105D	1.00	1508																	X								
CCV	1.00	1510																	X								
CCB	1.00	1512																	X								
ZZZZZZ	1.00	1515																									
ZZZZZZ	1.00	1517																									
FIAMW-60IF	1.00	1519																	X								
FIAMW-105DF	1.00	1522																	X								
ZZZZZZ	1.00	1524																									
ICSA	1.00	1526																									
ICSAB	1.00	1529																	X								
CCV	1.00	1531																	X								
CCB	1.00	1532																	X								

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365__

Instrument ID Number: COMM_FIMS_____ Method: CV_

Start Date: 03/10/03___ End Date: 03/10/03___

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1120																X									
S0.2	1.00	1122																X									
S1	1.00	1123																X									
S2	1.00	1124																X									
S5	1.00	1126																X									
S10	1.00	1127																X									
ICV	1.00	1128																X									
ICB	1.00	1130																X									
PBW	1.00	1131																X									
LCSW	1.00	1132																X									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1135																									
ZZZZZZ	1.00	1136																									
ZZZZZZ	1.00	1138																									
ZZZZZZ	1.00	1139																									
ZZZZZZ	1.00	1140																									
CCV	1.00	1142																X									
CCB	1.00	1143																X									
ZZZZZZ	1.00	1144																									
ZZZZZZ	1.00	1146																									
ZZZZZZ	1.00	1147																									
ZZZZZZ	1.00	1148																									
ZZZZZZ	1.00	1150																									
ZZZZZZ	1.00	1151																									
ZZZZZZ	1.00	1152																									
ZZZZZZ	1.00	1154																									
CCV	1.00	1155																X									
CCB	1.00	1156																X									
ZZZZZZ	1.00	1158																									
ZZZZZZ	1.00	1159																									
FIAMW-60I	1.00	1200																X									
FIAMW-105D	1.00	1202																X									

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0365__

Instrument ID Number: COMM_FIMS Method: CV_

Start Date: 03/10/03___ End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FIAMW-60IF	1.00	1203																X								
FIAMW-105DF	1.00	1204																X								
ZZZZZZ	1.00	1206																								
ZZZZZZ	1.00	1207																								
CCV	1.00	1208																X								
CCB	1.00	1210																X								

FORM XIV - IN SW846

Ag 328.068	122.2	0.0004 mg/L	0.00010	0.0004 mg/L	0.00010	21.82%
Al 308.215	517.6	0.0121 mg/L	0.00493	0.0121 mg/L	0.00493	40.60%
As 188.979	4.1	0.0023 mg/L	0.00061	0.0023 mg/L	0.00061	26.17%
Ba 233.527	823.0	0.0123 mg/L	0.00018	0.0123 mg/L	0.00018	1.46%
Be 313.107	255.3	0.0000 mg/L	0.00001	0.0000 mg/L	0.00001	17.86%
Co 228.616	22.6	0.0008 mg/L	0.00019	0.0008 mg/L	0.00019	24.92%
Cr 267.716	459.4	0.0017 mg/L	0.00038	0.0017 mg/L	0.00038	21.93%
Cu 324.752	337.5	0.0009 mg/L	0.00016	0.0009 mg/L	0.00016	17.11%
Fe 273.955	3238.4	0.0806 mg/L	0.00023	0.0806 mg/L	0.00023	0.29%
Mg 279.077	265097.5	6.8798 mg/L	0.01098	6.8798 mg/L	0.01098	0.16%
Mn 257.610	11977.5	0.0360 mg/L	0.00014	0.0360 mg/L	0.00014	0.39%
Ni 231.604	35.1	0.0006 mg/L	0.00004	0.0006 mg/L	0.00004	7.49%
Pb 220.353	9.3	0.0005 mg/L	0.00004	0.0005 mg/L	0.00004	8.01%
Sb 206.836	6.3	0.0030 mg/L	0.00192	0.0030 mg/L	0.00192	63.84%
Se 196.026	5.6	0.0037 mg/L	0.00220	0.0037 mg/L	0.00220	58.97%
Tl 190.801	1.0	0.0007 mg/L	0.00000	0.0007 mg/L	0.00000	0.01%
V 292.402	81.5	0.0003 mg/L	0.00003	0.0003 mg/L	0.00003	9.07%
Zn 206.200	185.0	0.0020 mg/L	0.00015	0.0020 mg/L	0.00015	7.72%
Na 330.237	6000.8	3.1638 mg/L	0.00838	3.1638 mg/L	0.00838	0.26%
Cd 226.502	13.4	0.0000 mg/L	0.00002	0.0000 mg/L	0.00002	51.01%
Ti 334.940	240.7	0.0003 mg/L	0.00005	0.0003 mg/L	0.00005	18.28%
Ca 227.546	2273.6	4.7629 mg/L	0.07797	4.7629 mg/L	0.07797	1.64%

Sequence No.: 40
Sample ID: B0365-02D,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 3/9/2003 12:47:02 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0365-02D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	51.9	0.0002	mg/L	0.00010	0.0002	mg/L	0.00010	66.41%
Al 308.215	4043.9	0.0949	mg/L	0.00055	0.0949	mg/L	0.00055	0.58%
As 188.979	0.2	0.0001	mg/L	0.00128	0.0001	mg/L	0.00128	911.58%
Ba 233.527	585.1	0.0087	mg/L	0.00009	0.0087	mg/L	0.00009	1.03%
Be 313.107	312.7	0.0000	mg/L	0.00002	0.0000	mg/L	0.00002	35.54%
Co 228.616	17.3	0.0006	mg/L	0.00005	0.0006	mg/L	0.00005	7.89%
Cr 267.716	107.7	0.0004	mg/L	0.00006	0.0004	mg/L	0.00006	13.61%
Cu 324.752	600.2	0.0017	mg/L	0.00003	0.0017	mg/L	0.00003	1.79%
Fe 273.955	3031.1	0.0754	mg/L	0.00016	0.0754	mg/L	0.00016	0.21%
Mg 279.077	144794.1	3.7576	mg/L	0.01463	3.7576	mg/L	0.01463	0.39%
Mn 257.610	1073.2	0.0032	mg/L	0.00006	0.0032	mg/L	0.00006	1.95%
Ni 231.604	29.1	0.0005	mg/L	0.00010	0.0005	mg/L	0.00010	20.88%
Pb 220.353	9.5	0.0005	mg/L	0.00030	0.0005	mg/L	0.00030	57.45%
Sb 206.836	4.8	0.0023	mg/L	0.00064	0.0023	mg/L	0.00064	27.90%
Se 196.026	-1.0	-0.0007	mg/L	0.00204	-0.0007	mg/L	0.00204	308.54%
Tl 190.801	-3.5	-0.0018	mg/L	0.00114	-0.0018	mg/L	0.00114	61.97%
V 292.402	56.4	0.0002	mg/L	0.00014	0.0002	mg/L	0.00014	69.88%
Zn 206.200	267.3	0.0032	mg/L	0.00004	0.0032	mg/L	0.00004	1.16%
Na 330.237	6067.9	3.2008	mg/L	0.04757	3.2008	mg/L	0.04757	1.49%
Cd 226.502	33.0	0.0001	mg/L	0.00003	0.0001	mg/L	0.00003	22.51%
Ti 334.940	1944.9	0.0019	mg/L	0.00007	0.0019	mg/L	0.00007	3.63%
Ca 227.546	1843.3	3.8613	mg/L	0.03596	3.8613	mg/L	0.03596	0.93%

Sequence No.: 41
Sample ID: B0365-03D,5996
Analyst:
Sample Wt: Sample: FTAMW-105D
Dilution:

Autosampler Location: 38
Date Collected: 3/9/2003 12:51:06 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0365-03D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	10.5	0.0000	mg/L	0.00007	0.0000	mg/L	0.00007	>999.9%
Al 308.215	3599.3	0.0844	mg/L	0.00207	0.0844	mg/L	0.00207	2.45%
As 188.979	3.9	0.0022	mg/L	0.00059	0.0022	mg/L	0.00059	26.20%

0.3842 mg/L x 1000 = 384 mg/L ✓

Ba 233.527	1157.8	0.0172 mg/L	0.00006	0.0172 mg/L	0.00006	0.36%
Be 313.107	501.0	0.0001 mg/L	0.00000	0.0001 mg/L	0.00000	6.67%
Co 228.616	220.3	0.0073 mg/L	0.00003	0.0073 mg/L	0.00003	0.44%
Cr 267.716	106.1	0.0003 mg/L	0.00004	0.0003 mg/L	0.00004	13.54%
Cu 324.752	412.6	0.0007 mg/L	0.00017	0.0007 mg/L	0.00017	23.29%
Fe 273.955	9367.4	0.2330 mg/L	0.00025	0.2330 mg/L	0.00025	0.11%
Mg 279.077	122633.2	3.1845 mg/L	0.00361	3.1845 mg/L	0.00361	0.11%
Mn 257.610	127306.1	0.3842 mg/L	0.00064	0.3842 mg/L	0.00064	0.17%
Ni 231.604	174.9	0.0028 mg/L	0.00003	0.0028 mg/L	0.00003	1.25%
Pb 220.353	3.9	0.0002 mg/L	0.00009	0.0002 mg/L	0.00009	56.97%
Sb 206.836	9.4	0.0045 mg/L	0.00000	0.0045 mg/L	0.00000	0.04%
Se 196.026	0.5	0.0001 mg/L	0.00238	0.0001 mg/L	0.00238	>999.9%
Tl 190.801	-8.0	-0.0026 mg/L	0.00191	-0.0026 mg/L	0.00191	72.26%
V 292.402	-34.8	-0.0001 mg/L	0.00007	-0.0001 mg/L	0.00007	73.06%
Zn 206.200	539.4	0.0065 mg/L	0.00005	0.0065 mg/L	0.00005	0.72%
Na 330.237	12942.6	6.8289 mg/L	0.12120	6.8289 mg/L	0.12120	1.77%
Cd 226.502	32.8	0.0001 mg/L	0.00000	0.0001 mg/L	0.00000	0.06%
Ti 334.940	1092.9	0.0011 mg/L	0.00015	0.0011 mg/L	0.00015	13.18%
Ca 227.546	2023.8	4.2382 mg/L	0.04004	4.2382 mg/L	0.04004	0.94%

Sequence No.: 42
Sample ID: CCV
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 3/9/2003 12:55:11 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	283222.2	1.2285	mg/L	0.01900	1.2285	mg/L	0.01900	1.55%
Al 308.215	438253.0	10.281	mg/L	0.1896	10.281	mg/L	0.1896	1.84%
As 188.979	902.9	0.5230	mg/L	0.00068	0.5230	mg/L	0.00068	0.13%
Ba 233.527	709950.9	10.593	mg/L	0.0548	10.593	mg/L	0.0548	0.52%
Be 313.107	1740899.5	0.2526	mg/L	0.00106	0.2526	mg/L	0.00106	0.42%
Co 228.616	79119.7	2.6358	mg/L	0.03796	2.6358	mg/L	0.03796	1.44%
Cr 267.716	273984.3	1.0316	mg/L	0.01811	1.0316	mg/L	0.01811	1.76%
Cu 324.752	451696.9	1.2995	mg/L	0.00519	1.2995	mg/L	0.00519	0.40%
Fe 273.955	206943.8	5.1475	mg/L	0.08776	5.1475	mg/L	0.08776	1.70%
Mg 279.077	993957.2	25.808	mg/L	0.0989	25.808	mg/L	0.0989	0.38%
Mn 257.610	848573.0	2.5608	mg/L	0.01084	2.5608	mg/L	0.01084	0.42%
Ni 231.604	160445.8	2.5900	mg/L	0.04797	2.5900	mg/L	0.04797	1.85%
Pb 220.353	9370.7	0.5126	mg/L	0.00083	0.5126	mg/L	0.00083	0.16%
Sb 206.836	1102.5	0.5334	mg/L	0.00200	0.5334	mg/L	0.00200	0.37%
Se 196.026	796.2	0.5245	mg/L	0.00052	0.5245	mg/L	0.00052	0.10%
Tl 190.801	968.2	0.5224	mg/L	0.00003	0.5224	mg/L	0.00003	0.00%
V 292.402	753036.9	2.5929	mg/L	0.01076	2.5929	mg/L	0.01076	0.41%
Zn 206.200	207941.4	2.6077	mg/L	0.04023	2.6077	mg/L	0.04023	1.54%
Na 330.237	47341.8	24.956	mg/L	0.2939	24.956	mg/L	0.2939	1.18%
Cd 226.502	69247.5	0.2607	mg/L	0.00430	0.2607	mg/L	0.00430	1.65%
Ti 334.940	1185.0	0.0012	mg/L	0.00002	0.0012	mg/L	0.00002	2.02%
Ca 227.546	12038.4	25.040	mg/L	0.0811	25.040	mg/L	0.0811	0.32%

Sequence No.: 43
Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 3/9/2003 12:59:20 PM

Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	69.9	0.0003	mg/L	0.00035	0.0003	mg/L	0.00035	112.56%
Al 308.215	-1.4	0.0000	mg/L	0.00353	0.0000	mg/L	0.00353	>999.9%
As 188.979	-0.1	0.0000	mg/L	0.00068	0.0000	mg/L	0.00068	>999.9%
Ba 233.527	125.2	0.0019	mg/L	0.00006	0.0019	mg/L	0.00006	3.45%
Be 313.107	345.6	0.0001	mg/L	0.00002	0.0001	mg/L	0.00002	41.50%
Co 228.616	18.9	0.0006	mg/L	0.00010	0.0006	mg/L	0.00010	15.75%

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 29, 2003**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- VOC/SVOC/PCB CTO 848, NASA WALLOPS ISLAND SDG B0370**		
SAMPLES:	3/Aqueous		
	FTAMW-2D TB030603*	FTAMW-2S	FTAMW-57S

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0370 consists of one (1) trip blank, and three (3) environmental aqueous samples. The environmental samples were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on March 6, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed with the exception of those qualified as rejected. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- The recoveries of surrogates phenol-d5 and 2-fluorophenol were <10% in the semivolatile fraction of sample FTAMW-2D. All non-detected results in the acid fraction were rejected (UR) in sample FTAMW-2D. The sample was not re-extracted because of insufficient volume. It should also be noted that the laboratory method blank also yielded poor surrogate recoveries. Inability to recover surrogates in a method blank is indicative of poor extraction procedure.

- The recoveries of surrogates nitrobenzene-d5, phenol-d5, and 2-fluorophenol were <10% in the semivolatile fraction of sample FTAMW-57S. All non-detected results in both fractions were rejected (UR) in sample FTAMW-57S. The sample was not re-extracted because of insufficient volume. It should also be noted that the laboratory method blank also yielded poor surrogate recoveries. Inability to recover surrogates in a method blank is indicative of poor extraction procedure.

Minor

- Positive results reported below the quantitation limit but above the method detection limit were

qualified as estimated (J).

- The following compound was detected in the aqueous method blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	1.0 ug/L	10 ug/L
Acetone[1]	73 ug/L	730 ug/L

[1] Concentration reported in the trip blank.

Sample aliquot, and dilution factors were taken into consideration when applying the blank action levels. No qualifications were made on this basis.

- Sample FTAMW-57S exceeded the analytical holding time for the VOC fraction. All positive and non-detected results in sample FTAMW-57S were qualified as biased low (L, UL).

- The percent recovery of internal standard 1,4-dichlorobenzene-d4 was below the -50% quality control criteria in samples TB-030603, FTAMW-2D, and FTAMW-2S. All non-detected results for 1,1,2,2-tetrachloroethane, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, 1,2-dibromo-3-chloropropane, and 1,2,4-trichlorobenzene were qualified as estimated (UJ).

- The semivolatile initial calibration performed on March 20 on the "S1" instrument exceeded the 30% (and was >50%) relative percent standard deviation (%RSD) quality control criteria for 4-chloroaniline. Results for 4-chloroaniline in samples FTAMW-2D and FTAMW-2S were qualified as estimated (UJ). No qualifications were made to sample FTAMW-57S on this basis because the results were rejected for surrogate recovery non-compliance.

- The surrogate decachlorobiphenyl was below the laboratory's percent recovery quality control criteria (on both columns) in the PCB fraction of sample FTAMW-2S. All results in sample FTAMW-2S were qualified as estimated (UJ).

Notes

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The laboratory omitted the first page of the volatile initial calibration for the "V2" instrument from the data package. The laboratory submitted the form upon request.

The volatile continuing calibration performed on the "V1" instrument on March 21 at 08:58 exceeded the 25% (but was <50%) difference quality control criteria for MTBE. No qualifications were made on this basis because the results for MTBE were non-detected.

The volatile continuing calibration performed on the "V2" instrument on March 17 at 12:52 exceeded the 25% (but was <50%) difference quality control criteria for 4-methyl-2-pentanone, 2-hexanone, bromoform, and 1,2,4-trichlorobenzene. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The volatile MS/MSD of sample FTAMW-2D exceeded the laboratory's percent recovery quality control criteria for bromomethane, chloroethane, MTBE, 1,2-dichloroethane, and methyl acetate. No qualifications were made on this basis because all results for the aforementioned compounds were non-detected in the un-spiked sample.

The volatile MS of sample FTAMW-2D exceeded the laboratory's percent recovery quality control criteria for

acetone, bromodichloromethane, and 1,1,2-trichloro-1,2,2-trifluoroethane. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected in the un-spiked sample.

The semivolatile initial calibration performed on March 21 on the "S2" instrument exceeded the 30% (and was >50%) RSD quality control criteria for 4-chloroaniline. No qualifications were made on this basis because no results that were used for validation were quantitated using this calibration.

The semivolatile continuing calibration performed on March 31 at 11:57 on the "S2" instrument exceeded the 25% (and was >50%) percent difference quality control criteria for 4-nitrophenol. No qualifications were made on this basis because no results that were used for validation were quantitated using this calibration.

The semivolatile continuing calibration performed on March 21 at 11:57 on the "S2" instrument exceeded the 25% (but was <50%) difference quality control criteria for 2,2'-oxybis(1-chloropropane), 4-chloroaniline, hexachlorocyclopentadiene, 2,4-dinitrophenol, benzo(k)fluoranthene, and 4-nitroaniline. No qualifications were made on this basis because no results that were used for validation were quantitated using this calibration.

The recovery of surrogate nitrobenzene-d5 was below the percent recovery quality control criteria in the semivolatile fraction of sample FTAMW-2D. No qualifications were made on this basis because only one surrogate in the base/neutral fraction was non-compliant. The advisory surrogates were not used for validation purposes.

The semivolatile blank spike and the MS of sample FTAMW-2D exceeded the laboratory's percent recovery quality control criteria for isophorone. No qualifications were made on this basis because the results for isophorone were non-detected.

The semivolatile blank spike and the MS of sample FTAMW-2D were below the laboratory's percent recovery quality control criteria for 3,3'-dichlorobenzidine. No qualifications were made on this basis because the MS was compliant.

The semivolatile MS of sample FTAMW-2D was below the percent recovery quality control criteria for 2,4-dimethylphenol. No qualifications were made on this basis because the blank spike was compliant.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances, internal standard non-compliances, holding time non-compliances, and surrogate recovery non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2D		nsample	FTAMW-2D		nsample	FTAMW-2S	
samp_date	3/6/2003		samp_date	3/6/2003		samp_date	3/6/2003	
lab_id	B0370-02A		lab_id	B0370-02A		lab_id	B0370-03A	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/L		units	UG/L		units	UG/L	
Pct_Solids	0		Pct_Solids	0		Pct_Solids	0	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	N
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	UJ	N
1,2,4-TRIMETHYLBENZENE	1	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	1	UJ	N
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	UJ	N
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	UJ	N
1,3-DICHLOROBENZENE	1	UJ	N
1,4-DICHLOROBENZENE	1	UJ	N
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	7		

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	3		
1,1,2,2-TETRACHLOROETHANE	1	UJ	N
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	UJ	N
1,2,4-TRIMETHYLBENZENE	1	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	1	UJ	N
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	UJ	N
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	UJ	N
1,3-DICHLOROBENZENE	1	UJ	N
1,4-DICHLOROBENZENE	1	UJ	N
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	B0370-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	84	L	H
1,1,2,2-TETRACHLOROETHANE	1	UL	H
1,1,2-TRICHLOROETHANE	1	UL	H
1,1,2-TRICHLOROTRIFLUOROETHANE	1	UL	H
1,1-DICHLOROETHANE	27	L	H
1,1-DICHLOROETHENE	10	L	H
1,2,4-TRICHLOROBENZENE	1	UL	H
1,2,4-TRIMETHYLBENZENE	5	L	H
1,2-DIBROMO-3-CHLOROPROPANE	1	UL	H
1,2-DIBROMOETHANE	1	UL	H
1,2-DICHLOROBENZENE	1	UL	H
1,2-DICHLOROETHANE	1	UL	H
1,2-DICHLOROPROPANE	1	UL	H
1,3,5-TRIMETHYLBENZENE	2	L	H
1,3-DICHLOROBENZENE	1	UL	H
1,4-DICHLOROBENZENE	1	UL	H
2-BUTANONE	5	UL	H
2-HEXANONE	5	UL	H
4-METHYL-2-PENTANONE	5	UL	H
ACETONE	5	UL	H
BENZENE	3	L	H
BROMODICHLOROMETHANE	1	UL	H
BROMOFORM	1	UL	H
BROMOMETHANE	1	UL	H
CARBON DISULFIDE	1	UL	H
CARBON TETRACHLORIDE	1	UL	H
CHLOROBENZENE	1	UL	H
CHLORODIBROMOMETHANE	1	UL	H
CHLOROETHANE	1	UL	H
CHLOROFORM	1	UL	H

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	UL	H
CIS-1,2-DICHLOROETHENE	110	L	H
CIS-1,3-DICHLOROPROPENE	1	UL	H
CYCLOHEXANE	1	UL	H
DICHLORODIFLUOROMETHANE	1	UL	H
ETHYLBENZENE	1	UL	H
ISOPROPYLBENZENE	1	UL	H
M+P-XYLENES	7	L	H
METHYL ACETATE	1	UL	H
METHYL CYCLOHEXANE	1	L	H
METHYL TERT-BUTYL ETHER	1	UL	H
METHYLENE CHLORIDE	2	UL	H
O-XYLENE	3	L	H
STYRENE	1	UL	H
TETRACHLOROETHENE	1	UL	H
TOLUENE	1	UL	H
TOTAL XYLENES	10	L	H
TRANS-1,2-DICHLOROETHENE	1	UL	H
TRANS-1,3-DICHLOROPROPENE	1	UL	H
TRICHLOROETHENE	1	UL	H
TRICHLOROFLUOROMETHANE	1	UL	H
VINYL CHLORIDE	1	UL	H

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	TB-030603
samp_date	3/6/2003
lab_id	B0370-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	UJ	N
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	UJ	N
1,2,4-TRIMETHYLBENZENE	1	UJ	N
1,2-DIBROMO-3-CHLOROPROPANE	1	UJ	N
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	UJ	N
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	UJ	N
1,3-DICHLOROBENZENE	1	UJ	N
1,4-DICHLOROBENZENE	1	UJ	N
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	73		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-030603
samp_date	3/6/2003
lab_id	B0370-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	67		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2D
samp_date	3/6/2003
lab_id	B0370-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	UR	R
2,4,6-TRICHLOROPHENOL	5	UR	R
2,4-DICHLOROPHENOL	5	UR	R
2,4-DIMETHYLPHENOL	5	UR	R
2,4-DINITROPHENOL	20	UR	R
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	UR	R
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	UR	R
2-NITROANILINE	20	U	
2-NITROPHENOL	5	UR	R
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	UR	R
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	UR	R
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	UR	R
4-NITROANILINE	20	U	
4-NITROPHENOL	20	UR	R
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-2D
samp_date	3/6/2003
lab_id	B0370-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	6		
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	UR	R
PHENANTHRENE	5	U	
PHENOL	5	UR	R
PYRENE	5	U	

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	B0370-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	B0370-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	3	J	P
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	UR	R
2,4,5-TRICHLOROPHENOL	20	UR	R
2,4,6-TRICHLOROPHENOL	5	UR	R
2,4-DICHLOROPHENOL	5	UR	R
2,4-DIMETHYLPHENOL	5	UR	R
2,4-DINITROPHENOL	20	UR	R
2,4-DINITROTOLUENE	5	UR	R
2,6-DINITROTOLUENE	5	UR	R
2-CHLORONAPHTHALENE	5	UR	R
2-CHLOROPHENOL	5	UR	R
2-METHYLNAPHTHALENE	5	UR	R
2-METHYLPHENOL	5	UR	R
2-NITROANILINE	20	UR	R
2-NITROPHENOL	5	UR	R
3,3'-DICHLOROBENZIDINE	5	UR	R
3-NITROANILINE	20	UR	R
4,6-DINITRO-2-METHYLPHENOL	20	UR	R
4-BROMOPHENYL PHENYL ETHER	5	UR	R
4-CHLORO-3-METHYLPHENOL	5	UR	R
4-CHLOROANILINE	5	UR	R
4-CHLOROPHENYL PHENYL ETHER	5	UR	R
4-METHYLPHENOL	5	UR	R
4-NITROANILINE	20	UR	R
4-NITROPHENOL	20	UR	R
ACENAPHTHENE	5	UR	R
ACENAPHTHYLENE	5	UR	R
ANTHRACENE	5	UR	R
BENZO(A)ANTHRACENE	5	UR	R
BENZO(A)PYRENE	5	UR	R
BENZO(B)FLUORANTHENE	5	UR	R

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	UR	R
BENZO(K)FLUORANTHENE	5	UR	R
BIS(2-CHLOROETHOXY)METHANE	5	UR	R
BIS(2-CHLOROETHYL)ETHER	5	UR	R
BIS(2-ETHYLHEXYL)PHTHALATE	5	UR	R
BUTYL BENZYL PHTHALATE	5	UR	R
CHRYSENE	5	UR	R
DIBENZO(A,H)ANTHRACENE	5	UR	R
DIBENZOFURAN	5	UR	R
DIETHYL PHTHALATE	5	UR	R
DIMETHYL PHTHALATE	5	UR	R
DI-N-BUTYL PHTHALATE	5	UR	R
DI-N-OCTYL PHTHALATE	5	UR	R
FLUORANTHENE	5	UR	R
FLUORENE	5	UR	R
HEXACHLOROBENZENE	5	UR	R
HEXACHLOROBUTADIENE	5	UR	R
HEXACHLOROCYCLOPENTADIENE	5	UR	R
HEXACHLOROETHANE	5	UR	R
INDENO(1,2,3-CD)PYRENE	5	UR	R
ISOPHORONE	5	UR	R
NAPHTHALENE	5	UR	R
NITROBENZENE	5	UR	R
N-NITROSO-DI-N-PROPYLAMINE	5	UR	R
N-NITROSODIPHENYLAMINE	5	UR	R
PENTACHLOROPHENOL	20	UR	R
PHENANTHRENE	5	UR	R
PHENOL	5	UR	R
PYRENE	5	UR	R

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION: P

nsample	FTAMW-2D
samp_date	3/6/2003
lab_id	B0370-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	B0370-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	R
AROCLOR-1221	1.0	UJ	R
AROCLOR-1232	1.0	UJ	R
AROCLOR-1242	1.0	UJ	R
AROCLOR-1248	1.0	UJ	R
AROCLOR-1254	1.0	UJ	R
AROCLOR-1260	1.0	UJ	R

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5479

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	7	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5479

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5479

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5482

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/18/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	5	U
75-09-2	Methylene Chloride	1	U
156-60-5	trans-1,2-Dichloroethene	2	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	1	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	3	
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	1	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	1	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
		1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5482

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/18/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5482

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/18/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2897

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	5	U
75-09-2	Methylene Chloride	1	U
156-60-5	trans-1,2-Dichloroethene	2	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	27	
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	110	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	84	
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	3	
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	1	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	1	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
		1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2897

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	7	
95-47-6	o-Xylene	3	
1330-20-7	Xylene (Total)	10	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	2	
95-63-6	1,2,4-Trimethylbenzene	5	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2897

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.63	5	J
2.		UNKNOWN	7.08	6	J
3.	622-96-8	BENZENE, 1-ETHYL-4-METHYL-	11.84	6	NJ
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5478

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	73	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	67	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5478

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-030603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5478

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4384

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4384

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4384

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2DRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2910

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2DRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2910

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-2DRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2910

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4387

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4387

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	3	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4387

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	122-99-6	ETHANOL, 2-PHENOXY-	11.51	5	NJ
2.		UNKNOWN	19.02	4	J
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4388

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4388

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4388

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.76	20	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2911

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2911

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-57SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2911

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.76	12	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
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17.					
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30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9861F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/07/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9864F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/07/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9865F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/07/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.

-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

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The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

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Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0370

HOLDING TIME

05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	CL	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	CL	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	CL	03/06/03	/ /	03/10/03	0	0	4
UG/L	FTAMW-2D	B0370-02D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2DDUP	B0370-02DDUP	DUPLICATE	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
%	FTAMW-2DMS	B0370-02DMS	MS	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2S	B0370-03D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-57S	B0370-04D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
%	LCSW	0308LCSW	LCS	B0370	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	PBW	0308PBW	M_BLANK	B0370	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	FTAMW-2DF	B0370-05A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2SF	B0370-06A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-57SF	B0370-07A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2D	B0370-02D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2DDUP	B0370-02DDUP	DUPLICATE	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2DL	B0370-02DL	NORMAL	B0370	M	03/06/03	03/09/03	03/09/03	3	0	3
%	FTAMW-2DMS	B0370-02DMS	MS	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2S	B0370-03D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-57S	B0370-04D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
%	LCSW	0308LCSW	LCS	B0370	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	PBW	0308PBW	M_BLANK	B0370	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	FTAMW-2DF	B0370-05A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2SF	B0370-06A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-57SF	B0370-07A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	NTA	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	NTA	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	NTA	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	NTI	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	NTI	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	NTI	03/06/03	/ /	03/10/03	0	0	4
UG/L	FTAMW-2D	B0370-02E	MS	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DMS	B0370-02EMS	MS	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DMSD	B0370-02EMSD	MSD	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DRE	B0370-02ERE	NORMAL	B0370	OS	03/06/03	03/11/03	03/31/03	5	20	25
%	FTAMW-2S	B0370-03E	NORMAL	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-57S	B0370-04E	NORMAL	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-57SRE	B0370-04ERE	NORMAL	B0370	OS	03/06/03	03/11/03	03/31/03	5	20	25
%	SBLK1C	MB-6033	M_BLANK	B0370	OS	/ /	03/11/03	03/31/03	0	20	0
%	SBLK1CLCS	LCS-6033	LCS	B0370	OS	/ /	03/11/03	03/21/03	0	10	0
%	SBLK2M	MB-6033A	M_BLANK	B0370	OS	/ /	03/11/03	03/31/03	0	20	0
%	FTAMW-2D	B0370-02A	NORMAL	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	FTAMW-2DMS	B0370-02AMS	MS	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	FTAMW-2DMSD	B0370-02AMSD	MSD	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
UG/L	FTAMW-2S	B0370-03A	NORMAL	B0370	OV	03/06/03	03/18/03	03/18/03	12	0	12
%	FTAMW-57S	B0370-04A	NORMAL	B0370	OV	03/06/03	03/21/03	03/21/03	15	0	15
%	TB-030603	B0370-01A	NORMAL	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	VBLK1I	V1B0321A	M_BLANK	B0370	OV	/ /	03/21/03	03/21/03	0	0	0
%	VBLK1ILCS	V1L0321A	LCS	B0370	OV	/ /	03/21/03	03/21/03	0	0	0
%	VBLK2P	V2B0317A	M_BLANK	B0370	OV	/ /	03/17/03	03/17/03	0	0	0
%	VBLK2PLCS	V2L0317A	LCS	B0370	OV	/ /	03/17/03	03/17/03	0	0	0
%	BBLK1A	MB-6030	M_BLANK	B0370	PCB	/ /	03/11/03	03/14/03	0	3	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	BBLK1ALCS	LCS-6031	LCS	B0370	PCB	/ /	03/11/03	03/14/03	0	3	0
%	FTAMW-2D	B0370-02EMSD	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
%	FTAMW-2S	B0370-03E	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
%	FTAMW-57S	B0370-04E	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	SO4	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	SO4	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	SO4	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-2D	B0370-02B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-2DDUP	B0370-02BDUP	DUPLICATE	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-2S	B0370-03B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-57S	B0370-04B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
%	LCS-6204	LCS-6204	LCS	B0370	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB-6204	MB-6204	M_BLANK	B0370	TOC	/ /	03/18/03	03/18/03	0	0	0

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

April 8, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0370

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 5, 2003, and received at Mitkem on March 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample FTAMW-2D. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: due to laboratory oversight, sample FTAMW-57S was analyzed outside of hold time. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low or not recovery of several surrogates in method blank SBLK1C and samples FRAMW-2D and FTAMW-57S. The method blank and samples were re-analyzed with similar findings. The samples were not re-extracted due to insufficient sample volume.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 3,3'-dichlorobenzidine.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample FTAMW-2D. Spike recoveries and replicate RPDs were within the QC limits with the exception of high recovery of isophorone and N-nitrosodiphenylamine and low recovery of 2,4-dimethylphenol in the matrix spike and high recovery of 4-chloroaniline in the matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dimethylphenol and 3,3'-dichlorobenzidine.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of low recovery of decachlorobiphenyl in both columns for sample FTAMW-2S.

Lab control sample: spike recoveries and were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample FATMW-2D. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-2D. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-2D. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/08/03

MITKEM CORPORATION
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Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9086		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0370
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406			CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl	1,2,4 TMB, 1,3,5 TMB TCL VOC, MTBE	1 Liter Amber Glass TCL SVOC	1 Liter Amber Glass TCL PCB	40 ml VOA Vial HCl TOC	500 ml Poly HNO3 TAL Metals	500 ml Poly unpreserved Sulfate, Nitrate, Chloride, TDS	500 ml Poly HNO3 Dissolved Metals	COMMENTS
TB-030603	3/6/03 / 0740		X	X			01		2								
FTAMW-2D	3/6/03 / 0915		X	X			02		6	3	3	2	3	3			
FTA MW-2S	3/6/03 / 1255		X	X			03		2	1	1	2	1	1			
FTA MW-57S	3/6/03 / 1530		X	X			04		2	1	1	2	1	1			
FTA MW-2DF	3/6/03 / 0915		X	X			05								3		
FTA MW-2SF	3/6/03 / 1255		X	X			06								1		
FTA MW-57S	3/6/03 / 1530		X	X			07								1		
	/																
	/																
	/																
	/																
	/																

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
6000	Charles Meyer	3/6/03 / 1700	Nathan Donnell	3-7-03 / 0900	Blank water provided by the lab Shipped via Federal Express Air bill NO 8286 8464 5245	4C
6000		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: V1F2860 BFB Injection Date: 03/20/03

Instrument ID: V1 BFB Injection Time: 1653

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.0
75	30.0 - 60.0% of mass 95	40.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	73.0
175	5.0 - 9.0% of mass 174	5.3 (7.3)1
176	95.0 - 101.0% of mass 174	70.0 (95.9)1
177	5.0 - 9.0% of mass 176	4.4 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501H	V1S0320B	V1F2861	03/20/03	1708
02	VSTD0051H	V1S0320C	V1F2862	03/20/03	1737
03	VSTD2001H	V1S0320E	V1F2864	03/20/03	1835
04	VSTD1001H	V1S0320F	V1F2865	03/20/03	1904
05	VSTD0201H	V1S0320G	V1F2866	03/20/03	1933
06					
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V1 Calibration Date(s): 03/20/03 03/20/03

Heated Purge: (Y/N) N Calibration Time(s): 1708 1933

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2862 RRF20 =V1F2866
RRF50 =V1F2861 RRF100=V1F2865 RRF200=V1F2864

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.276	0.265	0.299	0.282	0.273	0.279	4.5
Chloromethane	*	0.454	0.467	0.455	0.488	0.444	0.462	3.7*
Vinyl Chloride		0.342	0.351	0.327	0.371	0.324	0.343	5.6
Bromomethane		0.115	0.085	0.097	0.058	0.081	0.087	24.0
Chloroethane		0.113	0.125	0.114	0.123	0.123	0.120	4.7
Trichlorofluoromethane		0.176	0.184	0.206	0.203	0.210	0.196	7.8
1,1-Dichloroethene		0.243	0.250	0.237	0.255	0.231	0.243	4.0
Acetone		0.095	0.092	0.080	0.079	0.081	0.085	8.9
Carbon Disulfide		0.700	0.709	0.635	0.803	0.719	0.713	8.4
Methylene Chloride		0.247	0.254	0.285	0.206	0.179	0.234	17.8
trans-1,2-Dichloroethene		0.348	0.356	0.340	0.343	0.322	0.342	3.7
Methyl tert-butyl ether		0.530	0.524	0.484	0.604	0.557	0.540	8.2
1,1-Dichloroethane	*	0.585	0.606	0.587	0.592	0.559	0.586	2.9*
2-Butanone		0.204	0.176	0.171	0.169	0.164	0.177	8.9
cis-1,2-Dichloroethene		0.353	0.349	0.342	0.348	0.328	0.344	2.9
Chloroform		0.508	0.521	0.517	0.512	0.503	0.512	1.4
1,1,1-Trichloroethane		0.371	0.365	0.360	0.356	0.340	0.358	3.2
Carbon Tetrachloride		0.312	0.310	0.318	0.309	0.297	0.309	2.4
1,2-Dichloroethane		0.354	0.355	0.349	0.341	0.334	0.347	2.5
Benzene		1.327	1.373	1.343	1.364	1.328	1.347	1.5
Trichloroethene		0.312	0.316	0.314	0.315	0.310	0.313	0.7
1,2-Dichloropropane		0.339	0.347	0.339	0.344	0.331	0.340	1.8
Bromodichloromethane		0.386	0.396	0.394	0.390	0.384	0.390	1.3
cis-1,3-Dichloropropene		0.518	0.539	0.538	0.549	0.539	0.537	2.1
4-Methyl-2-pentanone		0.327	0.334	0.340	0.348	0.352	0.340	3.1
Toluene		1.244	1.320	1.316	1.340	1.315	1.307	2.8
trans-1,3-Dichloropropene		0.418	0.451	0.458	0.464	0.466	0.451	4.3
1,1,2-Trichloroethane		0.277	0.282	0.277	0.284	0.283	0.281	1.2
Tetrachloroethene		0.319	0.326	0.323	0.325	0.318	0.322	1.1
2-Hexanone		0.257	0.313	0.324	0.332	0.337	0.313	10.4
Dibromochloromethane		0.419	0.433	0.430	0.430	0.421	0.427	1.4
1,2-Dibromoethane		0.412	0.416	0.412	0.422	0.414	0.415	1.1
Chlorobenzene	*	1.146	1.198	1.181	1.187	1.153	1.173	1.9*
Ethylbenzene		0.569	0.620	0.617	0.613	0.598	0.603	3.4
m,p-Xylene		0.738	0.790	0.791	0.789	0.744	0.770	3.5
o-Xylene		0.714	0.771	0.767	0.761	0.735	0.750	3.2
Xylene (Total)		0.730	0.784	0.783	0.780	0.741	0.764	3.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V1 Calibration Date(s): 03/20/03 03/20/03

Heated Purge: (Y/N) N Calibration Time(s): 1708 1933

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2862 RRF20 =V1F2866
RRF50 =V1F2861 RRF100=V1F2865 RRF200=V1F2864

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		1.072	1.289	1.344	1.355	1.315	1.275	9.1
Bromoform	*	0.267	0.286	0.286	0.288	0.289	0.283	3.2*
Isopropylbenzene		1.716	1.831	1.854	1.832	1.765	1.800	3.2
1,1,2,2-Tetrachloroethane	*	1.256	1.254	1.169	1.136	1.107	1.184	5.8*
1,3,5-Trimethylbenzene		2.957	3.114	3.013	2.902	2.706	2.938	5.2
1,2,4-Trimethylbenzene		2.901	3.146	3.047	2.976	2.852	2.984	3.9
1,3-Dichlorobenzene		1.562	1.698	1.685	1.660	1.663	1.654	3.3
1,4-Dichlorobenzene		1.902	1.893	1.827	1.799	1.753	1.835	3.4
1,2-Dichlorobenzene		1.689	1.681	1.624	1.619	1.585	1.640	2.7
1,2-Dibromo-3-chloropropane		0.150	0.160	0.164	0.153	0.150	0.155	4.0
1,2,4-Trichlorobenzene		0.855	0.904	0.894	0.898	0.881	0.886	2.2
1,1,2-Trichlo-1,2,2-trifluor		0.165	0.201	0.188	0.236	0.218	0.202	13.5
Methyl Acetate		0.304	0.259	0.216	0.238	0.218	0.247	14.7
Cyclohexane		0.521	0.525	0.539	0.562	0.542	0.538	3.0
Methylcyclohexane		0.502	0.494	0.518	0.508	0.495	0.503	2.0
Dibromofluoromethane		0.275	0.273	0.284	0.289	0.282	0.281	2.3
1,2-Dichloroethane-d4		0.074	0.076	0.075	0.078	0.072	0.075	3.1
Toluene-d8		1.277	1.328	1.397	1.422	1.396	1.364	4.4
Bromofluorobenzene		0.511	0.526	0.550	0.545	0.542	0.535	3.0

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK2P	102	98	93	90	0
02	V2PLCS	101	100	92	109	0
03	TB-030603	116	106	96	84	0
04	FTAMW-2D	117	107	94	83	0
05	FTAMW-2DMS	113	107	94	115	0
06	FTAMW-2DMSD	110	105	95	113	0
07	FTAMW-2S	114	102	95	84	0
08	VBLK1I	98	86	98	115	0
09	V1ILCS	92	83	87	90	0
10	FTAMW-57S	99	87	99	115	0
11						
12						
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14						
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16						
17						
18						
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20						
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		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER(BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: V1F2890 BFB Injection Date: 03/21/03

Instrument ID: V1 BFB Injection Time: 0830

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.5
75	30.0 - 60.0% of mass 95	42.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	70.8
175	5.0 - 9.0% of mass 174	5.2 (7.3)1
176	95.0 - 101.0% of mass 174	68.3 (96.4)1
177	5.0 - 9.0% of mass 176	4.4 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501I	V1S0321A	V1F2891	03/21/03	0858
02	VBLK1I	V1B0321A	V1F2892	03/21/03	0936
03	V1ILCS	V1L0321A	V1F2894	03/21/03	1128
04	FTAMW-57S	B0370-04A	V1F2897	03/21/03	1310
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V1 Calibration Date: 03/21/03 Time: 0858

Lab File ID: V1F2891 Init. Calib. Date(s): 03/20/03 03/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 1708 1933

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.279	0.309	0.01	10.8	20.0	
Chloromethane	0.462	0.459	0.1	0.6	20.0	
Vinyl Chloride	0.343	0.322	0.01	6.1	20.0	
Bromomethane	0.087	0.085	0.01	2.3	20.0	
Chloroethane	0.120	0.130	0.01	8.3	20.0	
Trichlorofluoromethane	0.196	0.240	0.01	22.4	20.0	<-
1,1-Dichloroethene	0.243	0.235	0.01	3.3	20.0	
Acetone	0.085	0.084	0.01	1.2	20.0	
Carbon Disulfide	0.713	0.674	0.01	5.5	20.0	
Methylene Chloride	0.234	0.281	0.01	20.1	20.0	<-
trans-1,2-Dichloroethene	0.342	0.324	0.01	5.3	20.0	
Methyl tert-butyl ether	0.540	0.375	0.01	30.6	20.0	<-
1,1-Dichloroethane	0.586	0.573	0.1	2.2	20.0	
2-Butanone	0.177	0.159	0.01	10.2	20.0	
cis-1,2-Dichloroethene	0.344	0.325	0.01	5.5	20.0	
Chloroform	0.512	0.540	0.01	5.5	20.0	
1,1,1-Trichloroethane	0.358	0.372	0.01	3.9	20.0	
Carbon Tetrachloride	0.309	0.329	0.01	6.5	20.0	
1,2-Dichloroethane	0.347	0.380	0.01	9.5	20.0	
Benzene	1.347	1.321	0.01	1.9	20.0	
Trichloroethene	0.313	0.311	0.01	0.6	20.0	
1,2-Dichloropropane	0.340	0.333	0.01	2.0	20.0	
Bromodichloromethane	0.390	0.411	0.01	5.4	20.0	
cis-1,3-Dichloropropene	0.537	0.535	0.01	0.4	20.0	
4-Methyl-2-pentanone	0.340	0.314	0.01	7.6	20.0	
Toluene	1.307	1.283	0.01	1.8	20.0	
trans-1,3-Dichloropropene	0.451	0.469	0.01	4.0	20.0	
1,1,2-Trichloroethane	0.281	0.284	0.01	1.1	20.0	
Tetrachloroethene	0.322	0.310	0.01	3.7	20.0	
2-Hexanone	0.313	0.297	0.01	5.1	20.0	
Dibromochloromethane	0.427	0.430	0.01	0.7	20.0	
1,2-Dibromoethane	0.415	0.408	0.01	1.7	20.0	
Chlorobenzene	1.173	1.148	0.3	2.1	20.0	
Ethylbenzene	0.603	0.586	0.01	2.8	20.0	
m,p-Xylene	0.770	0.762	0.01	1.0	20.0	
o-Xylene	0.750	0.751	0.01	0.1	20.0	
Xylene (Total)	0.764	0.759	0.01	0.6	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V1 Calibration Date: 03/21/03 Time: 0858

Lab File ID: V1F2891 Init. Calib. Date(s): 03/20/03 03/20/03

Heated Purge: (Y/N) N Init. Calib. Times: 1708 1933

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.275	1.330	0.01	4.3	20.0
Bromoform	0.283	0.290	0.1	2.5	20.0
Isopropylbenzene	1.800	1.823	0.01	1.3	20.0
1,1,2,2-Tetrachloroethane	1.184	1.115	0.3	5.8	20.0
1,3,5-Trimethylbenzene	2.938	2.869	0.01	2.3	20.0
1,2,4-Trimethylbenzene	2.984	2.940	0.01	1.5	20.0
1,3-Dichlorobenzene	1.654	1.631	0.01	1.4	20.0
1,4-Dichlorobenzene	1.835	1.770	0.01	3.5	20.0
1,2-Dichlorobenzene	1.640	1.617	0.01	1.4	20.0
1,2-Dibromo-3-chloropropane	0.155	0.153	0.01	1.3	20.0
1,2,4-Trichlorobenzene	0.886	0.832	0.01	6.1	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.202	0.198	0.01	2.0	20.0
Methyl Acetate	0.247	0.220	0.01	10.9	20.0
Cyclohexane	0.538	0.537	0.01	0.2	20.0
Methylcyclohexane	0.503	0.514	0.01	2.2	20.0
Dibromofluoromethane	0.281	0.283	0.01	0.7	20.0
1,2-Dichloroethane-d4	0.075	0.074	0.01	1.3	20.0
Toluene-d8	1.364	1.302	0.01	4.5	20.0
Bromofluorobenzene	0.535	0.548	0.01	2.4	20.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V1B0321A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V1B0321A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V1B0321A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2892

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: V1ILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		52	104	48-135
Chloromethane	50		47	94	60-118
Vinyl Chloride	50		46	92	65-113
Bromomethane	50		51	102	73-122
Chloroethane	50		52	104	72-118
Trichlorofluoromethane	50		58	116	68-129
1,1-Dichloroethene	50		46	92	67-121
Acetone	50		44	88	38-161
Carbon Disulfide	50		52	104	53-137
Methylene Chloride	50		34	68	59-132
trans-1,2-Dichloroethen	50		46	92	71-124
Methyl tert-butyl ether	50		41	82	75-123
1,1-Dichloroethane	50		47	94	83-116
2-Butanone	50		43	86	64-139
cis-1,2-Dichloroethene	50		46	92	83-120
Chloroform	50		48	96	89-118
1,1,1-Trichloroethane	50		50	100	81-122
Carbon Tetrachloride	50		51	102	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		46	92	81-120
Trichloroethene	50		47	94	77-121
1,2-Dichloropropane	50		47	94	81-116
Bromodichloromethane	50		49	98	90-114
cis-1,3-Dichloropropene	50		47	94	78-119
4-Methyl-2-pentanone	50		48	96	57-138
Toluene	50		46	92	81-121
trans-1,3-Dichloroprope	50		49	98	85-118
1,1,2-Trichloroethane	50		48	96	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: V1ILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		44	88	73-121
2-Hexanone	50		46	92	53-145
Dibromochloromethane	50		48	96	80-124
1,2-Dibromoethane	50		47	94	80-124
Chlorobenzene	50		46	92	82-118
Ethylbenzene	50		46	92	80-122
Xylene (Total)	150		140	93	81-121
Styrene	50		47	94	77-128
Bromoform	50		49	98	77-130
Isopropylbenzene	50		47	94	58-148
1,1,2,2-Tetrachloroetha	50		45	90	76-125
1,3,5-Trimethylbenzene	50		45	90	76-116
1,2,4-Trimethylbenzene	50		45	90	77-117
1,3-Dichlorobenzene	50		46	92	80-116
1,4-Dichlorobenzene	50		46	92	80-114
1,2-Dichlorobenzene	50		46	92	81-116
1,2-Dibromo-3-chloropro	50		49	98	71-126
1,2,4-Trichlorobenzene	50		47	94	67-114
1,1,2-Trichlo-1,2,2-tri	50		47	94	70-130
Methyl Acetate	50		44	88	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		49	98	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: V2F5400 BFB Injection Date: 03/14/03

Instrument ID: V2 BFB Injection Time: 1108

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	48.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.1
175	5.0 - 9.0% of mass 174	5.6 (7.2)1
176	95.0 - 101.0% of mass 174	74.9 (97.0)1
177	5.0 - 9.0% of mass 176	4.9 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0202M	V2S0314B	V2F5403	03/14/03	1222
02	VSTD2002M	V2S0314D	V2F5405	03/14/03	1320
03	VSTD1002M	V2S0314E	V2F5406	03/14/03	1348
04	VSTD0502M	V2S0314A	V2F5407	03/14/03	1418
05	VSTD0052M	V2S0314C	V2F5408	03/14/03	1447
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V2 Calibration Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Calibration Time(s): 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5408 RRF20 =V2F5403
RRF50 =V2F5407 RRF100=V2F5406 RRF200=V2F5405

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.379	0.399	0.388	0.384	0.372	0.384	2.6
Chloromethane	*	0.454	0.475	0.462	0.444	0.416	0.450	4.9*
Vinyl Chloride		0.334	0.353	0.361	0.353	0.338	0.348	3.2
Bromomethane		0.130	0.112	0.099	0.097	0.097	0.107	13.2
Chloroethane		0.164	0.166	0.168	0.162	0.160	0.164	2.1
Trichlorofluoromethane		0.470	0.527	0.530	0.528	0.517	0.514	4.9
1,1-Dichloroethene		0.275	0.268	0.267	0.261	0.248	0.264	3.8
Acetone		0.111	0.089	0.092	0.090	0.083	0.093	11.2
Carbon Disulfide		0.931	0.908	0.920	0.887	0.850	0.899	3.6
Methylene Chloride		0.348	0.296	0.291	0.280	0.269	0.297	10.3
trans-1,2-Dichloroethene		0.297	0.293	0.290	0.281	0.268	0.286	4.1
Methyl tert-butyl ether		0.727	0.758	0.786	0.762	0.726	0.752	3.4
1,1-Dichloroethane	*	0.591	0.614	0.611	0.589	0.572	0.595	2.8*
2-Butanone		0.131	0.124	0.124	0.114	0.103	0.119	9.2
cis-1,2-Dichloroethene		0.276	0.302	0.305	0.296	0.276	0.291	4.9
Chloroform		0.626	0.618	0.617	0.603	0.572	0.607	3.5
1,1,1-Trichloroethane		0.555	0.555	0.555	0.549	0.534	0.550	1.7
Carbon Tetrachloride		0.496	0.487	0.499	0.489	0.478	0.490	1.6
1,2-Dichloroethane		0.478	0.492	0.496	0.482	0.456	0.481	3.2
Benzene		1.024	1.110	1.091	1.038	0.940	1.041	6.4
Trichloroethene		0.264	0.282	0.290	0.285	0.279	0.280	3.5
1,2-Dichloropropane		0.272	0.274	0.272	0.262	0.246	0.265	4.4
Bromodichloromethane		0.435	0.452	0.457	0.454	0.448	0.449	1.9
cis-1,3-Dichloropropene		0.353	0.440	0.477	0.472	0.462	0.441	11.6
4-Methyl-2-pentanone		0.127	0.167	0.192	0.199	0.203	0.178	17.9
Toluene		0.894	1.067	1.094	1.065	0.976	1.019	8.2
trans-1,3-Dichloropropene		0.323	0.400	0.447	0.450	0.451	0.414	13.3
1,1,2-Trichloroethane		0.207	0.217	0.220	0.215	0.210	0.214	2.5
Tetrachloroethene		0.366	0.362	0.369	0.357	0.348	0.360	2.3
2-Hexanone		0.111	0.142	0.173	0.186	0.201	0.163	22.3
Dibromochloromethane		0.407	0.433	0.448	0.445	0.451	0.437	4.2
1,2-Dibromoethane		0.305	0.323	0.344	0.343	0.350	0.333	5.6
Chlorobenzene	*	1.064	1.054	1.016	0.931	0.853	0.984	9.1*
Ethylbenzene		0.389	0.494	0.514	0.498	0.462	0.471	10.5
m,p-Xylene		0.523	0.639	0.631	0.574	0.552	0.584	8.6
o-Xylene		0.444	0.591	0.610	0.572	0.540	0.551	11.9
Xylene (Total)		0.496	0.623	0.624	0.574	0.548	0.573	9.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V2 Calibration Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Calibration Time(s): 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V2F5408 RRF20 =V2F5403
RRF50 =V2F5407 RRF100=V2F5406 RRF200=V2F5405

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		0.777	1.011	1.038	0.948	0.928	0.940	10.8
Bromoform	*	0.266	0.277	0.296	0.301	0.307	0.289	6.0*
Isopropylbenzene		1.059	1.485	1.593	1.565	1.482	1.437	15.1
1,1,2,2-Tetrachloroethane	*	0.792	0.749	0.732	0.710	0.718	0.740	4.4*
1,3,5-Trimethylbenzene		2.197	2.643	2.617	2.466	2.540	2.493	7.2
1,2,4-Trimethylbenzene		2.086	2.610	2.678	2.654	2.656	2.537	10.0
1,3-Dichlorobenzene		1.400	1.446	1.482	1.478	1.494	1.460	2.6
1,4-Dichlorobenzene		1.605	1.502	1.501	1.512	1.467	1.517	3.4
1,2-Dichlorobenzene		1.308	1.308	1.345	1.313	1.284	1.312	1.7
1,2-Dibromo-3-chloropropane		0.133	0.108	0.122	0.127	0.138	0.126	9.0
1,2,4-Trichlorobenzene		0.420	0.453	0.631	0.726	0.822	0.610	28.3
1,1,2-Trichlo-1,2,2-trifluor		0.315	0.311	0.320	0.300	0.290	0.307	3.9
Methyl Acetate		0.244	0.205	0.215	0.209	0.198	0.214	8.3
Cyclohexane		0.379	0.464	0.476	0.458	0.452	0.446	8.6
Methylcyclohexane		0.366	0.442	0.457	0.434	0.416	0.423	8.2
Dibromofluoromethane		0.313	0.321	0.324	0.314	0.302	0.315	2.7
1,2-Dichloroethane-d4		0.056	0.065	0.064	0.063	0.060	0.062	6.0
Toluene-d8		1.100	1.337	1.348	1.312	1.217	1.263	8.3
Bromofluorobenzene		0.437	0.548	0.570	0.559	0.558	0.534	10.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: V2F5460 BFB Injection Date: 03/17/03

Instrument ID: V2 BFB Injection Time: 1235

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	49.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	84.5
175	5.0 - 9.0% of mass 174	6.2 (7.4)1
176	95.0 - 101.0% of mass 174	82.2 (97.3)1
177	5.0 - 9.0% of mass 176	5.6 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0502P	V2S0317A	V2F5461	03/17/03	1252
02	VBLK2P	V2B0317A	V2F5462	03/17/03	1334
03	V2PLCS	V2L0317A	V2F5463	03/17/03	1435
04	TB-030603	B0370-01A	V2F5478	03/17/03	2224
05	FTAMW-2D	B0370-02A	V2F5479	03/17/03	2252
06	FTAMW-2DMS	B0370-02AMS	V2F5480	03/17/03	2321
07	FTAMW-2DMSD	B0370-02AMSD	V2F5481	03/17/03	2351
08	FTAMW-2S	B0370-03A	V2F5482	03/18/03	0019
09					
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V2 Calibration Date: 03/17/03 Time: 1252

Lab File ID: V2F5461 Init. Calib. Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Init. Calib. Times: 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.384	0.391	0.01	1.8	20.0	
Chloromethane	0.450	0.446	0.1	0.9	20.0	
Vinyl Chloride	0.348	0.359	0.01	3.2	20.0	
Bromomethane	0.107	0.110	0.01	2.8	20.0	
Chloroethane	0.164	0.173	0.01	5.5	20.0	
Trichlorofluoromethane	0.514	0.554	0.01	7.8	20.0	
1,1-Dichloroethene	0.264	0.264	0.01	0.0	20.0	
Acetone	0.092	0.113	0.01	22.8	20.0	<-
Carbon Disulfide	0.899	0.907	0.01	0.9	20.0	
Methylene Chloride	0.297	0.292	0.01	1.7	20.0	
trans-1,2-Dichloroethene	0.286	0.299	0.01	4.5	20.0	
Methyl tert-butyl ether	0.752	0.871	0.01	15.8	20.0	
1,1-Dichloroethane	0.595	0.601	0.1	1.0	20.0	
2-Butanone	0.119	0.140	0.01	17.6	20.0	
cis-1,2-Dichloroethene	0.291	0.310	0.01	6.5	20.0	
Chloroform	0.607	0.644	0.01	6.1	20.0	
1,1,1-Trichloroethane	0.550	0.587	0.01	6.7	20.0	
Carbon Tetrachloride	0.490	0.525	0.01	7.1	20.0	
1,2-Dichloroethane	0.481	0.532	0.01	10.6	20.0	
Benzene	1.041	1.096	0.01	5.3	20.0	
Trichloroethene	0.280	0.301	0.01	7.5	20.0	
1,2-Dichloropropane	0.265	0.269	0.01	1.5	20.0	
Bromodichloromethane	0.449	0.485	0.01	8.0	20.0	
cis-1,3-Dichloropropene	0.441	0.488	0.01	10.6	20.0	
4-Methyl-2-pentanone	0.178	0.228	0.01	28.1	20.0	<-
Toluene	1.019	1.133	0.01	11.2	20.0	
trans-1,3-Dichloropropene	0.414	0.480	0.01	15.9	20.0	
1,1,2-Trichloroethane	0.214	0.246	0.01	15.0	20.0	
Tetrachloroethene	0.360	0.385	0.01	6.9	20.0	
2-Hexanone	0.163	0.207	0.01	27.0	20.0	<-
Dibromochloromethane	0.437	0.482	0.01	10.3	20.0	
1,2-Dibromoethane	0.333	0.374	0.01	12.3	20.0	
Chlorobenzene	0.984	1.014	0.3	3.0	20.0	
Ethylbenzene	0.471	0.510	0.01	8.3	20.0	
m,p-Xylene	0.584	0.629	0.01	7.7	20.0	
o-Xylene	0.551	0.613	0.01	11.2	20.0	
Xylene (Total)	0.573	0.624	0.01	8.9	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: V2 Calibration Date: 03/17/03 Time: 1252

Lab File ID: V2F5461 Init. Calib. Date(s): 03/14/03 03/14/03

Heated Purge: (Y/N) N Init. Calib. Times: 1124 1447

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	0.940	1.050	0.01	11.7	20.0	
Bromoform	0.289	0.365	0.1	26.3	20.0	<-
Isopropylbenzene	1.437	1.612	0.01	12.2	20.0	
1,1,2,2-Tetrachloroethane	0.740	0.781	0.3	5.5	20.0	
1,3,5-Trimethylbenzene	2.493	2.439	0.01	2.2	20.0	
1,2,4-Trimethylbenzene	2.537	2.516	0.01	0.8	20.0	
1,3-Dichlorobenzene	1.460	1.473	0.01	0.9	20.0	
1,4-Dichlorobenzene	1.517	1.504	0.01	0.8	20.0	
1,2-Dichlorobenzene	1.312	1.372	0.01	4.6	20.0	
1,2-Dibromo-3-chloropropane	0.126	0.146	0.01	15.9	20.0	
1,2,4-Trichlorobenzene	0.610	0.805	0.01	32.0	20.0	<-
1,1,2-Trichlo-1,2,2-trifluor	0.307	0.334	0.01	8.8	20.0	
Methyl Acetate	0.214	0.239	0.01	11.7	20.0	
Cyclohexane	0.446	0.454	0.01	1.8	20.0	
Methylcyclohexane	0.423	0.442	0.01	4.5	20.0	
Dibromofluoromethane	0.315	0.315	0.01	0.0	20.0	
1,2-Dichloroethane-d4	0.062	0.061	0.01	1.6	20.0	
Toluene-d8	1.263	1.170	0.01	7.4	20.0	
Bromofluorobenzene	0.534	0.573	0.01	7.3	20.0	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V2B0317A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5462

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V2B0317A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5462

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

VBLK2P

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: V2B0317A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5462

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: V2PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		54	108	48-135
Chloromethane	50		50	100	60-118
Vinyl Chloride	50		52	104	65-113
Bromomethane	50		60	120	73-122
Chloroethane	50		58	116	72-118
Trichlorofluoromethane	50		59	118	68-129
1,1-Dichloroethene	50		51	102	67-121
Acetone	50		57	114	38-161
Carbon Disulfide	50		53	106	53-137
Methylene Chloride	50		51	102	59-132
trans-1,2-Dichloroethen	50		53	106	71-124
Methyl tert-butyl ether	50		56	112	75-123
1,1-Dichloroethane	50		50	100	83-116
2-Butanone	50		50	100	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		53	106	89-118
1,1,1-Trichloroethane	50		53	106	81-122
Carbon Tetrachloride	50		54	108	79-125
1,2-Dichloroethane	50		55	110	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		51	102	77-121
1,2-Dichloropropane	50		49	98	81-116
Bromodichloromethane	50		53	106	90-114
cis-1,3-Dichloropropene	50		52	104	78-119
4-Methyl-2-pentanone	50		55	110	57-138
Toluene	50		54	108	81-121
trans-1,3-Dichloroprope	50		54	108	85-118
1,1,2-Trichloroethane	50		55	110	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: V2PLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		52	104	73-121
2-Hexanone	50		53	106	53-145
Dibromochloromethane	50		53	106	80-124
1,2-Dibromoethane	50		52	104	80-124
Chlorobenzene	50		50	100	82-118
Ethylbenzene	50		52	104	80-122
Xylene (Total)	150		160	107	81-121
Styrene	50		54	108	77-128
Bromoform	50		58	116	77-130
Isopropylbenzene	50		54	108	58-148
1,1,2,2-Tetrachloroetha	50		47	94	76-125
1,3,5-Trimethylbenzene	50		46	92	76-116
1,2,4-Trimethylbenzene	50		46	92	77-117
1,3-Dichlorobenzene	50		46	92	80-116
1,4-Dichlorobenzene	50		46	92	80-114
1,2-Dichlorobenzene	50		48	96	81-116
1,2-Dibromo-3-chloropro	50		50	100	71-126
1,2,4-Trichlorobenzene	50		54	108	67-114
1,1,2-Trichlo-1,2,2-tri	50		56	112	70-130
Methyl Acetate	50		56	112	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		50	100	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50	0.0	54	108	48-135
Chloromethane	50	0.0	51	102	60-118
Vinyl Chloride	50	0.0	54	108	65-113
Bromomethane	50	0.0	150	300*	73-122
Chloroethane	50	0.0	73	146*	72-118
Trichlorofluoromethane	50	0.0	65	130*	68-129
1,1-Dichloroethene	50	0.0	57	114	67-121
Acetone	50	0.0	94	188*	38-161
Carbon Disulfide	50	0.0	61	122	53-137
Methylene Chloride	50	0.0	58	116	59-132
trans-1,2-Dichloroethen	50	0.0	60	120	71-124
Methyl tert-butyl ether	50	0.0	64	128*	75-123
1,1-Dichloroethane	50	0.0	55	110	83-116
2-Butanone	50	0.0	61	122	64-139
cis-1,2-Dichloroethene	50	0.0	52	104	83-120
Chloroform	50	7	61	108	89-118
1,1,1-Trichloroethane	50	0.0	60	120	81-122
Carbon Tetrachloride	50	0.0	62	124	79-125
1,2-Dichloroethane	50	0.0	64	128*	83-123
Benzene	50	0.0	54	108	81-120
Trichloroethene	50	0.0	51	102	77-121
1,2-Dichloropropane	50	0.0	52	104	81-116
Bromodichloromethane	50	0.0	59	118*	90-114
cis-1,3-Dichloropropene	50	0.0	48	96	78-119
4-Methyl-2-pentanone	50	0.0	61	122	57-138
Toluene	50	0.0	56	112	81-121
trans-1,3-Dichloroprope	50	0.0	54	108	85-118
1,1,2-Trichloroethane	50	0.0	61	122	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	50	0.0	53	106	73-121
2-Hexanone	50	0.0	58	116	53-145
Dibromochloromethane	50	0.0	57	114	80-124
1,2-Dibromoethane	50	0.0	54	108	80-124
Chlorobenzene	50	0.0	53	106	82-118
Ethylbenzene	50	0.0	53	106	80-122
Xylene (Total)	150	0.0	160	107	81-121
Styrene	50	0.0	55	110	77-128
Bromoform	50	0.0	65	130	77-130
Isopropylbenzene	50	0.0	54	108	58-148
1,1,2,2-Tetrachloroetha	50	0.0	49	98	76-125
1,3,5-Trimethylbenzene	50	0.0	44	88	76-116
1,2,4-Trimethylbenzene	50	0.0	44	88	77-117
1,3-Dichlorobenzene	50	0.0	44	88	80-116
1,4-Dichlorobenzene	50	0.0	44	88	80-114
1,2-Dichlorobenzene	50	0.0	46	92	81-116
1,2-Dibromo-3-chloropro	50	0.0	54	108	71-126
1,2,4-Trichlorobenzene	50	0.0	46	92	67-114
1,1,2-Trichlo-1,2,2-tri	50	0.0	66	132*	70-130
Methyl Acetate	50	0.0	67	134*	70-130
Cyclohexane	50	0.0	48	96	70-130
Methylcyclohexane	50	0.0	48	96	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	51	102	6	40	48-135
Chloromethane	50	49	98	4	40	60-118
Vinyl Chloride	50	54	108	0	40	65-113
Bromomethane	50	150	300*	0	40	73-122
Chloroethane	50	70	140*	4	40	72-118
Trichlorofluoromethane	50	64	128	2	40	68-129
1,1-Dichloroethene	50	56	112	2	40	67-121
Acetone	50	74	148	24	40	38-161
Carbon Disulfide	50	59	118	3	40	53-137
Methylene Chloride	50	58	116	0	40	59-132
trans-1,2-Dichloroethen	50	60	120	0	40	71-124
Methyl tert-butyl ether	50	64	128*	0	40	75-123
1,1-Dichloroethane	50	54	108	2	40	83-116
2-Butanone	50	53	106	14	40	64-139
cis-1,2-Dichloroethene	50	51	102	2	40	83-120
Chloroform	50	66	118	9	40	89-118
1,1,1-Trichloroethane	50	58	116	3	40	81-122
Carbon Tetrachloride	50	60	120	3	40	79-125
1,2-Dichloroethane	50	62	124*	3	40	83-123
Benzene	50	52	104	4	40	81-120
Trichloroethene	50	51	102	0	40	77-121
1,2-Dichloropropane	50	51	102	2	40	81-116
Bromodichloromethane	50	57	114	3	40	90-114
cis-1,3-Dichloropropene	50	48	96	0	40	78-119
4-Methyl-2-pentanone	50	57	114	7	40	57-138
Toluene	50	55	110	2	40	81-121
trans-1,3-Dichloroprope	50	53	106	2	40	85-118
1,1,2-Trichloroethane	50	58	116	5	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	52	104	2	40	73-121
2-Hexanone	50	54	108	7	40	53-145
Dibromochloromethane	50	56	112	2	40	80-124
1,2-Dibromoethane	50	53	106	2	40	80-124
Chlorobenzene	50	52	104	2	40	82-118
Ethylbenzene	50	52	104	2	40	80-122
Xylene (Total)	150	160	107	0	40	81-121
Styrene	50	49	98	12	40	77-128
Bromoform	50	64	128	2	40	77-130
Isopropylbenzene	50	55	110	2	40	58-148
1,1,2,2-Tetrachloroetha	50	48	96	2	40	76-125
1,3,5-Trimethylbenzene	50	44	88	0	40	76-116
1,2,4-Trimethylbenzene	50	45	90	2	40	77-117
1,3-Dichlorobenzene	50	44	88	0	40	80-116
1,4-Dichlorobenzene	50	44	88	0	40	80-114
1,2-Dichlorobenzene	50	46	92	0	40	81-116
1,2-Dibromo-3-chloropro	50	52	104	4	40	71-126
1,2,4-Trichlorobenzene	50	46	92	0	40	67-114
1,1,2-Trichlo-1,2,2-tri	50	64	128	3	40	70-130
Methyl Acetate	50	66	132*	2	40	70-130
Cyclohexane	50	47	94	2	40	70-130
Methylcyclohexane	50	48	96	0	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 14 out of 100 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740 SDG-B0370	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/6/03

Sample TB-030603

Acetone = 73 ug/L

$$\text{Acetone} = \frac{(101653)(50\ \text{ug/L})}{(753944)(0.092)} = 73.28\ \text{ug/L}$$

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5478

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	73	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	67	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030603

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V2F5478

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: not dec. _____ Date Analyzed: 03/17/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v2.i\030317.B\V2F5478.D
Report Date: 26-Mar-2003 13:01

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v2.i\030317.B\V2F5478.D
Lab Smp Id: B0370-01A Client Smp ID: TB-030603
Inj Date : 17-MAR-2003 22:24
Operator : YD Inst ID: v2.i
Smp Info : TETRA,B0370-01A,TB-030603,V2B0317A,,B0370
Misc Info : 07-MAR-03,
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v2.i\030317.B\v28260.m
Meth Date : 26-Mar-2003 12:45 mtl Quant Type: ISTD
Cal Date : 14-MAR-2003 14:47 Cal File: V2F5408.D ✓
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET5

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	9 Acetone	43	2.822	2.822	(0.495)	101653	72.8363	73
	14 Methylene Chloride	84	3.229	3.229	(0.566)	299106	66.8360	67
$	30 Dibromofluoromethane	113	4.984	4.984	(0.874)	276601	58.2691	58
$	35 1,2-Dichloroethane-d4	102	5.339	5.329	(0.936)	49283	52.9160	53
*	38 Fluorobenzene	96	5.705	5.695	(1.000)	753944	50.0000	
$	47 Toluene-d8	98	7.512	7.512	(0.805)	627187	47.9945	48
*	57 Chlorobenzene-d5	117	9.329	9.319	(1.000)	517448	50.0000	
$	68 Bromofluorobenzene	95	10.875	10.875	(1.166)	231119	41.7850	42
*	81 1,4-Dichlorobenzene-d4	152	12.306	12.296	(1.000)	219288	50.0000	

TCM 3/26/03

0068

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: S1D4372 DFTPP Injection Date: 03/20/03

Instrument ID: S1 DFTPP Injection Time: 1640

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.3
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	67.8
70	Less than 2.0% of mass 69	0.3 (0.4)1
127	40.0 - 60.0% of mass 198	53.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	18.6
365	Greater than 1.0% of mass 198	2.05
441	Present, but less than mass 443	7.2
442	40.0 - 99.9% of mass 198	49.0
443	17.0 - 23.0% of mass 442	9.4 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0501V	SS0320B	S1D4373	03/20/03	1702
02	SSTD0801V	SS0320C	S1D4374	03/20/03	1751
03	SSTD1201V	SS0320D	S1D4375	03/20/03	1839
04	SSTD1601V	SS0320E	S1D4376	03/20/03	1927
05	SSTD0101V	SS0320F	S1D4377	03/20/03	2016
06	SSTD0201V	SS0320G	S1D4378	03/20/03	2104
07					
08					
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22					

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S1 Calibration Date(s): 03/20/03 03/20/03

Calibration Time(s): 1702 2104

LAB FILE ID: RRF160=S1D4376

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.466					1.588	7.8*
bis(2-Chloroethyl)Ether	* 1.213					1.338	8.3*
2-Chlorophenol	* 1.212					1.322	8.3*
2-Methylphenol	* 1.035					1.121	7.1*
2,2'-oxybis(1-Chloropropane)	* 1.829					2.091	12.0*
4-Methylphenol	* 1.097					1.179	6.8*
N-Nitroso-di-n-propylamine	* 0.760					0.870	12.5*
Hexachloroethane	* 0.543					0.603	9.1*
Nitrobenzene	* 0.396					0.419	6.8*
Isophorone	* 0.571					0.617	7.5*
2-Nitrophenol	* 0.235					0.236	1.5*
2,4-Dimethylphenol	* 0.284					0.288	7.4*
2,4-Dichlorophenol	* 0.286					0.285	1.9*
Naphthalene	* 0.987					1.038	5.8*
4-Chloroaniline	* 0.135					0.275	69.7*
bis(2-Chloroethoxy)methane	* 0.427					0.452	6.1*
Hexachlorobutadiene	* 0.164					0.166	2.0*
4-Chloro-3-Methylphenol	* 0.299					0.308	4.0*
2-Methylnaphthalene	* 0.830					0.869	5.4*
Hexachlorocyclopentadiene	* 0.374					0.355	4.3*
2,4,6-Trichlorophenol	* 0.426					0.418	1.7*
2,4,5-Trichlorophenol	* 0.440					0.436	0.8*
2-Chloronaphthalene	* 1.155					1.168	3.7*
2-Nitroaniline	* 0.596					0.618	4.0*
Dimethylphthalate	* 1.384					1.415	3.2*
Acenaphthylene	* 1.954					2.001	3.5*
2,6-Dinitrotoluene	* 0.371					0.369	1.6*
3-Nitroaniline	* 0.559					0.575	2.8*
Acenaphthene	* 1.148					1.175	3.2*
2,4-Dinitrophenol	* 0.263					0.226	15.6*
4-Nitrophenol	* 0.219					0.215	3.0*
Dibenzofuran	* 2.088					2.113	3.0*
2,4-Dinitrotoluene	* 0.474					0.481	2.3*
Diethylphthalate	* 1.431					1.484	3.6*
4-Chlorophenyl-phenylether	* 0.619					0.637	2.7*
Fluorene	* 1.254					1.317	5.0*
4-Nitroaniline	* 0.545					0.569	4.8*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S1 Calibration Date(s): 03/20/03 03/20/03

Calibration Time(s): 1702 2104

LAB FILE ID: RRF160=S1D4376

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol *	0.206					0.192	5.9*
N-Nitrosodiphenylamine (1) *	0.317					0.377	21.8*
4-Bromophenyl-phenylether *	0.213					0.210	2.1*
Hexachlorobenzene *	0.234					0.235	1.8*
Pentachlorophenol *	0.154					0.122	25.4*
Phenanthrene *	1.057					1.072	3.5*
Anthracene *	1.038					1.063	5.0*
Di-n-butylphthalate *	1.473					1.515	5.2*
Fluoranthene *	1.115					1.132	3.7*
Pyrene *	1.268					1.295	2.6*
Butylbenzylphthalate *	0.748					0.758	1.5*
3,3'-Dichlorobenzidine	0.378					0.411	7.7
Benzo(a)anthracene *	1.060					1.087	3.1*
Chrysene *	1.007					1.018	3.4*
bis(2-Ethylhexyl)phthalate *	0.994					0.999	2.7*
Di-n-octylphthalate *	3.224					2.961	7.6*
Benzo(b)fluoranthene *	1.707					1.613	4.5*
Benzo(k)fluoranthene *	1.630					1.611	1.8*
Benzo(a)pyrene *	1.417					1.399	1.1*
Indeno(1,2,3-cd)pyrene *	1.035					1.134	7.8*
Dibenzo(a,h)anthracene *	1.027					1.128	8.6*
Benzo(g,h,i)perylene *	0.939					1.082	12.8*
Nitrobenzene-d5	0.443					0.460	4.4*
2-Fluorobiphenyl *	1.402					1.411	2.6*
Terphenyl-d14 *	0.869					0.865	1.3*
Phenol-d5 *	1.417					1.517	6.4*
2-Fluorophenol *	1.159					1.239	5.8*
2,4,6-Tribromophenol *	0.132					0.122	7.5*
2-Chlorophenol-d4 *	1.272					1.370	6.5*
1,2-Dichlorobenzene-d4 *	0.820					0.882	6.3*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK1C	0*	4*	92	0	0*	80	0*	0*	5
02	S1CLCS	87	87	91	28	44	95	82	84	0
03	FTAMW-2D	12*	52	83	2	0*	68	5*	5*	4
04	FTAMW-2DMS	80	82	76	25	38	91	74	75	0
05	FTAMW-2DMSD	78	80	82	23	28	93	65	64	0
06	FTAMW-2S	84	86	83	22	33	88	73	81	0
07	FTAMW-57S	4*	50	63	4	0*	70	4*	0*	4
08	SBLK2M	0*	4*	96	0	0*	78	0*	0*	5
09	FTAMW-2DRE	9*	53	91	0	0*	52	0*	6*	4
10	FTAMW-57SRE	0*	50	68	0	0*	56	0*	0*	4
11										
12										
13										
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15										
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27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: S1D4380 DFTPP Injection Date: 03/21/03

Instrument ID: S1 DFTPP Injection Time: 1129

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	43.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	63.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	52.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	18.8
365	Greater than 1.0% of mass 198	2.07
441	Present, but less than mass 443	7.7
442	40.0 - 99.9% of mass 198	51.3
443	17.0 - 23.0% of mass 442	10.0 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0501X	SS0321A	S1D4381	03/21/03	1154
02	SBLK1C	MB-6033	S1D4382	03/21/03	1254
03	S1CLCS	LCS-6033	S1D4383	03/21/03	1345
04	FTAMW-2D	B0370-02E	S1D4384	03/21/03	1441
05	FTAMW-2DMS	B0370-02EMS	S1D4385	03/21/03	1531
06	FTAMW-2DMSD	B0370-02EMSD	S1D4386	03/21/03	1621
07	FTAMW-2S	B0370-03E	S1D4387	03/21/03	1710
08	FTAMW-57S	B0370-04E	S1D4388	03/21/03	1801
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S1 Calibration Date: 03/21/03 Time: 1154

Lab File ID: S1D4381 Init. Calib. Date(s): 03/20/03 03/20/03

Init. Calib. Times: 1702 2104

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.588	1.639	0.050	3.2	20.0
bis(2-Chloroethyl)Ether	1.338	1.426	0.050	6.6	100
2-Chlorophenol	1.322	1.369	0.050	3.6	100
2-Methylphenol	1.121	1.156	0.050	3.1	100
2,2'-oxybis(1-Chloropropane)	2.091	2.190	0.050	4.7	100
4-Methylphenol	1.179	1.244	0.050	5.5	100
N-Nitroso-di-n-propylamine	0.870	0.899	0.050	3.3	100
Hexachloroethane	0.603	0.639	0.050	6.0	100
Nitrobenzene	0.419	0.432	0.050	3.1	100
Isophorone	0.617	0.649	0.050	5.2	100
2-Nitrophenol	0.236	0.245	0.050	3.8	20.0
2,4-Dimethylphenol	0.288	0.280	0.050	-2.8	100
2,4-Dichlorophenol	0.285	0.296	0.050	3.8	20.0
Naphthalene	1.038	1.076	0.050	3.7	100
4-Chloroaniline	0.275	0.242	0.050	-12.0	100
bis(2-Chloroethoxy)methane	0.452	0.465	0.050	2.9	100
Hexachlorobutadiene	0.166	0.173	0.050	4.2	20.0
4-Chloro-3-Methylphenol	0.308	0.318	0.050	3.2	20.0
2-Methylnaphthalene	0.869	0.900	0.050	3.6	100
Hexachlorocyclopentadiene	0.355	0.365	0.050	2.8	100
2,4,6-Trichlorophenol	0.418	0.422	0.050	1.0	100
2,4,5-Trichlorophenol	0.436	0.413	0.050	-5.3	100
2-Chloronaphthalene	1.168	1.183	0.050	1.3	100
2-Nitroaniline	0.618	0.640	0.050	3.6	100
Dimethylphthalate	1.415	1.458	0.050	3.0	100
Acenaphthylene	2.001	2.068	0.050	3.3	100
2,6-Dinitrotoluene	0.369	0.378	0.050	2.4	100
3-Nitroaniline	0.575	0.613	0.050	6.6	100
Acenaphthene	1.175	1.207	0.050	2.7	20.0
2,4-Dinitrophenol	0.226	0.252	0.050	11.5	100
4-Nitrophenol	0.215	0.223	0.050	3.7	100
Dibenzofuran	2.113	2.136	0.050	1.1	100
2,4-Dinitrotoluene	0.481	0.500	0.050	4.0	100
Diethylphthalate	1.484	1.537	0.050	3.6	100
4-Chlorophenyl-phenylether	0.637	0.660	0.050	3.6	100
Fluorene	1.317	1.348	0.050	2.4	100
4-Nitroaniline	0.569	0.601	0.050	5.6	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S1 Calibration Date: 03/21/03 Time: 1154

Lab File ID: S1D4381 Init. Calib. Date(s): 03/20/03 03/20/03

Init. Calib. Times: 1702 2104

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.192	0.204	0.050	6.2	100
N-Nitrosodiphenylamine(1)	0.377	0.387	0.050	2.6	20.0
4-Bromophenyl-phenylether	0.210	0.212	0.050	1.0	100
Hexachlorobenzene	0.235	0.241	0.050	2.6	100
Pentachlorophenol	0.122	0.124	0.050	1.6	20.0
Phenanthrene	1.072	1.098	0.050	2.4	100
Anthracene	1.063	1.077	0.050	1.3	100
Di-n-butylphthalate	1.515	1.544	0.050	1.9	100
Fluoranthene	1.132	1.174	0.050	3.7	20.0
Pyrene	1.295	1.338	0.050	3.3	100
Butylbenzylphthalate	0.758	0.769	0.050	1.4	100
3,3'-Dichlorobenzidine	0.411	0.436	0.050	6.1	100
Benzo(a)anthracene	1.087	1.116	0.050	2.7	100
Chrysene	1.018	1.035	0.050	1.7	100
bis(2-Ethylhexyl)phthalate	0.999	1.014	0.050	1.5	100
Di-n-octylphthalate	2.961	2.867	0.050	-3.2	20.0
Benzo(b)fluoranthene	1.613	1.667	0.050	3.3	100
Benzo(k)fluoranthene	1.611	1.650	0.050	2.4	100
Benzo(a)pyrene	1.399	1.399	0.050	0.0	20.0
Indeno(1,2,3-cd)pyrene	1.134	1.184	0.050	4.4	100
Dibenzo(a,h)anthracene	1.128	1.178	0.050	4.4	100
Benzo(g,h,i)perylene	1.082	1.138	0.050	5.2	100
Nitrobenzene-d5	0.460	0.480	0.050	4.3	100
2-Fluorobiphenyl	1.411	1.425	0.050	1.0	100
Terphenyl-d14	0.865	0.885	0.050	2.3	100
Phenol-d5	1.517	1.571	0.050	3.6	100
2-Fluorophenol	1.239	1.266	0.050	2.2	100
2,4,6-Tribromophenol	0.122	0.124	0.050	1.6	100
2-Chlorophenol-d4	1.370	1.433	0.050	4.6	100
1,2-Dichlorobenzene-d4	0.882	0.931	0.050	5.6	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4382

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK1C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4382

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK1C

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4382

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		8	32	0-127
bis(2-Chloroethyl)Ether	25		23	92	46-109
2-Chlorophenol	25		21	84	22-117
2-Methylphenol	25		15	60	40-104
2,2'-oxybis(1-Chloropro	25		24	96	10-134
4-Methylphenol	25		15	60	35-106
N-Nitroso-di-n-prop.(1)	25		26	104	44-122
Hexachloroethane	25		24	96	24-104
Nitrobenzene	25		24	96	47-112
Isophorone	25		31	124*	48-118
2-Nitrophenol	25		23	92	29-122
2,4-Dimethylphenol	25		4	16	14-109
2,4-Dichlorophenol	25		22	88	31-122
Naphthalene	25		23	92	38-117
4-Chloroaniline	25		3	12	0-152
bis(2-Chloroethoxy)meth	25		25	100	49-112
Hexachlorobutadiene	25		22	88	28-109
4-Chloro-3-Methylphenol	25		22	88	48-117
2-Methylnaphthalene	25		18	72	43-113
Hexachlorocyclopentadie	25		22	88	34-103
2,4,6-Trichlorophenol	25		23	92	34-127
2,4,5-Trichlorophenol	25		23	92	32-131
2-Chloronaphthalene	25		24	96	47-116
2-Nitroaniline	25		19	76	51-120
Dimethylphthalate	25		24	96	53-124
Acenaphthylene	25		23	92	50-119
2,6-Dinitrotoluene	25		24	96	52-122
3-Nitroaniline	25		15	60	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		24	96	50-121
2,4-Dinitrophenol	25		20	80	0-144
4-Nitrophenol	25		7	28	0-160
Dibenzofuran	25		18	72	51-122
2,4-Dinitrotoluene	25		25	100	52-126
Diethylphthalate	25		26	104	53-126
4-Chlorophenyl-phenylet	25		25	100	50-124
Fluorene	25		24	96	52-125
4-Nitroaniline	25		17	68	47-117
4,6-Dinitro-2-methylphe	25		23	92	3-151
N-Nitrosodiphenylamine	25		37	148	50-150
4-Bromophenyl-phenyleth	25		24	96	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		23	92	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		27	108	56-132
Fluoranthene	25		26	104	53-130
Pyrene	25		25	100	53-131
Butylbenzylphthalate	25		25	100	54-128
3,3'-Dichlorobenzidine	25		4	16*	41-117
Benzo(a)anthracene	25		25	100	56-124
Chrysene	25		25	100	53-123
bis(2-Ethylhexyl)phthal	25		31	124	56-127
Di-n-octylphthalate	25		22	88	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		25	100	60-124
Benzo(a)pyrene	25		23	92	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: S1CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		28	112	23-152
Dibenzo(a,h)anthracene	25		27	108	60-122
Benzo(g,h,i)perylene	25		29	116	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 2 out of 59 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	25	0.0	7	28	0-127
bis(2-Chloroethyl)Ether	25	0.0	21	84	46-109
2-Chlorophenol	25	0.0	19	76	22-117
2-Methylphenol	25	0.0	14	56	40-104
2,2'-oxybis(1-Chloropro	25	0.0	22	88	10-134
4-Methylphenol	25	0.0	14	56	35-106
N-Nitroso-di-n-prop.(1)	25	0.0	24	96	44-122
Hexachloroethane	25	0.0	22	88	24-104
Nitrobenzene	25	0.0	22	88	47-112
Isophorone	25	0.0	30	120*	48-118
2-Nitrophenol	25	0.0	21	84	29-122
2,4-Dimethylphenol	25	0.0	3	12*	14-109
2,4-Dichlorophenol	25	0.0	21	84	31-122
Naphthalene	25	0.0	22	88	38-117
4-Chloroaniline	25	0.0	6	24	0-152
bis(2-Chloroethoxy)meth	25	0.0	23	92	49-112
Hexachlorobutadiene	25	0.0	20	80	28-109
4-Chloro-3-Methylphenol	25	0.0	21	84	48-117
2-Methylnaphthalene	25	0.0	17	68	43-113
Hexachlorocyclopentadie	25	0.0	20	80	34-103
2,4,6-Trichlorophenol	25	0.0	22	88	34-127
2,4,5-Trichlorophenol	25	0.0	22	88	32-131
2-Chloronaphthalene	25	0.0	23	92	47-116
2-Nitroaniline	25	0.0	18	72	51-120
Dimethylphthalate	25	0.0	24	96	53-124
Acenaphthylene	25	0.0	22	88	50-119
2,6-Dinitrotoluene	25	0.0	24	96	52-122
3-Nitroaniline	25	0.0	15	60	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	25	0.0	23	92	50-121
2,4-Dinitrophenol	25	0.0	19	76	0-144
4-Nitrophenol	25	0.0	7	28	0-160
Dibenzofuran	25	0.0	18	72	51-122
2,4-Dinitrotoluene	25	0.0	24	96	52-126
Diethylphthalate	25	0.0	25	100	53-126
4-Chlorophenyl-phenylet	25	0.0	23	92	50-124
Fluorene	25	0.0	23	92	52-125
4-Nitroaniline	25	0.0	16	64	47-117
4,6-Dinitro-2-methylphe	25	0.0	22	88	3-151
N-Nitrosodiphenylamine	25	0.0	38	152*	50-150
4-Bromophenyl-phenyleth	25	0.0	24	96	51-124
Hexachlorobenzene	25	0.0	24	96	52-124
Pentachlorophenol	25	0.0	23	92	5-125
Phenanthrene	25	0.0	24	96	52-128
Anthracene	25	0.0	24	96	52-127
Di-n-butylphthalate	25	0.0	26	104	56-132
Fluoranthene	25	0.0	25	100	53-130
Pyrene	25	0.0	24	96	53-131
Butylbenzylphthalate	25	0.0	25	100	54-128
3,3'-Dichlorobenzidine	25	0.0	16	64	41-117
Benzo(a)anthracene	25	0.0	25	100	56-124
Chrysene	25	0.0	24	96	53-123
bis(2-Ethylhexyl)phthal	25	6	29	92	56-127
Di-n-octylphthalate	25	0.0	21	84	59-138
Benzo(b)fluoranthene	25	0.0	23	92	58-126
Benzo(k)fluoranthene	25	0.0	24	96	60-124
Benzo(a)pyrene	25	0.0	23	92	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	0.0	26	104	23-152
Dibenzo(a,h)anthracene	25	0.0	26	104	60-122
Benzo(g,h,i)perylene	25	0.0	28	112	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	6	24	15	40	0-127
bis(2-Chloroethyl)Ether	25	20	80	5	40	46-109
2-Chlorophenol	25	17	68	11	40	22-117
2-Methylphenol	25	14	56	0	40	40-104
2,2'-oxybis(1-Chloropro	25	21	84	5	40	10-134
4-Methylphenol	25	14	56	0	40	35-106
N-Nitroso-di-n-prop.(1)	25	23	92	4	40	44-122
Hexachloroethane	25	17	68	26	40	24-104
Nitrobenzene	25	22	88	0	40	47-112
Isophorone	25	29	116	3	40	48-118
2-Nitrophenol	25	21	84	0	40	29-122
2,4-Dimethylphenol	25	6	24	67*	40	14-109
2,4-Dichlorophenol	25	21	84	0	40	31-122
Naphthalene	25	21	84	5	40	38-117
4-Chloroaniline	25	1	4	143*	40	0-152
bis(2-Chloroethoxy)meth	25	23	92	0	40	49-112
Hexachlorobutadiene	25	19	76	5	40	28-109
4-Chloro-3-Methylphenol	25	21	84	0	40	48-117
2-Methylnaphthalene	25	17	68	0	40	43-113
Hexachlorocyclopentadie	25	18	72	10	40	34-103
2,4,6-Trichlorophenol	25	22	88	0	40	34-127
2,4,5-Trichlorophenol	25	22	88	0	40	32-131
2-Chloronaphthalene	25	22	88	4	40	47-116
2-Nitroaniline	25	18	72	0	40	51-120
Dimethylphthalate	25	23	92	4	40	53-124
Acenaphthylene	25	21	84	5	40	50-119
2,6-Dinitrotoluene	25	23	92	4	40	52-122
3-Nitroaniline	25	13	52	14	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	23	92	0	40	50-121
2,4-Dinitrophenol	25	20	80	5	40	0-144
4-Nitrophenol	25	7	28	0	40	0-160
Dibenzofuran	25	18	72	0	40	51-122
2,4-Dinitrotoluene	25	24	96	0	40	52-126
Diethylphthalate	25	25	100	0	40	53-126
4-Chlorophenyl-phenylet	25	23	92	0	40	50-124
Fluorene	25	23	92	0	40	52-125
4-Nitroaniline	25	16	64	0	40	47-117
4,6-Dinitro-2-methylphe	25	22	88	0	40	3-151
N-Nitrosodiphenylamine	25	33	132	14	40	50-150
4-Bromophenyl-phenyleth	25	23	92	4	40	51-124
Hexachlorobenzene	25	24	96	0	40	52-124
Pentachlorophenol	25	23	92	0	40	5-125
Phenanthrene	25	24	96	0	40	52-128
Anthracene	25	23	92	4	40	52-127
Di-n-butylphthalate	25	25	100	4	40	56-132
Fluoranthene	25	25	100	0	40	53-130
Pyrene	25	23	92	4	40	53-131
Butylbenzylphthalate	25	24	96	4	40	54-128
3,3'-Dichlorobenzidine	25	5	20*	105*	40	41-117
Benzo(a)anthracene	25	24	96	4	40	56-124
Chrysene	25	23	92	4	40	53-123
bis(2-Ethylhexyl)phthal	25	27	84	9	40	56-127
Di-n-octylphthalate	25	20	80	5	40	59-138
Benzo(b)fluoranthene	25	22	88	4	40	58-126
Benzo(k)fluoranthene	25	23	92	4	40	60-124
Benzo(a)pyrene	25	20	80	14	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - EPA Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	25	100	4	40	23-152
Dibenzo(a,h)anthracene	25	25	100	4	40	60-122
Benzo(g,h,i)perylene	25	25	100	11	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 59 outside limits
Spike Recovery: 4 out of 118 outside limits

COMMENTS: _____

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: S2D2718 DFTPP Injection Date: 03/21/03

Instrument ID: S2 DFTPP Injection Time: 1020

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.3
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	61.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	47.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.0% of mass 198	2.62
441	Present, but less than mass 443	14.0
442	40.0 - 99.9% of mass 198	88.3
443	17.0 - 23.0% of mass 442	16.7 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502C	SS0321A	S2D2719	03/21/03	1036
02	SSTD1602C	SS0321B	S2D2720	03/21/03	1116
03	SSTD0102C	SS0321C	S2D2721	03/21/03	1155
04	SSTD1202C	SS0321D	S2D2722	03/21/03	1235
05	SSTD0202C	SS0321E	S2D2723	03/21/03	1314
06	SSTD0802C	SS0321F	S2D2724	03/21/03	1354
07					
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22					

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.475					1.492	3.6*
bis(2-Chloroethyl)Ether	* 1.158					1.238	6.6*
2-Chlorophenol	* 1.301					1.320	2.2*
2-Methylphenol	* 1.122					1.138	3.3*
2,2'-oxybis(1-Chloropropane)	* 1.363					1.551	13.8*
4-Methylphenol	* 1.166					1.189	2.5*
N-Nitroso-di-n-propylamine	* 0.678					0.827	13.9*
Hexachloroethane	* 0.593					0.614	4.6*
Nitrobenzene	* 0.400					0.401	3.5*
Isophorone	* 0.557					0.570	4.6*
2-Nitrophenol	* 0.233					0.222	4.0*
2,4-Dimethylphenol	* 0.335					0.308	5.6*
2,4-Dichlorophenol	* 0.325					0.319	6.2*
Naphthalene	* 1.104					1.080	1.7*
4-Chloroaniline	* 0.111					0.234	70.3*
bis(2-Chloroethoxy)methane	* 0.443					0.442	2.3*
Hexachlorobutadiene	* 0.214					0.209	3.3*
4-Chloro-3-Methylphenol	* 0.312					0.314	3.7*
2-Methylnaphthalene	* 0.884					0.871	2.4*
Hexachlorocyclopentadiene	* 0.374					0.292	28.9*
2,4,6-Trichlorophenol	* 0.439					0.396	9.2*
2,4,5-Trichlorophenol	* 0.474					0.435	6.1*
2-Chloronaphthalene	* 1.245					1.185	4.5*
2-Nitroaniline	* 0.547					0.511	6.6*
Dimethylphthalate	* 1.358					1.327	3.4*
Acenaphthylene	* 1.864					1.845	2.4*
2,6-Dinitrotoluene	* 0.343					0.330	3.0*
3-Nitroaniline	* 0.442					0.457	6.7*
Acenaphthene	* 1.120					1.082	3.1*
2,4-Dinitrophenol	* 0.225					0.179	19.9*
4-Nitrophenol	* 0.167					0.138	20.7*
Dibenzofuran	* 2.106					2.114	1.8*
2,4-Dinitrotoluene	* 0.459					0.428	5.2*
Diethylphthalate	* 1.374					1.325	3.8*
4-Chlorophenyl-phenylether	* 0.679					0.643	5.1*
Fluorene	* 1.310					1.278	4.4*
4-Nitroaniline	* 0.370					0.384	13.6*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.196					0.178	10.5*
N-Nitrosodiphenylamine (1)	* 0.312					0.354	18.1*
4-Bromophenyl-phenylether	* 0.252					0.243	3.3*
Hexachlorobenzene	* 0.305					0.299	1.5*
Pentachlorophenol	* 0.140					0.109	29.3*
Phenanthrene	* 1.155					1.112	3.3*
Anthracene	* 1.138					1.088	3.1*
Di-n-butylphthalate	* 1.442					1.401	2.4*
Fluoranthene	* 1.235					1.182	3.3*
Pyrene	* 1.123					1.108	2.0*
Butylbenzylphthalate	* 0.585					0.569	2.4*
3,3'-Dichlorobenzidine	0.396					0.420	9.6
Benzo(a)anthracene	* 1.038					1.047	2.7*
Chrysene	* 1.002					0.965	2.5*
bis(2-Ethylhexyl)phthalate	* 0.798					0.790	1.9*
Di-n-octylphthalate	* 2.135					2.057	5.7*
Benzo(b)fluoranthene	* 1.903					1.638	11.2*
Benzo(k)fluoranthene	* 1.435					1.531	5.3*
Benzo(a)pyrene	* 1.425					1.345	4.1*
Indeno(1,2,3-cd)pyrene	* 1.687					1.622	6.0*
Dibenzo(a,h)anthracene	* 1.408					1.361	6.3*
Benzo(g,h,i)perylene	* 1.355					1.312	5.3*
Nitrobenzene-d5	0.445					0.432	2.7*
2-Fluorobiphenyl	* 1.582					1.482	5.2*
Terphenyl-d14	* 0.839					0.831	1.8*
Phenol-d5	* 1.447					1.478	3.0*
2-Fluorophenol	* 1.246					1.180	6.4*
2,4,6-Tribromophenol	* 0.156					0.151	4.1*
2-Chlorophenol-d4	* 1.303					1.313	2.2*
1,2-Dichlorobenzene-d4	* 0.883					0.898	3.1*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Lab File ID: S2D2905 DFTPP Injection Date: 03/31/03

Instrument ID: S2 DFTPP Injection Time: 1139

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	59.5
68	Less than 2.0% of mass 69	0.4 (0.6)1
69	Mass 69 relative abundance	66.3
70	Less than 2.0% of mass 69	0.4 (0.7)1
127	40.0 - 60.0% of mass 198	52.5
197	Less than 1.0% of mass 198	0.2
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.5
275	10.0 - 30.0% of mass 198	25.3
365	Greater than 1.0% of mass 198	4.35
441	Present, but less than mass 443	11.5
442	40.0 - 99.9% of mass 198	74.2
443	17.0 - 23.0% of mass 442	13.9 (18.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502P	SS0331A	S2D2906	03/31/03	1157
02	SBLK2M	MB-6033	S2D2909	03/31/03	1419
03	FTAMW-2DRE	B0370-02ERE	S2D2910	03/31/03	1458
04	FTAMW-57SRE	B0370-04ERE	S2D2911	03/31/03	1538
05					
06					
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S2 Calibration Date: 03/31/03 Time: 1157

Lab File ID: S2D2906 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.492	1.295	0.050	-13.2	20.0
bis(2-Chloroethyl)Ether	1.238	0.983	0.050	-20.6	100
2-Chlorophenol	1.320	1.239	0.050	-6.1	100
2-Methylphenol	1.138	0.955	0.050	-16.1	100
2,2'-oxybis(1-Chloropropane)	1.551	0.994	0.050	-35.9	100
4-Methylphenol	1.189	1.076	0.050	-9.5	100
N-Nitroso-di-n-propylamine	0.827	0.643	0.050	-22.2	100
Hexachloroethane	0.614	0.618	0.050	0.6	100
Nitrobenzene	0.401	0.416	0.050	3.7	100
Isophorone	0.570	0.552	0.050	-3.2	100
2-Nitrophenol	0.222	0.239	0.050	7.6	20.0
2,4-Dimethylphenol	0.308	0.318	0.050	3.2	100
2,4-Dichlorophenol	0.319	0.336	0.050	5.3	20.0
Naphthalene	1.080	0.968	0.050	-10.4	100
4-Chloroaniline	0.234	0.134	0.050	-42.7	100
bis(2-Chloroethoxy)methane	0.442	0.377	0.050	-14.7	100
Hexachlorobutadiene	0.209	0.246	0.050	17.7	20.0
4-Chloro-3-Methylphenol	0.314	0.326	0.050	3.8	20.0
2-Methylnaphthalene	0.871	0.839	0.050	-3.7	100
Hexachlorocyclopentadiene	0.292	0.168	0.050	-42.5	100
2,4,6-Trichlorophenol	0.396	0.411	0.050	3.8	100
2,4,5-Trichlorophenol	0.435	0.500	0.050	14.9	100
2-Chloronaphthalene	1.185	1.076	0.050	-9.2	100
2-Nitroaniline	0.511	0.498	0.050	-2.5	100
Dimethylphthalate	1.327	1.529	0.050	15.2	100
Acenaphthylene	1.845	1.751	0.050	-5.1	100
2,6-Dinitrotoluene	0.330	0.335	0.050	1.5	100
3-Nitroaniline	0.457	0.462	0.050	1.1	100
Acenaphthene	1.082	1.105	0.050	2.1	20.0
2,4-Dinitrophenol	0.179	0.228	0.050	27.4	100
4-Nitrophenol	0.138	0.222	0.050	60.9	100
Dibenzofuran	2.114	2.182	0.050	3.2	100
2,4-Dinitrotoluene	0.428	0.516	0.050	20.6	100
Diethylphthalate	1.325	1.586	0.050	19.7	100
4-Chlorophenyl-phenylether	0.643	0.702	0.050	9.2	100
Fluorene	1.278	1.384	0.050	8.3	100
4-Nitroaniline	0.384	0.498	0.050	29.7	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: S2 Calibration Date: 03/31/03 Time: 1157

Lab File ID: S2D2906 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.178	0.184	0.050	3.4	100
N-Nitrosodiphenylamine(1)	0.354	0.324	0.050	-8.5	20.0
4-Bromophenyl-phenylether	0.243	0.247	0.050	1.6	100
Hexachlorobenzene	0.299	0.317	0.050	6.0	100
Pentachlorophenol	0.109	0.101	0.050	-7.3	20.0
Phenanthrene	1.112	1.043	0.050	-6.2	100
Anthracene	1.088	1.131	0.050	4.0	100
Di-n-butylphthalate	1.401	1.439	0.050	2.7	100
Fluoranthene	1.182	1.242	0.050	5.1	20.0
Pyrene	1.108	1.067	0.050	-3.7	100
Butylbenzylphthalate	0.569	0.629	0.050	10.5	100
3,3'-Dichlorobenzidine	0.420	0.420	0.050	0.0	100
Benzo(a)anthracene	1.047	1.010	0.050	-3.5	100
Chrysene	0.965	1.132	0.050	17.3	100
bis(2-Ethylhexyl)phthalate	0.790	0.750	0.050	-5.1	100
Di-n-octylphthalate	2.057	2.157	0.050	4.9	20.0
Benzo(b)fluoranthene	1.638	1.534	0.050	-6.3	100
Benzo(k)fluoranthene	1.531	2.128	0.050	39.0	100
Benzo(a)pyrene	1.345	1.507	0.050	12.0	20.0
Indeno(1,2,3-cd)pyrene	1.622	1.870	0.050	15.3	100
Dibenzo(a,h)anthracene	1.361	1.537	0.050	12.9	100
Benzo(g,h,i)perylene	1.312	1.416	0.050	7.9	100
Nitrobenzene-d5	0.432	0.432	0.050	0.0	100
2-Fluorobiphenyl	1.482	1.443	0.050	-2.6	100
Terphenyl-d14	0.831	0.879	0.050	5.8	100
Phenol-d5	1.478	1.295	0.050	-12.4	100
2-Fluorophenol	1.180	1.028	0.050	-12.9	100
2,4,6-Tribromophenol	0.151	0.165	0.050	9.3	100
2-Chlorophenol-d4	1.313	1.229	0.050	-6.4	100
1,2-Dichlorobenzene-d4	0.898	0.906	0.050	0.9	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2909

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2909

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2M

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6033

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2909

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE ____ OF ____

CLIENT	JOB NUMBER		
NASA Wallops Island CTO-848	Job- 4740-SOG-B0370		
SUBJECT: Sample Calculation			
BASED ON	DRAWING NUMBER		
BY: Bernard F Spada	CHECKED BY	APPROVED BY	DATE: 5/7/03

Sample
FTA MW-20

bis(2-ethylhexyl)phthalate = 6 ug/L

$$bis\,2EHP = \frac{(66157)(40\,ng)(1000\,\mu L)}{(480972)(0.999)(1\,\mu L)(1000\,mL)} = 5.51\,ng/mL = ug/L$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4384

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: B0370-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S1D4384

Level: (low/med) LOW Date Received: 03/07/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/11/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/21/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

Data File: S1D4384.D
Report Date: 01-Apr-2003 14:47

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\S1.i\030321.B\S1D4384.D
Lab Smp Id: B0370-02E Client Smp ID: FTAMW-2D
Inj Date : 21-MAR-2003 14:41
Operator : WC Inst ID: S1.i
Smp Info : B0370-02E,FTAMW-2D,6033,WC,,B0370
Misc Info : ,,,1,,,,,,,11-MAR-03,07-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\S1.i\030321.B\S1_8270_OLM.m
Meth Date : 21-Mar-2003 12:50 mtl Quant Type: ISTD
Cal Date : 20-MAR-2003 21:04 Cal File: S1D4378.D✓
Als bottle: 28
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub✓
Target Version: 4.03
Processing Host: TARGET2

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	5 Phenol-d5	99	8.013	8.017	(0.916)	10431	1.64133	2(a)
$	9 2-Chlorophenol-d4	132	8.316	8.320	(0.951)	22054	3.84298	4(aR)
*	12 1,4-Dichlorobenzene-d4	152	8.748	8.741	(1.000)	167602	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	9.029	9.033	(1.032)	9636	2.60683	3(aR)
$	22 Nitrobenzene-d5	82	9.785	9.789	(0.874)	44002	6.28406	6(aR)
*	31 Naphthalene-d8	136	11.200	11.204	(1.000)	608519	40.0000	
$	41 2-Fluorobiphenyl	172	13.383	13.387	(0.906)	283578	26.0727	26
*	48 Acenaphthene-d10	164	14.765	14.770	(1.000)	308300	40.0000	
$	60 2,4,6-Tribromophenol	330	16.375	16.379	(0.919)	80218	51.4236	51
*	64 Phenanthrene-d10	188	17.812	17.816	(1.000)	510737	40.0000	
$	72 Terphenyl-d14	244	21.096	21.090	(0.908)	433028	41.6514	42
*	76 Chrysene-d12	240	23.235	23.240	(1.000)	480972	40.0000	
	78 bis(2-Ethylhexyl)phthalate	149	23.268	23.272	(1.001)	66157	5.50460	6
*	83 Perylene-d12	264	26.325	26.329	(1.000)	315078	40.0000	

JC
4-1-03

0203

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BI	AR1660BI	03/14/03	1032	6.77	22.12
23	BBLK1A	MB-6030	03/14/03	1313	6.79	22.14
24	B1ALCS	LCS-6031	03/14/03	1348	6.78	22.13
25	FTAMW-2D	B0370-02E	03/14/03	1645	6.77	22.12
26	FTAMW-2DMS	B0370-02EMS	03/14/03	1720	6.77	22.12
27	FTAMW-2DMSD	B0370-02EMSD	03/14/03	1755	6.77	22.12
28	FTAMW-2S	B0370-03E	03/14/03	1831	6.77	22.12
29	FTAMW-57S	B0370-04E	03/14/03	1906	6.77	22.12
30	AR1660BJ	AR1660BJ	03/14/03	2203	6.78	22.13
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BI	AR1660BI	03/14/03	1032	8.45	25.35
23	BBLK1A	MB-6030	03/14/03	1313	8.46	25.36
24	B1ALCS	LCS-6031	03/14/03	1348	8.45	25.35
25	FTAMW-2D	B0370-02E	03/14/03	1645	8.45	25.34
26	FTAMW-2DMS	B0370-02EMS	03/14/03	1720	8.45	25.34
27	FTAMW-2DMSD	B0370-02EMSD	03/14/03	1755	8.45	25.34
28	FTAMW-2S	B0370-03E	03/14/03	1831	8.45	25.34
29	FTAMW-57S	B0370-04E	03/14/03	1906	8.45	25.34
30	AR1660BJ	AR1660BJ	03/14/03	2203	8.45	25.35
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date: 03/14/03 Time: 1032

Lab File ID: E1D9850F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10975.000	0.01	8.0	15.0
(2)	24115.960	21705.000	0.01	10.0	15.0
(3)	14202.320	12629.000	0.01	11.1	15.0
Aroclor-1260	29455.240	26387.000	0.01	10.4	15.0
(2)	40190.280	39855.000	0.01	0.8	15.0
(3)	23147.960	20757.000	0.01	10.3	15.0
Tetrachloro-m-xylene	503358.00	484100.00	0.01	3.8	15.0
Decachlorobiphenyl	581298.00	509350.00	0.01	12.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date: 03/14/03 Time: 1032

Lab File ID: E1D9850R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43739.000	0.01	6.9	15.0
(2)	24183.600	21862.000	0.01	9.6	15.0
(3)	20737.640	19345.000	0.01	6.7	15.0
Aroclor-1260	45409.320	42769.000	0.01	5.8	15.0
(2)	46248.440	43713.000	0.01	5.5	15.0
(3)	64584.960	64132.000	0.01	0.7	15.0
Tetrachloro-m-xylene	741526.00	722800.00	0.01	2.5	15.0
Decachlorobiphenyl	711418.00	713900.00	0.01	0.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date: 03/14/03 Time: 2203

Lab File ID: E1D9870F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10837.000	0.01	9.2	15.0
(2)	24115.960	21431.000	0.01	11.1	15.0
(3)	14202.320	12557.000	0.01	11.6	15.0
Aroclor-1260	29455.240	26201.000	0.01	11.0	15.0
(2)	40190.280	39416.000	0.01	1.9	15.0
(3)	23147.960	20410.000	0.01	11.8	15.0
Tetrachloro-m-xylene	503358.00	482850.00	0.01	4.1	15.0
Decachlorobiphenyl	581298.00	509200.00	0.01	12.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID: E1 Calibration Date: 03/14/03 Time: 2203

Lab File ID: E1D9870R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44400.000	0.01	5.4	15.0
(2)	24183.600	22286.000	0.01	7.8	15.0
(3)	20737.640	19762.000	0.01	4.7	15.0
Aroclor-1260	45409.320	43967.000	0.01	3.2	15.0
(2)	46248.440	45784.000	0.01	1.0	15.0
(3)	64584.960	66339.000	0.01	2.7	15.0
Tetrachloro-m-xylene	741526.00	739800.00	0.01	0.2	15.0
Decachlorobiphenyl	711418.00	743550.00	0.01	4.5	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix: (soil/water) WATER Lab Sample ID: MB-6030

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9852F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1A	90	94	75	86			0
02	B1ALCS	91	93	81	94			0
03	FTAMW-2D	83	87	47	53			0
04	FTAMW-2DMS	87	88	48	54			0
05	FTAMW-2DMSD	85	86	51	57			0
06	FTAMW-2S	83	87	22*	23*			2
07	FTAMW-57S	73	78	81	90			0
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

	ADVISORY QC LIMITS
S1 (TCX) = Tetrachloro-m-xylene	(29-158)
S2 (DCB) = Decachlorobiphenyl	(30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: B1ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		8.7	87	45-162
Aroclor-1260	10		9.1	91	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 3
WATER PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix Spike - Sample No.: FTAMW-2D

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Aroclor-1016	10	0.00	8.1	81	45-162
Aroclor-1260	10	0.00	7.7	77	54-159

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	8.3	83	2	40	45-162
Aroclor-1260	10	8.3	83	8	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 29, 2003**

FROM: **ERIN M. FAUST** **COPIES:** **DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO 848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0370

SAMPLES: 3/Aqueous/

FTAMW-2D FTAMW-2S FTAMW-57S

Overview

The sample set for CTO 848, SDG B0370, NASA Wallops Island, consists of three (3) aqueous environmental samples.

The samples were analyzed for chloride, nitrate, nitrite, sulfate, total organic carbon (TOC) and total and dissolved target analyte list (TAL) metals. Samples analyzed for dissolved metals are designated "-F". The samples were collected by Tetra Tech NUS on March 6, 2003 and analyzed by Mitkem Corporation. Metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 method 7470A. Analyses for TOC were conducted using EPA method 415.1. Analyses for chloride, nitrate, nitrite and sulfate were conducted using EPA method 300.0.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits and analyte quantitation.

Metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) instrumentation. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) instrumentation.

Areas of concern with respect to data quality are listed below.

Minor Problems

- The 48-hour holding time for nitrate and nitrite was exceeded by 1-2 days for all three samples. Positive results reported for nitrate were qualified as biased low, "L". Nondetected results reported for nitrite were qualified as biased low, "UL".

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Samples Affected: All

Analyte	Maximum Concentration	Action Level
Aluminum[(1)]	48.683 µg/L	243.42 µg/L
Antimony[(1)]	4.381 µg/L	21.90 µg/L
Beryllium	0.60 µg/L	3.0 µg/L
Cobalt	1.4 µg/L	7.0 µg/L
Copper[(1)]	8.06 µg/L	40.3 µg/L
Iron[(1)]	30.678 µg/L	153.39 µg/L
Magnesium	51.5 µg/L	257.5 µg/L
Manganese	2.4 µg/L	12.0 µg/L
Nickel	1.2 µg/L	6.0 µg/L
Potassium	267.9 µg/L	1339.5 µg/L
Sodium	91.4 µg/L	457 µg/L
Vanadium	0.90 µg/L	4.5 µg/L
Chloride	0.22 mg/L	1.1 mg/L

[(1)] Maximum contamination present in an aqueous preparation blank.

An action level of five times the maximum contaminant level has been established to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results < the action level reported for aluminum, antimony, cobalt, copper, iron, manganese, nickel, potassium and vanadium were qualified, "B", as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or were nondetected.

- Laboratory Control Sample (LCS) percent recovery for mercury was < 80% quality control limit. The nondetected results reported for mercury were qualified as biased low, "UL".

Notes

Contract Required Detection Limit (CRDL) percent recoveries could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the Interference Check Standard A (ICSA) on the Form 4; however, these results did not need to be evaluated because the interfering analytes were not present in the environmental samples at significant levels.

The nondetected results for nitrite were reported as "0 U" in the electronic database. The data reviewer corrected the results by replacing the zero with the laboratory's listed reporting limit (RL).

All TOC results were reported as positive detections by the lab in the electronic database. The data reviewer corrected the results to reflect the nondetects reported by the laboratory on the sample result forms.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. Nitrate and nitrite results were qualified due to holding time noncompliance. Mercury was qualified due to LCS noncompliance.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 as amended for use within USEPA Region III.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

L - Positive result is considered biased low, "L", as a result of technical noncompliances.

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2D
samp_date	3/6/2003
lab_id	B0370-02D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	225	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	16.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2510		
CHROMIUM	1.6		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	186		
LEAD	4.0	U	
MAGNESIUM	2250		
MANGANESE	1.7	B	A
MERCURY	0.14	UL	E
NICKEL	0.80	U	
POTASSIUM	1210	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	10500		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	B0370-03D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	232	B	A
ANTIMONY	6.6	B	A
ARSENIC	3.0	U	
BARIUM	11.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	1580		
CHROMIUM	0.60	U	
COBALT	0.90	U	
COPPER	6.2	B	A
IRON	138	B	A
LEAD	4.0	U	
MAGNESIUM	2750		
MANGANESE	17.7		
MERCURY	0.14	UL	E
NICKEL	0.89	B	A
POTASSIUM	1020	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	2950		
THALLIUM	3.0	U	
VANADIUM	0.86	B	A
ZINC	7.0	U	

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	B0370-04D
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	57.1	B	A
ANTIMONY	3.7	B	A
ARSENIC	3.0	U	
BARIUM	16.4		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4790		
CHROMIUM	0.60	U	
COBALT	0.90	U	
COPPER	4.0	U	
IRON	72.6	B	A
LEAD	4.0	U	
MAGNESIUM	6850		
MANGANESE	34.8		
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1440		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3720		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2DF	nsample	FTAMW-2SF	nsample	FTAMW-57SF
samp_date	3/6/2003	samp_date	3/6/2003	samp_date	3/6/2003
lab_id	B0370-05A	lab_id	B0370-06A	lab_id	B0370-07A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	23.6	B	A
ANTIMONY	4.4	B	A
ARSENIC	3.0	U	
BARIUM	15.1		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2490		
CHROMIUM	1.3		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	29.3	B	A
LEAD	4.0	U	
MAGNESIUM	2260		
MANGANESE	3.2	B	A
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	1200	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	10400		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	52.9	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	8.4		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	1570		
CHROMIUM	0.60	U	
COBALT	0.91	B	A
COPPER	4.0	U	
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	2730		
MANGANESE	16.6		
MERCURY	0.13	UL	E
NICKEL	0.80	U	
POTASSIUM	989	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	2940		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	B	A
ARSENIC	3.0	U	
BARIUM	12.3		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4760		
CHROMIUM	1.7		
COBALT	0.90	U	
COPPER	4.0	U	
IRON	80.6	B	A
LEAD	4.0	U	
MAGNESIUM	6880		
MANGANESE	36.0		
MERCURY	0.14	UL	E
NICKEL	0.80	U	
POTASSIUM	1380		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3630		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	7.0	U	

PROJ_NO: 4740

SDG: B0370 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-2D
samp_date	3/6/2003
lab_id	203185-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	13		
NITRATE	MG/L	0.77	L	H
NITRITE	MG/L	0.10	UL	H
SULFATE	MG/L	3.2		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-2S
samp_date	3/6/2003
lab_id	203185-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.2		
NITRATE	MG/L	0.64	L	H
NITRITE	MG/L	0.10	UL	H
SULFATE	MG/L	5.8		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-57S
samp_date	3/6/2003
lab_id	203185-003
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.4		
NITRATE	MG/L	0.40	L	H
NITRITE	MG/L	0.10	UL	H
SULFATE	MG/L	16		
TOTAL ORGANIC CARBON	MG/L	6	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2D

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix (soil/water): WATER Lab Sample ID: B0370-02D

Level (low/med): MED Date Received: 03/07/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	225			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2510			P
7440-47-3	Chromium	1.6	B	*per 5/27/03	P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	186	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2250			P
7439-96-5	Manganese	1.7	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1210			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	10500			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTAMW-2S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix (soil/water): WATER Lab Sample ID: B0370-03D

Level (low/med): MED Date Received: 03/07/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	232			P
7440-36-0	Antimony	6.6	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	11.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1580			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	6.2	B		P
7439-89-6	Iron	138	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2750			P
7439-96-5	Manganese	17.7	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.89	B		P
7440-09-7	Potassium	1020			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	2950			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.86	B		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix (soil/water): WATER_ Lab Sample ID: B0370-04D_____

Level (low/med): MED Date Received: 03/07/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	57.1	B		P
7440-36-0	Antimony	3.7	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4790			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	72.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6850			P
7439-96-5	Manganese	34.8	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1440			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3720			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

_____

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_____

U.S. EPA - CLP

I

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-25F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370

Matrix (soil/water): WATER Lab Sample ID: B0370-05A

Level (low/med): MED Date Received: 03/07/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	23.6	B		P
7440-36-0	Antimony	4.4	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	15.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2490			P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	29.3	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2260			P
7439-96-5	Manganese	3.2	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1200			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	10400			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-2SF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370

Matrix (soil/water): WATER Lab Sample ID: B0370-06A

Level (low/med): MED Date Received: 03/07/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	52.9	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	8.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1570			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	0.91	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2730			P
7439-96-5	Manganese	16.6	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	989	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	2940			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-57S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix (soil/water): WATER Lab Sample ID: B0370-07A

Level (low/med): MED Date Received: 03/07/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	12.3	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4760			P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	80.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6880			P
7439-96-5	Manganese	36.0	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3630			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

Mitkem Corporation

Date: *01-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-2D
Lab ID: B0370-02

Project: Wallops Island
Collection Date: 03/06/03 9:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *01-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-2S
Lab ID: B0370-03

Project: Wallops Island
Collection Date: 03/06/03 12:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *01-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-57S
Lab ID: B0370-04

Project: Wallops Island
Collection Date: 03/06/03 15:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203185

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0370-02C
Date Sampled.....: 03/06/2003
Time Sampled.....: 09:15
Sample Matrix.....: Water

Laboratory Sample ID: 203185-1
Date Received.....: 03/08/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	13			0.15	1.0	1	mg/L	15142		03/09/03 2328	ddm
	Nitrate as N (NO3-N)	0.77			0.002	0.10	1	mg/L	15142		03/09/03 2328	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15142		03/09/03 2328	ddm
	Sulfate	3.2			0.012	1.0	1	mg/L	15142		03/09/03 2328	ddm

* In Description = Dry Wgt.

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LABORATORY TEST RESULTS

Job Number: 203185

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0370-03C
Date Sampled.....: 03/06/2003
Time Sampled.....: 12:55
Sample Matrix.....: Water

Laboratory Sample ID: 203185-2
Date Received.....: 03/08/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.2			0.15	1.0	1	mg/L	15142		03/10/03 0022	ddm
	Nitrate as N (NO3-N)	0.64			0.002	0.10	1	mg/L	15142		03/10/03 0022	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15142		03/10/03 0022	ddm
	Sulfate	5.8			0.012	1.0	1	mg/L	15142		03/10/03 0022	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203185

Date:03/17/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0370-04C
Date Sampled.....: 03/06/2003
Time Sampled.....: 12:55
Sample Matrix.....: Water

Laboratory Sample ID: 203185-3
Date Received.....: 03/08/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.4			0.15	1.0	1	mg/L	15142		03/10/03 0102	ddm
	Nitrate as N (NO3-N)	0.40			0.002	0.10	1	mg/L	15142		03/10/03 0102	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15142		03/10/03 0102	ddm
	Sulfate	16			0.012	1.0	1	mg/L	15142		03/10/03 0102	ddm

* In Description = Dry Wgt.

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APPENDIX C
SUPPORT DOCUMENTATION

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO

COMPANY: Tetra Tech NUS
PHONE: 610 491 9686
FAX: 610 491 9645
NAME: Garth Glenn
ADDRESS: 600 Clark Avenue Suite 3
CITY/ST/ZIP: King of Prussia, PA 19406

INVOICE TO

COMPANY: Tetra Tech NUS
PHONE:
FAX:
NAME:
ADDRESS: Foster Plaza III 661 Anderson Drive
CITY/ST/ZIP: Pittsburgh, PA

LAB PROJECT #: B0370
TURNAROUND TIME:

CLIENT PROJECT NAME: NASA WFF
CLIENT PROJECT #: CTO 848
CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl 1,2,4 TMB, 1,3,5 TMB	TCL VOC 1 Liter Amber Glass MTBE	TCL SVOC 1 Liter Amber Glass	TCL PCB 40 ml VOA Vial HCl	TOC 500 ml Poly HNO3	TAL Metals 500 ml Poly Unpreserved Sulfuric Nitric	500 ml Poly Unpreserved Dissolved Metals	COMMENTS
TB-030603	3/6/03 0740		X	X			01		2							
FTAMW-2D	3/6/03 0915		X	X			02		6	3	3	2	3	3		
FTA MW-2S	3/6/03 1255		X	X			03		2	1	1	2	1	1		
FTA MW-57S	3/6/03 1530		X	X			04		2	1	1	2	1	1		
FTA MW-2DF	3/6/03 0915		X	X			05								3	
FTA MW-2SF	3/6/03 1255		X	X			06								1	
FTA MW-57S	3/6/03 1530		X	X			07								1	
	/															
	/															
	/															
	/															
	/															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
6000	Charles Meyer	3/6/03 1700	Nathan Small	3-7-03 0900
		/		/
		/		/

ADDITIONAL REMARKS:
Blank water provided by the lab
Shipped via Federal Express
Airbill NO 8286 8464 5245

COOLER TEMP: 4C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

Sample Condition Form

Page 1 of 1

Received By: NV	Reviewed By: JD	Date: 3-7-03	MITKEM Project: B0370
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed (YES) NO*

*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody (Present) / Absent

4)Airbill(s) (Present) / Absent

Airbill Number(s) FED-EX 828684645245

5)Cooler Temperature 4°C

Coolant Condition ICE

6)Sample Bottles (Intact)/Broken/Leaking

7)Date Received 3-7-03

8)Time Received 0900

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B037001					H
02	<2				H
03	<2				H
04	<2				H
05	<2				
06	<2				
B0370 07	<2				

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes / no

Rad OK yes / no

Comments / r/ Remarks

FORM ID 30.QUAPPSAMPLECOND.FORM

0010

rpjsckl	Job Sample Receipt Checklist Report	V2

Job Number.: 203185 Location.: 57207 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: Date of the Report..: 03/08/2003
Project Number.: 20000646 Project Description.: Nitrate/Sulfate Project Manager.....: jld
Customer.....: MITKEM Contact.: Paul Senecal

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?	Y	
...If "yes", completed properly?	Y	
Custody seal on shipping container?	Y	
...If "yes", custody seal intact?	Y	
Custody seals on sample containers?	N	
...If "yes", custody seal intact?		
Samples iced?	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	08C
Samples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		
Correct containers used?	Y	
Adequate sample volume provided?	Y	
Samples preserved correctly?		
Samples received within holding-time?	Y	
Agreement between COC and sample labels?	Y	
Radioactivity at or below background levels?	Y	
A Sample Discrepancy Report (SDR) was needed?	N	
Comments		
If samples were shipped was there an air bill #?.	Y	FE 7907 1683 1691
Sample Custodian Signature/Date	Y	03/07/03

B0370

HOLDING TIME

05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	CL	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	CL	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	CL	03/06/03	/ /	03/10/03	0	0	4
UG/L	FTAMW-2D	B0370-02D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2DDUP	B0370-02DDUP	DUPLICATE	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
%	FTAMW-2DMS	B0370-02DMS	MS	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2S	B0370-03D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-57S	B0370-04D	NORMAL	B0370	HG	03/06/03	03/08/03	03/10/03	2	2	4
%	LCSW	0308LCSW	LCS	B0370	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	PBW	0308PBW	M_BLANK	B0370	HG	/ /	03/08/03	03/10/03	0	2	0
UG/L	FTAMW-2DF	B0370-05A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2SF	B0370-06A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-57SF	B0370-07A	NORMAL	B0370	HGF	03/06/03	03/08/03	03/10/03	2	2	4
UG/L	FTAMW-2D	B0370-02D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2DDUP	B0370-02DDUP	DUPLICATE	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2DL	B0370-02DL	NORMAL	B0370	M	03/06/03	03/09/03	03/09/03	3	0	3
%	FTAMW-2DMS	B0370-02DMS	MS	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2S	B0370-03D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-57S	B0370-04D	NORMAL	B0370	M	03/06/03	03/08/03	03/09/03	2	1	3
%	LCSW	0308LCSW	LCS	B0370	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	PBW	0308PBW	M_BLANK	B0370	M	/ /	03/08/03	03/09/03	0	1	0
UG/L	FTAMW-2DF	B0370-05A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-2SF	B0370-06A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3
UG/L	FTAMW-57SF	B0370-07A	NORMAL	B0370	MF	03/06/03	03/08/03	03/09/03	2	1	3

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	NTA	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	NTA	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	NTA	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	NTI	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	NTI	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	NTI	03/06/03	/ /	03/10/03	0	0	4
UG/L	FTAMW-2D	B0370-02E	MS	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DMS	B0370-02EMS	MS	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DMSD	B0370-02EMSD	MSD	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-2DRE	B0370-02ERE	NORMAL	B0370	OS	03/06/03	03/11/03	03/31/03	5	20	25
%	FTAMW-2S	B0370-03E	NORMAL	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-57S	B0370-04E	NORMAL	B0370	OS	03/06/03	03/11/03	03/21/03	5	10	15
%	FTAMW-57SRE	B0370-04ERE	NORMAL	B0370	OS	03/06/03	03/11/03	03/31/03	5	20	25
%	SBLK1C	MB-6033	M_BLANK	B0370	OS	/ /	03/11/03	03/31/03	0	20	0
%	SBLK1CLCS	LCS-6033	LCS	B0370	OS	/ /	03/11/03	03/21/03	0	10	0
%	SBLK2M	MB-6033A	M_BLANK	B0370	OS	/ /	03/11/03	03/31/03	0	20	0
%	FTAMW-2D	B0370-02A	NORMAL	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	FTAMW-2DMS	B0370-02AMS	MS	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	FTAMW-2DMSD	B0370-02AMSD	MSD	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
UG/L	FTAMW-2S	B0370-03A	NORMAL	B0370	OV	03/06/03	03/18/03	03/18/03	12	0	12
%	FTAMW-57S	B0370-04A	NORMAL	B0370	OV	03/06/03	03/21/03	03/21/03	15	0	15
%	TB-030603	B0370-01A	NORMAL	B0370	OV	03/06/03	03/17/03	03/17/03	11	0	11
%	VBLK1I	V1B0321A	M_BLANK	B0370	OV	/ /	03/21/03	03/21/03	0	0	0
%	VBLK1ILCS	V1L0321A	LCS	B0370	OV	/ /	03/21/03	03/21/03	0	0	0
%	VBLK2P	V2B0317A	M_BLANK	B0370	OV	/ /	03/17/03	03/17/03	0	0	0
%	VBLK2PLCS	V2L0317A	LCS	B0370	OV	/ /	03/17/03	03/17/03	0	0	0
%	BBLK1A	MB-6030	M_BLANK	B0370	PCB	/ /	03/11/03	03/14/03	0	3	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	BBLK1ALCS	LCS-6031	LCS	B0370	PCB	/ /	03/11/03	03/14/03	0	3	0
%	FTAMW-2D	B0370-02EMSD	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
%	FTAMW-2S	B0370-03E	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
%	FTAMW-57S	B0370-04E	NORMAL	B0370	PCB	03/06/03	03/11/03	03/14/03	5	3	8
MG/L	FTAMW-2D	203185-001	NORMAL	B0370	SO4	03/06/03	/ /	03/09/03	0	0	3
MG/L	FTAMW-2S	203185-002	NORMAL	B0370	SO4	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-57S	203185-003	NORMAL	B0370	SO4	03/06/03	/ /	03/10/03	0	0	4
MG/L	FTAMW-2D	B0370-02B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-2DDUP	B0370-02BDUP	DUPLICATE	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-2S	B0370-03B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
MG/L	FTAMW-57S	B0370-04B	NORMAL	B0370	TOC	03/06/03	03/18/03	03/18/03	12	0	12
%	LCS-6204	LCS-6204	LCS	B0370	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB-6204	MB-6204	M_BLANK	B0370	TOC	/ /	03/18/03	03/18/03	0	0	0

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 5, 2003, and received at Mitkem on March 6, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-2D. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-2D. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this

SEVERN TRENT STL

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STL Report : 203185
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Samples received at STL on Saturday March 8, 2003 without notification. Analysis was done as soon as possible. One sample arrive out of hold already for nitrate and nitrite.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Ion Chromatography Analysis – Chloride, Nitrate, Nitrite, Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A Cascuna for

Jeffrey C. Curran
Laboratory Manager

March 17, 2003
Date

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
FTAMW-2D	B0370-02D
FTAMW-2DD	B0370-02DD
FTAMW-2DS	B0370-02DS
FTAMW-25F	B0370-05A
FTAMW-2S	B0370-03D
FTAMW-2SF	B0370-06A
FTAMW-57S	B0370-04D
FTAMW-57S	B0370-07A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Regina A. Conant

Date: 3/2/93 Title: Chemist

SAMPLE INFORMATION
Date: 03/17/2003

Job Number.: 203185
Customer...: MITKEM
Attn.....: Paul Senecal

Project Number.....: 20000646
Customer Project ID....: NITRATE SULFATE
Project Description....: Nitrate/Sulfate

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
203185-1	B0370-02C	Water	03/06/2003	09:15	03/08/2003	10:45
203185-2	B0370-03C	Water	03/06/2003	12:55	03/08/2003	10:45
203185-3	B0370-04C	Water	03/06/2003	12:55	03/08/2003	10:45

LABORATORY CHRONICLE

Job Number: 203185

Date: 03/17/2003

CUSTOMER: NITREX | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Lab ID: 203185-1 Client ID: B0370-02C
Date Recvd: 03/08/2003 Sample Date: 03/06/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15142		03/09/2003 2328	

Lab ID: 203185-2 Client ID: B0370-03C
Date Recvd: 03/08/2003 Sample Date: 03/06/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15142		03/10/2003 0022	

Lab ID: 203185-3 Client ID: B0370-04C
Date Recvd: 03/08/2003 Sample Date: 03/06/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15142		03/10/2003 0102	

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370__

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	10201.54	102.0	10000.0	10317.05	103.2	10332.60	103.3	P
Antimony	500.0	531.58	106.3	500.0	538.27	107.7	540.16	108.0	P
Arsenic	500.0	522.05	104.4	500.0	525.44	105.1	528.25	105.6	P
Barium	10000.0	10525.51	105.3	10000.0	10606.02	106.1	10577.46	105.8	P
Beryllium	250.0	250.90	100.4	250.0	253.14	101.3	251.80	100.7	P
Cadmium	250.0	258.28	103.3	250.0	261.49	104.6	260.78	104.3	P
Calcium	25000.0	25048.30	100.2	25000.0	25220.36	100.9	25320.98	101.3	P
Chromium	1000.0	1020.75	102.1	1000.0	1033.52	103.4	1031.59	103.2	P
Cobalt	2500.0	2595.20	103.8	2500.0	2647.49	105.9	2638.12	105.5	P
Copper	1250.0	1291.76	103.3	1250.0	1307.68	104.6	1296.12	103.7	P
Iron	5000.0	5129.06	102.6	5000.0	5163.18	103.3	5170.92	103.4	P
Lead	500.0	513.75	102.8	500.0	515.38	103.1	518.11	103.6	P
Magnesium	25000.0	25620.98	102.5	25000.0	25871.33	103.5	25886.56	103.5	P
Manganese	2500.0	2558.88	102.4	2500.0	2563.73	102.5	2554.46	102.2	P
Mercury	5.0	4.86	97.2	5.0	4.91	98.2	4.95	99.0	CV
Nickel	2500.0	2591.44	103.7	2500.0	2602.63	104.1	2599.56	104.0	P
Potassium	25000.0	25238.09	101.0	25000.0	24437.95	97.8	24758.27	99.0	P
Selenium	500.0	522.68	104.5	500.0	525.57	105.1	531.89	106.4	P
Silver	1250.0	1210.22	96.8	1250.0	1229.37	98.3	1226.45	98.1	P
Sodium	25000.0	24255.69	97.0	25000.0	23752.37	95.0	23747.48	95.0	P
Thallium	500.0	522.52	104.5	500.0	527.10	105.4	528.19	105.6	P
Vanadium	2500.0	2571.39	102.9	2500.0	2597.57	103.9	2585.99	103.4	P
Zinc	2500.0	2586.04	103.4	2500.0	2611.44	104.5	2617.10	104.7	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Initial Calibration Source: _____

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	10280.91	102.8	10366.57	103.7	P
Antimony				500.0	533.45	106.7	541.16	108.2	P
Arsenic				500.0	523.00	104.6	526.25	105.2	P
Barium				10000.0	10593.01	105.9	10607.78	106.1	P
Beryllium				250.0	252.58	101.0	253.43	101.4	P
Cadmium				250.0	260.74	104.3	263.10	105.2	P
Calcium				25000.0	25040.13	100.2	25361.55	101.4	P
Chromium				1000.0	1031.59	103.2	1038.90	103.9	P
Cobalt				2500.0	2635.77	105.4	2671.59	106.9	P
Copper				1250.0	1299.48	104.0	1309.76	104.8	P
Iron				5000.0	5147.48	102.9	5186.00	103.7	P
Lead				500.0	512.58	102.5	516.57	103.3	P
Magnesium				25000.0	25807.68	103.2	25959.35	103.8	P
Manganese				2500.0	2560.84	102.4	2551.12	102.0	P
Mercury				5.0	4.96	99.2			CV
Nickel				2500.0	2589.99	103.6	2598.87	104.0	P
Potassium				25000.0	24519.91	98.1	24636.54	98.5	P
Selenium				500.0	524.52	104.9	533.94	106.8	P
Silver				1250.0	1228.48	98.3	1241.22	99.3	P
Sodium				25000.0	23669.72	94.7	23413.62	93.7	P
Thallium				500.0	522.36	104.5	529.76	106.0	P
Vanadium				2500.0	2592.91	103.7	2599.68	104.0	P
Zinc				2500.0	2607.68	104.3	2635.61	105.4	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370__

Initial Calibration Source: _____

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	10269.97	102.7			P
Antimony				500.0	540.90	108.2			P
Arsenic				500.0	520.71	104.1			P
Barium				10000.0	10501.42	105.0			P
Beryllium				250.0	251.65	100.7			P
Cadmium				250.0	259.83	103.9			P
Calcium				25000.0	25476.45	101.9			P
Chromium				1000.0	1027.82	102.8			P
Cobalt				2500.0	2657.82	106.3			P
Copper				1250.0	1299.54	104.0			P
Iron				5000.0	5142.88	102.9			P
Lead				500.0	510.84	102.2			P
Magnesium				25000.0	25801.58	103.2			P
Manganese				2500.0	2513.58	100.5			P
Mercury									
Nickel				2500.0	2553.23	102.1			P
Potassium									
Selenium				500.0	530.32	106.1			P
Silver				1250.0	1233.76	98.7			P
Sodium									
Thallium				500.0	524.51	104.9			P
Vanadium				2500.0	2577.82	103.1			P
Zinc				2500.0	2605.71	104.2			P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0370___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	20.3	B	17.0	U	31.2	B	17.0	U	48.683	B	P
Antimony	3.3	B	3.0	U	4.1	B	3.0	U	4.381	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Beryllium	0.6	B	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.6	U	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	1.4	B	0.9	U	0.9	U	0.9	U	0.916	B	P
Copper	4.0	U	4.0	U	4.0	U	4.0	U	8.060	B	P
Iron	26.0	U	26.0	U	26.0	U	26.0	U	30.678	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	21.8	B	8.0	U	31.9	B	8.0	U	51.105	B	P
Manganese	1.1	B	0.8	U	0.8	U	0.8	U	1.118	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	1.2	B	0.8	U	0.8	U	0.8	U	0.800	U	P
Potassium	267.9	B	78.0	U	78.0	U	78.0	U	135.477	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	91.4	B	83.0	U	83.0	U	83.0	U	83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.000	U	P
Cyanide											

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0370

Preparation Blank Matrix (soil/water): ____

Preparation Blank Concentration Units (ug/L or mg/kg): ____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	36.6	B					P
Antimony			3.0	U	3.0	U					P
Arsenic			3.0	U	3.0	U					P
Barium			4.0	U	4.2	B					P
Beryllium			0.5	U	0.5	U					P
Cadmium			0.7	U	0.7	U					P
Calcium			240.0	U	240.0	U					P
Chromium			0.6	U	0.6	U					P
Cobalt			1.0	B	1.2	B					P
Copper			4.0	U	4.0	U					P
Iron			26.0	U	28.1	B					P
Lead			4.0	U	4.0	U					P
Magnesium			31.7	B	51.5	B					P
Manganese			2.4	B	2.1	B					P
Mercury											
Nickel			0.8	U	1.2	B					P
Potassium			78.0	U							P
Selenium			9.0	U	9.0	U					P
Silver			2.0	U	2.0	U					P
Sodium			83.0	U							P
Thallium			3.0	U	3.0	U					P
Vanadium			0.7	B	0.9	B					P
Zinc			7.0	U	7.0	U					P
Cyanide											

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0370

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum								
Antimony								
Arsenic								
Barium								
Beryllium								
Cadmium								
Calcium								
Chromium								
Cobalt								
Copper								
Iron								
Lead								
Magnesium								
Manganese								
Mercury								
Nickel								
Potassium		25000		26036.8	104.1		25604.7	102.4
Selenium								
Silver								
Sodium		25000		25128.7	100.5		24576.0	98.3
Thallium								
Vanadium								
Zinc								

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

ICP ID Number: OPTIMA_2A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	495148	490166.6	98.0	495532	489765.9	98.0
Antimony		600		634.4	105.7		621.1	103.5
Arsenic		100		112.7	112.7		110.3	110.3
Barium		500		505.6	101.1		498.1	99.6
Beryllium		500		496.9	99.4		495.4	99.1
Cadmium		1000		936.4	93.6		939.4	93.9
Calcium	500000	500000	515452	511427.0	102.3	517436	511839.6	102.4
Chromium		500		488.3	97.7		489.8	98.0
Cobalt		500		463.5	92.7		461.5	92.3
Copper		500		524.9	105.0		521.4	104.3
Iron	200000	200000	185597	184168.2	92.1	185420	183730.4	91.9
Lead		500		476.2	95.2		465.2	93.0
Magnesium	500000	500000	491303	486552.8	97.3	490510	485403.3	97.1
Manganese		500		484.6	96.9		480.9	96.2
Mercury								
Nickel		1000		910.3	91.0		905.5	90.6
Potassium								
Selenium		500		516.5	103.3		510.2	102.0
Silver		200		197.1	98.6		198.7	99.4
Sodium								
Thallium		100		82.3	82.3		96.0	96.0
Vanadium		500		495.0	99.0		493.9	98.8
Zinc		1000		934.5	93.4		948.8	94.9

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

FTAMW-2DS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370__

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	8886.7035		225.3345		9100.00	95.2		P
Antimony	75-125	458.6900		3.0000	U	455.00	100.8		P
Arsenic	75-125	420.8655		3.0000	U	455.00	92.5		P
Barium	75-125	8955.5710		16.7255	B	9100.00	98.2		P
Beryllium	75-125	213.9340		0.5000	U	227.00	94.2		P
Cadmium	75-125	211.4320		0.7000	U	227.00	93.1		P
Calcium									NR
Chromium	75-125	868.4965		1.5860	B	910.00	95.3		P
Cobalt	75-125	2228.7730		0.9000	U	2270.00	98.2		P
Copper	75-125	1094.6685		4.0000	U	1130.00	96.9		P
Iron	80-120	4494.7550		186.0355	B	4550.00	94.7		P
Lead	75-125	415.6845		4.0000	U	455.00	91.4		P
Magnesium									NR
Manganese	75-125	2158.5405		1.7060	B	2270.00	95.0		P
Mercury	75-125	4.4881		0.1370	U	4.55	98.6		CV
Nickel	75-125	2161.9885		0.8000	U	2200.00	98.3		P
Potassium									NR
Selenium	75-125	418.8930		9.0000	U	455.00	92.1		P
Silver	75-125	1076.7690		2.0000	U	1130.00	95.3		P
Sodium									NR
Thallium	75-125	421.6600		3.0000	U	420.00	100.4		P
Vanadium	75-125	2152.8070		0.7000	U	2270.00	94.8		P
Zinc	75-125	2204.9520		7.0000	U	2270.00	97.1		P
Cyanide									NR

Comments:

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DUPLICATES

EPA SAMPLE NO.

FTAMW-2DD

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	225.3345		219.0530		2.8		P
Antimony		3.0000	U	3.0000	U			P
Arsenic		3.0000	U	3.0000	U			P
Barium		16.7255	B	15.9525	B	4.7		P
Beryllium		0.5000	U	0.5000	U			P
Cadmium		0.7000	U	0.7000	U			P
Calcium	800.0	2509.7340		2587.5155		3.1		P
Chromium		1.5860	B	1.2465	B	24.0		P
Cobalt		0.9000	U	0.9000	U			P
Copper		4.0000	U	4.0000	U			P
Iron		186.0355	B	188.8315	B	1.5		P
Lead		4.0000	U	4.0000	U			P
Magnesium	500.0	2251.9640		2279.6440		1.2		P
Manganese		1.7060	B	1.7625	B	3.3		P
Mercury		0.1370	U	0.1300	U			CV
Nickel		0.8000	U	0.8000	U			P
Potassium	1000.0	1209.6134		1199.6774		0.8		P
Selenium		9.0000	U	9.0000	U			P
Silver		2.0000	U	2.0000	U			P
Sodium		10471.7634		10726.5626		2.4		P
Thallium		3.0000	U	3.0000	U			P
Vanadium		0.7000	U	0.7000	U			P
Zinc		7.0000	U	7.0000	U			P
Cyanide								NR

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LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Solid LCS Source:

Aqueous LCS Source: HIGH_PURITY_#802115

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	9100.0	9118.6	100.2						
Antimony	455.0	483.5	106.3						
Arsenic	455.0	450.7	99.1						
Barium	9100.0	9284.5	102.0						
Beryllium	227.0	227.3	100.1						
Cadmium	227.0	225.7	99.4						
Calcium	22700.0	22263.5	98.1						
Chromium	910.0	907.3	99.7						
Cobalt	2270.0	2328.3	102.6						
Copper	1130.0	1141.0	101.0						
Iron	4550.0	4573.2	100.5						
Lead	455.0	448.4	98.5						
Magnesium	22700.0	23070.0	101.6						
Manganese	2270.0	2284.0	100.6						
Mercury	4.6	3.4	73.9						
Nickel	2270.0	2264.8	99.8						
Potassium	22700.0	21955.4	96.7						
Selenium	455.0	451.8	99.3						
Silver	1130.0	1115.4	98.7						
Sodium	22700.0	21822.2	96.1						
Thallium	455.0	455.6	100.1						
Vanadium	2270.0	2281.4	100.5						
Zinc	2270.0	2299.2	101.3						
Cyanide									

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ICP SERIAL DILUTIONS

EPA SAMPLE NO.

FTAMW-2DL

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370___

Matrix (soil/water): WATER_ Level (low/med): MED___

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	225.33		226.54	B	0.5		P
Antimony	3.00	U	15.00	U			P
Arsenic	3.00	U	15.00	U			P
Barium	16.73	B	21.93	B	31.1		P
Beryllium	0.50	U	2.50	U			P
Cadmium	0.70	U	3.50	U			P
Calcium	2509.73		1830.26	B	27.1		P
Chromium	1.59	B	3.00	U	100.0		P
Cobalt	0.90	U	4.50	U			P
Copper	4.00	U	20.00	U			P
Iron	186.04	B	200.01	B	7.5		P
Lead	4.00	U	20.00	U			P
Magnesium	2251.96		2438.10	B	8.3		P
Manganese	1.71	B	4.54	B	165.5		P
Mercury							NR
Nickel	0.80	U	4.00	U			P
Potassium	1209.61		1357.57	B	12.2		P
Selenium	9.00	U	45.00	U			P
Silver	2.00	U	10.00	U			P
Sodium	10471.76		10706.81		2.2		P
Thallium	3.00	U	15.00	U			P
Vanadium	0.70	U	3.50	U			P
Zinc	7.00	U	35.00	U			P

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: ___ SAS No.: _____ SDG No.: B0370___

ICP ID Number: OPTIMA_1A___ Date: 02/01/03___

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370____

Method: P___

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTAMW-2D	03/08/03		50
FTAMW-2DD	03/08/03		50
FTAMW-2DS	03/08/03		50
FTAMW-25F	03/08/03		50
FTAMW-2S	03/08/03		50
FTAMW-2SF	03/08/03		50
FTAMW-57S	03/08/03		50
FTAMW-57S	03/08/03		50
LCSW	03/08/03		50
PBW	03/08/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM_ Case No.: _____ SAS No.: _____ SDG No.: B0370_____

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTAMW-2D	03/08/03		137
FTAMW-2DD	03/08/03		130
FTAMW-2DS	03/08/03		130
FTAMW-25F	03/08/03		126
FTAMW-2S	03/08/03		135
FTAMW-2SF	03/08/03		128
FTAMW-57S	03/08/03		130
FTAMW-57S	03/08/03		137
LCSW	03/08/03		100
PBW	03/08/03		100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370__

Instrument ID Number: OPTIMA_2A_____ Method: P__

Start Date: 03/09/03___ End Date: 03/09/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1015		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1020		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1024		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1028		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1032																												
ZZZZZZ	1.00	1036																												
ZZZZZZ	1.00	1038																												
ZZZZZZ	1.00	1042																												
ZZZZZZ	1.00	1046																												
ICV	1.00	1051		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1055		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1100		X						X				X		X														
ICSAB	1.00	1102		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1105		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1109		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1113																												
ZZZZZZ	1.00	1117																												
ZZZZZZ	1.00	1121																												
ZZZZZZ	1.00	1125																												
ZZZZZZ	1.00	1129																												
ZZZZZZ	1.00	1133																												
CCV	1.00	1137		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1142		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1146																												
ZZZZZZ	1.00	1150																												
FTAMW-2D	1.00	1154		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
FTAMW-2DD	1.00	1158		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
FTAMW-2DS	1.00	1202		X	X	X	X	X	X		X	X	X	X	X		X			X		X	X		X	X	X	
FTAMW-2DL	1.00	1206		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1210																												
ZZZZZZ	1.00	1213																												
CCV	1.00	1215		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0370__

Instrument ID Number: OPTIMA_2A Method: P___

Start Date: 03/09/03___ End Date: 03/09/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCB	1.00	1219		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1223																									
FTAMW-2S	1.00	1227		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
FTAMW-57S	1.00	1231		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
FTAMW-25F	1.00	1236		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
FTAMW-2SF	1.00	1240		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
FTAMW-57S	1.00	1244		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1248																									
ZZZZZZ	1.00	1252																									
CCV	1.00	1256		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCB	1.00	1300		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
ZZZZZZ	1.00	1304																									
ZZZZZZ	1.00	1308																									
ZZZZZZ	1.00	1312																									
ZZZZZZ	1.00	1316																									
ZZZZZZ	1.00	1320																									
ZZZZZZ	1.00	1324																									
ICSA	1.00	1328		X						X				X		X											
ICSAB	1.00	1331		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCV	1.00	1334		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	
CCB	1.00	1337		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: ... SAS No.: _____ SDG No.: B0370___

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 03/09/03___ End Date: 03/09/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1427																									
ZZZZZZ	1.00	1431																									
ZZZZZZ	1.00	1434																									
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1440								X				X		X											
ICSA	1.00	1443		X															X		X	X		X	X	X	
ICSAB	1.00	1445		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X										
CCV	1.00	1448		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	
CCB	1.00	1452		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0370__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/10/03 End Date: 03/10/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1138																				X				
S1	1.00	1140																				X				
S2	1.00	1142																				X				
S3	1.00	1145																								
ZZZZZZ	1.00	1147																								
ZZZZZZ	1.00	1149																				X				
ICV	1.00	1153																				X				
ICB	1.00	1156																								
ICSA	1.00	1158																				X				
ICSAB	1.00	1200																				X				
PBW	1.00	1203																				X				
LCSW	1.00	1205																								
ZZZZZZ	1.00	1207																								
ZZZZZZ	1.00	1209																								
ZZZZZZ	1.00	1212																								
ZZZZZZ	1.00	1214																								
ZZZZZZ	1.00	1216																								
ZZZZZZ	1.00	1219																				X				
CCV	1.00	1221																				X				
CCB	1.00	1223																								
ZZZZZZ	1.00	1226																								
ZZZZZZ	1.00	1228																				X				
FTAMW-2D	1.00	1230																				X				
FTAMW-2DD	1.00	1233																				X				
FTAMW-2DL	1.00	1235																								
ZZZZZZ	1.00	1237																								
ZZZZZZ	1.00	1240																				X				
CCV	1.00	1242																				X				
CCB	1.00	1244																				X				
FTAMW-2S	1.00	1246																				X				
FTAMW-57S	1.00	1249																				X				
FTAMW-25F	1.00	1251																								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/10/03 End Date: 03/10/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FTAMW-2SF	1.00	1253																				X				
FTAMW-57S	1.00	1256																				X				
ZZZZZZ	1.00	1258																								
ZZZZZZ	1.00	1300																				X				
CCV	1.00	1302																				X				
CCB	1.00	1305																								
ZZZZZZ	1.00	1307																								
ZZZZZZ	1.00	1309																								
ZZZZZZ	1.00	1312																								
ZZZZZZ	1.00	1314																								
ZZZZZZ	1.00	1316																								
ICSA	1.00	1319																				X				
ICSAB	1.00	1321																				X				
CCV	1.00	1323																				X				
CCB	1.00	1324																								

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ANALYSIS RUN LOG

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0370

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/10/03 End Date: 03/10/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1347																	X							
S1	1.00	1350																	X							
S2	1.00	1352																	X							
S3	1.00	1354																	X							
ZZZZZZ	1.00	1357																								
ZZZZZZ	1.00	1359																	X							
ICV	1.00	1401																	X							
ICB	1.00	1403																								
ICSA	1.00	1406																	X							
ICSAB	1.00	1408																	X							
PBW	1.00	1410																	X							
LCSW	1.00	1413																								
ZZZZZZ	1.00	1415																								
ZZZZZZ	1.00	1417																								
ZZZZZZ	1.00	1420																								
ZZZZZZ	1.00	1422																								
ZZZZZZ	1.00	1424																								
ZZZZZZ	1.00	1426																								
CCV	1.00	1429																	X							
CCB	1.00	1431																	X							
ZZZZZZ	1.00	1433																								
ZZZZZZ	1.00	1436																								
FTAMW-2D	1.00	1438																	X							
FTAMW-2DD	1.00	1440																	X							
FTAMW-2DL	1.00	1443																	X							
ZZZZZZ	1.00	1445																								
ZZZZZZ	1.00	1447																								
CCV	1.00	1450																	X							
CCB	1.00	1452																	X							
FTAMW-2S	1.00	1454																	X							
FTAMW-57S	1.00	1456																	X							
FTAMW-25F	1.00	1459																	X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/10/03___ End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FTAMW-2SF	1.00	1501																	X								
FTAMW-57S	1.00	1503																	X								
ZZZZZZ	1.00	1506																									
ZZZZZZ	1.00	1508																									
CCV	1.00	1510																	X								
CCB	1.00	1512																	X								
ZZZZZZ	1.00	1515																									
ZZZZZZ	1.00	1517																									
ZZZZZZ	1.00	1519																									
ZZZZZZ	1.00	1522																									
ZZZZZZ	1.00	1524																									
ICSA	1.00	1526																									
ICSAB	1.00	1529																	X								
CCV	1.00	1531																	X								
CCB	1.00	1532																	X								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0370__

Instrument ID Number: COMM_FIMS_____ Method: CV_

Start Date: 03/10/03___ End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1120																X									
S0.2	1.00	1122																X									
S1	1.00	1123																X									
S2	1.00	1124																X									
S5	1.00	1126																X									
S10	1.00	1127																X									
ICV	1.00	1128																X									
ICB	1.00	1130																X									
PBW	1.00	1131																X									
LCSW	1.00	1132																X									
ZZZZZZ	1.00	1134																									
ZZZZZZ	1.00	1135																									
ZZZZZZ	1.00	1136																									
ZZZZZZ	1.00	1138																									
ZZZZZZ	1.00	1139																									
ZZZZZZ	1.00	1140																									
CCV	1.00	1142																X									
CCB	1.00	1143																X									
ZZZZZZ	1.00	1144																									
ZZZZZZ	1.00	1146																									
FTAMW-2D	1.00	1147																X									
FTAMW-2DS	1.00	1148																X									
FTAMW-2DD	1.00	1150																X									
FTAMW-2S	1.00	1151																X									
FTAMW-57S	1.00	1152																X									
FTAMW-25F	1.00	1154																X									
CCV	1.00	1155																X									
CCB	1.00	1156																X									
FTAMW-2SF	1.00	1158																X									
FTAMW-57S	1.00	1159																X									
ZZZZZZ	1.00	1200																									
ZZZZZZ	1.00	1202																									

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION _____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0370__

Instrument ID Number: COMM_FIMS . _____ Method: CV_

Start Date: 03/10/03___ End Date: 03/10/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1203																									
ZZZZZZ	1.00	1204																									
ZZZZZZ	1.00	1206																									
ZZZZZZ	1.00	1207																									
CCV	1.00	1208																X									
CCB	1.00	1210																X									

FORM XIV - IN SW846

Mitkem Corporation

Date: *01-Apr-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0370
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID	MB-6204	SampType:	MBLK	TestCode:	E415.1_TOC_W	Prep Date:	3/18/03	Run ID:	TOC1_030318A
Client ID:	MB-6204	Batch ID:	6204	Units:	mg/L	Analysis Date:	3/18/03	SeqNo:	86851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID	LCS-6204	SampType:	LCS	TestCode:	E415.1_TOC_W	Prep Date:	3/18/03	Run ID:	TOC1_030318A
Client ID:	LCS-6204	Batch ID:	6204	Units:	mg/L	Analysis Date:	3/18/03	SeqNo:	86852

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	53	6.0	54.1	0	98	80	120	0	0		

Sample ID	B0370-02BDUP	SampType:	DUP	TestCode:	E415.1_TOC_W	Prep Date:	3/18/03	Run ID:	TOC1_030318A
Client ID:	FTAMW-2D	Batch ID:	6204	Units:	mg/L	Analysis Date:	3/18/03	SeqNo:	86865

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0	0	0	0	0	0	0	0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QUALITY CONTROL RESULTS

Job Number.: 203185 Report Date.: 03/17/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: CHL
Parameter.....: Chloride

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	50.00000		50.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	30.00000		30.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	10.00000		10.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	4.00000		4.00000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	1.00000		1.00000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.50000 B		0.50000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	24.69800		25.00000		99		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.14700 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	24.85500		25.00000		99	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.14700 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	23.89700		24.00000	0.14700 U	100		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	23.83800		24.00000	0.14700 U	99		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	10.13500		11.40000		89	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	9.82300		11.40000		86	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.14700 U							03/09/2003	2315
MD	203185-1		mg/L	12.63200			12.61000	0.2		20.0	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	37.58500		24.00000	12.61000	104		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	24.91600		25.00000		100	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.22000 B							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	24.77300		25.00000		99	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.14700 U							03/10/2003	0156

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	5.00000		5.00000					03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	3.00000		3.00000					03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	1.00000		1.00000					03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	0.40000		0.40000					03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	0.10000		0.10000					03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.05000 B		0.05000					03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	2.48500		2.50000		99		90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.00200 U							03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	2.49100		2.50000		100	%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.00200 U							03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	1.97100		2.00000	0.00200 U	99		75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	1.96800		2.00000	0.00200 U	98		75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	10.77200		9.71000		111	%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	8.73200		9.71000		90	%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.00200 U							03/09/2003	2315
MD	203185-1		mg/L	0.76800			0.77000	0.3		20.0	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	2.75600		2.00000	0.77000	99		75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	2.48100		2.50000		99	%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.00200 U							03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	2.48100		2.50000		99	%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.00200 U							03/10/2003	0156

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203185 Report Date.: 03/17/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	5.00000		5.00000						03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	3.00000		3.00000						03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	1.00000		1.00000						03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	0.40000		0.40000						03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	0.10000		0.10000						03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	0.05000 B		0.05000						03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	2.48200		2.50000		99			90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.00300 U								03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	2.48500		2.50000		99		%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.00300 U								03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	1.95100		2.00000	0.00300 U	98			75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	1.94600		2.00000	0.00300 U	97			75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	5.36900		5.00000		107		%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	4.87100		5.00000		97		%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.00300 U								03/09/2003	2315
MD	203185-1		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	1.88100		2.00000	0.00300 U	94			75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	2.48100		2.50000		99		%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.00300 U								03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	2.47400		2.50000		99		%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.00300 U								03/10/2003	0156

Test Method.....: 300.0 Batch.....: 15142 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15142-002	W03CWRK009	mg/L	100.00000		100.00000						03/09/2003	1954
STD	15142-003	W03CWRK010	mg/L	60.00000		60.00000						03/09/2003	2007
STD	15142-004	W03CWRK011	mg/L	20.00000		20.00000						03/09/2003	2020
STD	15142-005	W03CWRK012	mg/L	8.00000		8.00000						03/09/2003	2034
STD	15142-006	W03CWRK013	mg/L	2.00000		2.00000						03/09/2003	2047
STD	15142-007	W03CWRK014	mg/L	1.00000		1.00000						03/09/2003	2101
ICV	15142-009	W03AWRK035	mg/L	50.72000		50.00000		101			90-110	03/09/2003	2128
ICB	15142-010		mg/L	0.01200 U								03/09/2003	2141
CCV	15142-011	W03AWRK035	mg/L	50.68000		50.00000		101		%	90-110	03/09/2003	2154
CCB	15142-012		mg/L	0.01200 U								03/09/2003	2208
MS	15142-013	W03ASPK001	mg/L	19.02700		20.00000	0.01200 U	95			75-125	03/09/2003	2221
MS	15142-014	W03ASPK001	mg/L	18.95400		20.00000	0.01200 U	95			75-125	03/09/2003	2235
LCS	15142-015	W03ALCS004	mg/L	8.20500		9.21000		89		%	85-115	03/09/2003	2248
LCS	15142-016	W03ALCS004	mg/L	8.71200		9.21000		95		%	85-115	03/09/2003	2302
MB	15142-017		mg/L	0.01200 U								03/09/2003	2315
MD	203185-1		mg/L	3.17100			3.16600	0.0050			1.0000	03/09/2003	2342
MS	203185-1	W03ASPK001	mg/L	21.92100		20.00000	3.16600	94			75-125	03/09/2003	2355
CCV	15142-023	W03AWRK035	mg/L	50.56300		50.00000		101		%	90-110	03/10/2003	0036
CCB	15142-024		mg/L	0.01200 U								03/10/2003	0049
CCV	15142-028	W03AWRK035	mg/L	50.38500		50.00000		101		%	90-110	03/10/2003	0143
CCB	15142-029		mg/L	0.01200 U								03/10/2003	0156

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Batch #: 030309 runlog Calibration used: 03/09/2003 Instrument: Lachat 8000 IC

Reviewer: MAO Date: 3/17/03

Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/09/03	19:40:44	BLANK	030309.001	epa300a.met	1	dave	
03/09/03	19:54:04	STDW03CWRK009	030309.002	epa300a.met	1	dave	Calibration Std. 1
03/09/03	20:07:31	STDW03CWRK010	030309.003	epa300a.met	1	dave	Calibration Std. 2
03/09/03	20:20:58	STDW03CWRK011	030309.004	epa300a.met	1	dave	Calibration Std. 3
03/09/03	20:34:24	STDW03CWRK012	030309.005	epa300a.met	1	dave	Calibration Std. 4
03/09/03	20:47:49	STDW03CWRK013	030309.006	epa300a.met	1	dave	Calibration Std. 5
03/09/03	21:01:14	STDW03CWRK014	030309.007	epa300a.met	1	dave	Calibration Std. 6
03/09/03	21:14:40	BLANK STD	030309.008	epa300a.met	1	dave	Calibration Std. 7
03/09/03	21:28:06	ICVW03AWRK035	030309.009	epa300a.met	1	dave	
03/09/03	21:41:32	ICB	030309.010	epa300a.met	1	dave	
03/09/03	21:54:58	CCVW03AWRK035	030309.011	epa300a.met	1	dave	
03/09/03	22:08:23	CCB	030309.012	epa300a.met	1	dave	
03/09/03	22:21:49	MS W03ASPK001	030309.013	epa300a.met	1	dave	
03/09/03	22:35:15	MS W03ASPK001	030309.014	epa300a.met	1	dave	
03/09/03	22:48:39	LCSW03ALCS004	030309.015	epa300a.met	1	dave	
03/09/03	23:02:06	LCSW03ALCS004	030309.016	epa300a.met	5	dave	
03/09/03	23:15:33	MB	030309.017	epa300a.met	1	dave	
03/09/03	23:28:59	203185-1	030309.018	epa300a.met	1	dave	
03/09/03	23:42:25	203185-1 -MD	030309.019	epa300a.met	1	dave	
03/09/03	23:55:51	203185-1 -MS	030309.020	epa300a.met	1	dave	
03/10/03	00:09:15	203185-1 -MSD	030309.021	epa300a.met	1	dave	
03/10/03	00:22:41	208385-2	030309.022	epa300a.met	1	dave	
03/10/03	00:36:06	CCVW03AWRK035	030309.023	epa300a.met	1	dave	
03/10/03	00:49:32	CCB	030309.024	epa300a.met	1	dave	
03/10/03	01:02:56	203185-3	030309.025	epa300a.met	1	dave	
03/10/03	01:16:21	203186-1	030309.026	epa300a.met	1	dave	
03/10/03	01:29:46	203186-2	030309.027	epa300a.met	1	dave	
03/10/03	01:43:12	CCVW03AWRK035	030309.028	epa300a.met	1	dave	
03/10/03	01:56:36	CCB	030309.029	epa300a.met	1	dave	

Sample ID: CCB
Analyst:
Sample Wt:
Dilution:

Date Collected: 3/9/2003 12:18:34 PM
Sample Prep Volume:
Data Type: Original

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-3.2	0.0000	mg/L	0.00050	0.0000	mg/L	0.00050	>999.9%
Al 308.215	1328.9	0.0312	mg/L	0.00163	0.0312	mg/L	0.00163	5.22%
As 188.979	2.1	0.0012	mg/L	0.00190	0.0012	mg/L	0.00190	157.36%
Ba 233.527	117.8	0.0018	mg/L	0.00022	0.0018	mg/L	0.00022	12.73%
Be 313.107	644.6	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	15.96%
Co 228.616	17.2	0.0006	mg/L	0.00020	0.0006	mg/L	0.00020	35.80%
Cr 267.716	-59.1	-0.0002	mg/L	0.00002	-0.0002	mg/L	0.00002	8.13%
Cu 324.752	363.2	0.0010	mg/L	0.00037	0.0010	mg/L	0.00037	34.93%
Fe 273.955	448.2	0.0111	mg/L	0.00103	0.0111	mg/L	0.00103	9.28%
Mg 279.077	1230.5	0.0319	mg/L	0.00047	0.0319	mg/L	0.00047	1.47%
Mn 257.610	110.6	0.0003	mg/L	0.00003	0.0003	mg/L	0.00003	9.32%
Ni 231.604	25.5	0.0004	mg/L	0.00011	0.0004	mg/L	0.00011	26.15%
Pb 220.353	14.8	0.0008	mg/L	0.00013	0.0008	mg/L	0.00013	16.34%
Sb 206.836	8.6	0.0041	mg/L	0.00172	0.0041	mg/L	0.00172	41.72%
Se 196.026	1.3	0.0009	mg/L	0.00063	0.0009	mg/L	0.00063	73.07%
Tl 190.801	-1.0	-0.0005	mg/L	0.00076	-0.0005	mg/L	0.00076	141.74%
V 292.402	51.3	0.0002	mg/L	0.00029	0.0002	mg/L	0.00029	166.08%
Zn 206.200	137.3	0.0017	mg/L	0.00039	0.0017	mg/L	0.00039	22.68%
Na 330.237	-88.1	-0.0464	mg/L	0.13925	-0.0464	mg/L	0.13925	300.24%
Cd 226.502	18.9	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	14.62%
Ti 334.940	-97.1	-0.0001	mg/L	0.00009	-0.0001	mg/L	0.00009	89.49%
Ca 227.546	-64.1	-0.1343	mg/L	0.01331	-0.1343	mg/L	0.01331	9.91%

Sequence No.: 34
Sample ID: B0370-02DPDS,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 31
Date Collected: 3/9/2003 12:22:37 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0370-02DPDS,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	338889.8	1.4700	mg/L	0.17345	1.4700	mg/L	0.17345	11.80%
Al 308.215	547413.1	12.842	mg/L	1.5157	12.842	mg/L	1.5157	11.80%
As 188.979	794.4	0.4635	mg/L	0.03128	0.4635	mg/L	0.03128	6.75%
Ba 233.527	860069.2	12.833	mg/L	1.5524	12.833	mg/L	1.5524	12.10%
Be 313.107	2139703.9	0.3104	mg/L	0.03938	0.3104	mg/L	0.03938	12.69%
Co 228.616	95698.5	3.1881	mg/L	0.36808	3.1881	mg/L	0.36808	11.55%
Cr 267.716	332832.6	1.2532	mg/L	0.14885	1.2532	mg/L	0.14885	11.88%
Cu 324.752	552775.0	1.5904	mg/L	0.20235	1.5904	mg/L	0.20235	12.72%
Fe 273.955	258331.9	6.4257	mg/L	0.72787	6.4257	mg/L	0.72787	11.33%
Mg 279.077	1297555.7	33.689	mg/L	3.9478	33.689	mg/L	3.9478	11.72%
Mn 257.610	1032804.0	3.1168	mg/L	0.39299	3.1168	mg/L	0.39299	12.61%
Ni 231.604	191654.4	3.0938	mg/L	0.36665	3.0938	mg/L	0.36665	11.85%
Pb 220.353	8983.0	0.4917	mg/L	0.03092	0.4917	mg/L	0.03092	6.29%
Sb 206.836	940.9	0.4566	mg/L	0.02735	0.4566	mg/L	0.02735	5.99%
Se 196.026	758.6	0.4994	mg/L	0.03372	0.4994	mg/L	0.03372	6.75%
Tl 190.801	934.5	0.5054	mg/L	0.02827	0.5054	mg/L	0.02827	5.59%
V 292.402	908200.3	3.1272	mg/L	0.40023	3.1272	mg/L	0.40023	12.80%
Zn 206.200	252663.5	3.1684	mg/L	0.36312	3.1684	mg/L	0.36312	11.46%
Na 330.237	77287.0	40.760	mg/L	3.7411	40.760	mg/L	3.7411	9.18%
Cd 226.502	68848.3	0.2593	mg/L	0.01777	0.2593	mg/L	0.01777	6.85%
Ti 334.940	3233.6	0.0032	mg/L	0.00033	0.0032	mg/L	0.00033	10.26%
Ca 227.546	15059.0	31.330	mg/L	2.9609	31.330	mg/L	2.9609	9.45%

Sequence No.: 35
Sample ID: B0370-03D,5996
Analyst:
Sample Wt:

Autosampler Location: 32
Date Collected: 3/9/2003 12:26:46 PM
Sample Prep Volume:

FTAMW-2S
EuF 5/6/03

0569

Dilution: Data Type: Original

Mean Data: B0370-03D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	112.5	0.0005	mg/L	0.00024	0.0005	mg/L	0.00024	49.39%
Al 308.215	9894.9	0.2321	mg/L	0.00221	0.2321	mg/L	0.00221	0.95%
As 188.979	2.8	0.0016	mg/L	0.00166	0.0016	mg/L	0.00166	103.99%
Ba 233.527	786.5	0.0117	mg/L	0.00020	0.0117	mg/L	0.00020	1.73%
Be 313.107	649.7	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	12.34%
Co 228.616	23.6	0.0008	mg/L	0.00005	0.0008	mg/L	0.00005	5.96%
Cr 267.716	118.5	0.0004	mg/L	0.00037	0.0004	mg/L	0.00037	83.70%
Cu 324.752	2170.2	0.0062	mg/L	0.00054	0.0062	mg/L	0.00054	8.58%
Fe 273.955	5566.1	0.1385	mg/L	0.00021	0.1385	mg/L	0.00021	0.15%
Mg 279.077	105977.4	2.7503	mg/L	0.02361	2.7503	mg/L	0.02361	0.86%
Mn 257.610	5889.0	0.0177	mg/L	0.00009	0.0177	mg/L	0.00009	0.52%
Ni 231.604	55.4	0.0009	mg/L	0.00001	0.0009	mg/L	0.00001	1.55%
Pb 220.353	9.8	0.0005	mg/L	0.00049	0.0005	mg/L	0.00049	89.67%
Sb 206.836	13.7	0.0066	mg/L	0.00340	0.0066	mg/L	0.00340	51.70%
Se 196.026	2.7	0.0018	mg/L	0.00238	0.0018	mg/L	0.00238	128.90%
Tl 190.801	-4.5	-0.0023	mg/L	0.00152	-0.0023	mg/L	0.00152	65.65%
V 292.402	251.3	0.0009	mg/L	0.00009	0.0009	mg/L	0.00009	10.78%
Zn 206.200	362.1	0.0044	mg/L	0.00037	0.0044	mg/L	0.00037	8.39%
Na 330.237	5096.4	2.6907	mg/L	0.03821	2.6907	mg/L	0.03821	1.42%
Cd 226.502	29.2	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	10.70%
Ti 334.940	3473.9	0.0034	mg/L	0.00019	0.0034	mg/L	0.00019	5.47%
Ca 227.546	756.2	1.5831	mg/L	0.03467	1.5831	mg/L	0.03467	2.19%

Ba = 0.0117 mg/L x 1000 ug/1mg = 11.7 ug/L

Sequence No.: 36
Sample ID: B0370-04D,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 3/9/2003 12:30:49 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0370-04D,5996

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	162.1	0.0006	mg/L	0.00008	0.0006	mg/L	0.00008	13.45%
Al 308.215	2433.4	0.0571	mg/L	0.00389	0.0571	mg/L	0.00389	6.82%
As 188.979	2.3	0.0013	mg/L	0.00129	0.0013	mg/L	0.00129	99.32%
Ba 233.527	1102.9	0.0164	mg/L	0.00006	0.0164	mg/L	0.00006	0.37%
Be 313.107	537.0	0.0001	mg/L	0.00002	0.0001	mg/L	0.00002	19.04%
Co 228.616	22.7	0.0008	mg/L	0.00015	0.0008	mg/L	0.00015	20.06%
Cr 267.716	145.0	0.0005	mg/L	0.00024	0.0005	mg/L	0.00024	45.24%
Cu 324.752	615.4	0.0017	mg/L	0.00017	0.0017	mg/L	0.00017	10.04%
Fe 273.955	2919.8	0.0726	mg/L	0.00063	0.0726	mg/L	0.00063	0.87%
Mg 279.077	263846.1	6.8473	mg/L	0.07687	6.8473	mg/L	0.07687	1.12%
Mn 257.610	11565.4	0.0348	mg/L	0.00015	0.0348	mg/L	0.00015	0.42%
Ni 231.604	37.4	0.0006	mg/L	0.00013	0.0006	mg/L	0.00013	22.04%
Pb 220.353	7.8	0.0004	mg/L	0.00026	0.0004	mg/L	0.00026	60.64%
Sb 206.836	7.7	0.0037	mg/L	0.00037	0.0037	mg/L	0.00037	9.97%
Se 196.026	-0.2	-0.0001	mg/L	0.00285	-0.0001	mg/L	0.00285	>999.9%
Tl 190.801	-7.0	-0.0036	mg/L	0.00114	-0.0036	mg/L	0.00114	32.05%
V 292.402	54.6	0.0002	mg/L	0.00016	0.0002	mg/L	0.00016	86.40%
Zn 206.200	213.5	0.0023	mg/L	0.00018	0.0023	mg/L	0.00018	7.61%
Na 330.237	5769.7	3.0420	mg/L	0.19507	3.0420	mg/L	0.19507	6.41%
Cd 226.502	14.9	0.0001	mg/L	0.00003	0.0001	mg/L	0.00003	58.26%
Ti 334.940	1374.6	0.0014	mg/L	0.00004	0.0014	mg/L	0.00004	3.09%
Ca 227.546	2287.0	4.7910	mg/L	0.01125	4.7910	mg/L	0.01125	0.23%

Sequence No.: 37
Sample ID: B0370-05D,5996
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 34
Date Collected: 3/9/2003 12:34:51 PM

Sample Prep Volume:
Data Type: Original

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **JUNE 5, 2003**

FROM: **SETH C. STAFFEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOA/SVOA/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG: B0383

SAMPLES: 4/Aqueous

FB-030703 FTAMW-102D RB-030703 TB-030703

OVERVIEW

The sample set for CTO 848, SDG B0383, NASA Wallops Island consists of one (1) aqueous environmental sample, one (1) rinsate blank, one (1) flied blank, and one (1) trip blank. All samples were analyzed for Target Compound List (TCL) volatile organic compounds, TCL semivolatile organic compounds and TCL PCBs except TB-030703 was analyzed for volatile organic compounds only. No field duplicate pairs were included in the SDG.

The samples were collected by TetraTech NUS on March 7th, 2003 and were analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, system performance and tuning, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, internal standard recoveries, blank spike results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- There were no major problems that would have resulted in the rejection of data.

Minor Problems

- The following compounds were detected in the method blank and/or trip blank(*):

Compound	Maximum Concentration	Blank Action Level
Methylene chloride*	1.0 ug/L	10 ug/L
Bis(2-ethylhexyl)phthalate	7.0 ug/L	70 ug/L

Sample aliquot and dilution factors were taken into consideration when applying the blank action limit. Positive results for bis(2-ethylhexyl)phthalate below the blank action level were qualified as, B, in the environmental sample. Field quality control samples were not qualified based on method blank contamination.

- The semivolatile initial calibration on 3/21/03 contained a %RSD that exceeded the 30% (and > 50%) quality control limit for 4-chloroaniline. Nondetected results for the aforementioned compound were qualified as estimated, UJ, in the associated samples. The direction of bias cannot be determined.

- The semivolatile continuing calibration on 3/25/03 at 1200 contained %Ds that exceeded the 25% (and > 50%) quality control limit for hexachlorocyclopentadiene. Nondetected results for the aforementioned compound were qualified as estimated, UJ, in the associated samples. The direction of bias cannot be determined.

- Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit. The direction of bias cannot be determined.

Notes

The volatile continuing calibration on 3/20/03 at 0918 contained a %D that exceeded the 25% (but < 50%) quality control limit for bromomethane. No qualification action was warranted because the results for bromomethane were non-detected.

The volatile laboratory control sample %R fell below the lower quality control limit for bromomethane and the %RPD exceeded the 30% quality control limit. No qualification action was warranted on this basis.

The volatile laboratory control sample and duplicate %R exceeded the upper quality control limit for MTBE. No qualifications action was warranted on this basis.

2-Butanone, acetone, and methylene chloride were detected in the field blank (FB-030703) and rinsate blank (RB-030703).

The semivolatile initial calibration on 3/21/03 contained a %RSD that exceeded the 30% quality control limit, but did not exceed 50%, for pentachlorophenol. Therefore, sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/25/03 at 1200 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 4-chloroaniline, 2,4-dinitrophenol, 4-nitrophenol, 4-nitroaniline, indeno(1,2,3-cd)pyrene, and benzo(g,h,i)perylene. Therefore, sample results were not qualified on this basis.

The semivolatile laboratory control sample and duplicate %Rs exceeded the upper quality control limits for isophorone, 4-chloroaniline, N-nitrosodiphenylamine, and bis(2-ethylhexyl phthalate). No qualification was warranted.

In the PCBs fraction, the laboratory did not report results down to the reporting limits specified in the statement of work. Instead, the laboratory reported to a higher reporting limit.

There were differences between what was reported by the laboratory and what was requested in the statement of work (SOW). No action was taken because the project office was contacted and that they approved the variance from the SOW.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several compounds failed to meet the initial and/or continuing calibration quality control criteria. Blank contamination occurred in both the volatile and semivolatile fractions.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", (September 1994) as amended for use within USEPA Region III, and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Seth C. Staffen
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION: OV

nsample	FB-030703	nsample	FB-030703	nsample	FTAMW-102D
samp_date	3/7/2003	samp_date	3/7/2003	samp_date	3/7/2003
lab_id	B0383-03A	lab_id	B0383-03A	lab_id	B0383-02A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	3	J	P
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	10		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	3		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	7		

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION: OV

nsample	FTAMW-102D	nsample	RB-030703	nsample	RB-030703
samp_date	3/7/2003	samp_date	3/7/2003	samp_date	3/7/2003
lab_id	B0383-02A	lab_id	B0383-04A	lab_id	B0383-04A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	2	J	P
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	10		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION: OV

nsample	TB-030703	nsample	TB-030703
samp_date	3/7/2003	samp_date	3/7/2003
lab_id	B0383-01A	lab_id	B0383-01A
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	1	J	P
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION:

nsample	FB-030703
samp_date	3/7/2003
lab_id	B0383-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FB-030703
samp_date	3/7/2003
lab_id	B0383-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	C
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-102D
samp_date	3/7/2003
lab_id	B0383-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION:

nsample	FTAMW-102D
samp_date	3/7/2003
lab_id	B0383-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	8	B	A
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	C
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	RB-030703
samp_date	3/7/2003
lab_id	B0383-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	RB-030703
samp_date	3/7/2003
lab_id	B0383-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	9		
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	C
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0383 MEDIA: WATER DATA FRACTION:

nsample	FB-030703
samp_date	3/7/2003
lab_id	B0383-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-102D
samp_date	3/7/2003
lab_id	B0383-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	RB-030703
samp_date	3/7/2003
lab_id	B0383-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2850

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	3	J
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2850

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW102D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2849

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	7	
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW102D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2849

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2851

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	J
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2851

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2852

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2852

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2803

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2803

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-102D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2802

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-102D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2802

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	8	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2804

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2804

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9873F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/08/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW102D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9872F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/08/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9874F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/08/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX C

SUPPORT DOCUMENTATION

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for seven aqueous samples that were collected on March 7, 2003, and received at Mitkem on March 8, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of bromomethane and high recovery of methyl tert-butyl ether in the lab control sample and high recovery of methyl tert-butyl ether in the lab control sample duplicate. Replicate RPDs were within the QC limits with the exception of bromomethane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone, 4-chloroaniline, N-nitrosodiphenylamine and bis (2-ethylhexyl) phthalate and no recovery of hexachlorocyclopentadiene in both the lab control sample and lab control sample duplicate. Replicate RPDs were within the QC limits

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries and were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/08/03

Project Manager
Garth Glenn

Tetra Tech NUS
600 Clark Avenue Suite 3
King of Prussia PA 19406
610 491 9688
610 491 9645

CHAIN OF CUSTODY RECORD

PROJECT NO.:	SITE NAME:
CTO 848	NASA WFF

SAMPLERS (SIGNATURE): David Mahon

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ml VOA Vial HCl (Benzene, Toluene, Xylene, MTBE, VOA TMB List)	40 ml VOA Vial HCl (Naphthalene VOA TMB List)	1 Liter Amber Glass (TCL SVOA TMB List)	1 Liter Amber Glass (TAL SVOA TMB List)	500 ml Poly HNO3 (TAL Fe,Mn)	500 ml Poly HNO3 (Total Metals Including Mercury)	500 ml Poly HNO3 (Dissolved Metals Without Hg, Fe, Mn)	REMARKS
B0383-1	3/7/03	0705		X	TB-030703		2							Trip Blank
-2	3/7/03	0945		X	FTA MW-102D		2	2	1	1	1	1		
-3	3/7/03	1030		X	FB-030703		2	2	1	1	1	1		Field Blank
-4	3/7/03	1530		X	RB-030703		2	2	1	1	1	1		Rinsate Blank
-5	3/7/03	0945		X	FTA MW-102D F								1	
-6	3/7/03	1030		X	FB-030703 F ~~FTA MW-102D F~~ 3/7/03								1	Field Blank
-7	3/7/03	1530		X	RB-030703 F								1	Rinsate Blank

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
David Mahon	3/7/03 1800			3/8/03 1000	Tim Shubrooks TtC
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY(SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE / TIME:	REMARKS: Shipped Via Fedral Express Airbill NO 8286 9464 5197	

(0498)

MITKEM CORPORATION

1 1

Sample Condition Form

Page __ of __

Received By: NL	Reviewed By: JH	Date: 3-8-03	MITKEM Project: B0383
Client Project: NASA WFF			
Client: TETRATECH			

1) Cooler Sealed YES / NO*

*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX
828684645197

5)Cooler Temperature 1C

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 3-8-03

8)Time Received 10:00

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B038301					H
02	CZ				H
03	CZ				H
04	CZ				H
05	CZ				
06	CZ				
B0383 07	CZ				

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks

Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

B0383

HOLDING TIME
05/02/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FB-030703	203195-002		B0383	CL	03/07/03	/ /	03/11/03	0	0	4
MG/L	FTAMW-102D	203195-001	NORMAL	B0383	CL	03/07/03	/ /	03/11/03	0	0	4
MG/L	RB-030703	203195-003	NORMAL	B0383	CL	03/07/03	/ /	03/11/03	0	0	4
UG/L	FB-030703	B0383-03D	NORMAL	B0383	HG	03/07/03	03/11/03	03/12/03	4	1	5
UG/L	FTAMW-102D	B0383-02D		B0383	HG	03/07/03	03/11/03	03/12/03	4	1	5
%	LCSW	LCS-6044	LCS	B0383	HG	/ /	03/11/03	03/12/03	0	1	0
UG/L	PBW	MB-6044	M_BLANK	B0383	HG	/ /	03/11/03	03/12/03	0	1	0
UG/L	RB-030703	B0383-04D	NORMAL	B0383	HG	03/07/03	03/11/03	03/12/03	4	1	5
UG/L	FB-030703F	B0383-06D	NORMAL	B0383	HGF	03/08/03	03/11/03	03/12/03	3	1	4
UG/L	FTAM102DF	B0383-05D	NORMAL	B0383	HGF	03/08/03	03/11/03	03/12/03	3	1	4
UG/L	RB030703F	B0383-07D	NORMAL	B0383	HGF	03/08/03	03/11/03	03/12/03	3	1	4
UG/L	FB-030703	B0383-03D	NORMAL	B0383	M	03/07/03	03/11/03	03/11/03	4	0	4
UG/L	FTAMW-102D	B0383-02D	NORMAL	B0383	M	03/07/03	03/11/03	03/11/03	4	0	4
%	LCSW	LCS-6034	LCS	B0383	M	/ /	03/11/03	03/11/03	0	0	0
UG/L	PBW	MB-6034	M_BLANK	B0383	M	/ /	03/11/03	03/11/03	0	0	0
UG/L	RB-030703	B0383-04D	NORMAL	B0383	M	03/07/03	03/11/03	03/11/03	4	0	4
UG/L	FB-030703F	B0383-06D	NORMAL	B0383	MF	03/08/03	03/11/03	03/11/03	3	0	3
UG/L	FTAM102DF	B0383-05D	NORMAL	B0383	MF	03/08/03	03/11/03	03/11/03	3	0	3
UG/L	RB030703F	B0383-07D	NORMAL	B0383	MF	03/08/03	03/11/03	03/11/03	3	0	3
MG/L	FB-030703	203195-002	NORMAL	B0383	NTA	03/07/03	/ /	03/11/03	0	0	4
MG/L	FTAMW-102D	203195-001		B0383	NTA	03/07/03	/ /	03/11/03	0	0	4
MG/L	RB-030703	203195-003	NORMAL	B0383	NTA	03/07/03	/ /	03/11/03	0	0	4
MG/L	FB-030703	203195-002	NORMAL	B0383	NTI	03/07/03	/ /	03/11/03	0	0	4
MG/L	FTAMW-102D	203195-001	NORMAL	B0383	NTI	03/07/03	/ /	03/11/03	0	0	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	RB-030703	203195-003		B0383	NTI	03/07/03	/ /	03/11/03	0	0	4
%	FB-030703	B0383-03E	NORMAL	B0383	OS	03/07/03	03/12/03	03/25/03	5	13	18
UG/L	FTAMW-102D	B0383-02E	NORMAL	B0383	OS	03/07/03	03/12/03	03/25/03	5	13	18
%	RB-030703	B0383-04E		B0383	OS	03/07/03	03/12/03	03/25/03	5	13	18
%	S2HLCS	LCS-6052	NORMAL	B0383	OS	/ /	03/12/03	03/25/03	0	13	0
%	S2HLCSD	LCSD-6052	NORMAL	B0383	OS	/ /	03/12/03	03/25/03	0	13	0
%	SBLK2H	MB-6052	M_BLANK	B0383	OS	/ /	03/12/03	03/25/03	0	13	0
%	FB-030703	B0383-03A	NORMAL	B0383	OV	03/07/03	03/20/03	03/20/03	13	0	13
%	FTAMW-102D	B0383-02A	NORMAL	B0383	OV	03/07/03	03/20/03	03/20/03	13	0	13
UG/L	RB-030703	B0383-04A	NORMAL	B0383	OV	03/07/03	03/20/03	03/20/03	13	0	13
%	TB-030703	B0383-01A	NORMAL	B0383	OV	03/07/03	03/20/03	03/20/03	13	0	13
%	VBLK1G	V1B0320A	M_BLANK	B0383	OV	/ /	03/20/03	03/20/03	0	0	0
%	VBLK1GLCS	V1L0320A	LCS	B0383	OV	/ /	03/20/03	03/20/03	0	0	0
%	VBLK1GLCSD	V1L0320B	LCSD	B0383	OV	/ /	03/20/03	03/20/03	0	0	0
%	BBLK1A	MB-6030	M_BLANK	B0383	PCB	/ /	03/11/03	03/14/03	0	3	0
%	BBLK1ALCS	LCS-6031	LCS	B0383	PCB	/ /	03/11/03	03/14/03	0	3	0
%	FB-030703	B0383-03E	NORMAL	B0383	PCB	03/07/03	03/11/03	03/14/03	4	3	7
%	FTAMW-102D	B0383-02E	NORMAL	B0383	PCB	03/07/03	03/11/03	03/14/03	4	3	7
%	RB-030703	B0383-04E		B0383	PCB	03/07/03	03/11/03	03/15/03	4	4	8
MG/L	FB-030703	203195-002	NORMAL	B0383	SO4	03/07/03	/ /	03/11/03	0	0	4
MG/L	FTAMW-102D	203195-001	NORMAL	B0383	SO4	03/07/03	/ /	03/11/03	0	0	4
MG/L	RB-030703	203195-003	NORMAL	B0383	SO4	03/07/03	/ /	03/11/03	0	0	4
MG/L	FB-030703	B0383-03B	NORMAL	B0383	TOC	03/07/03	03/18/03	03/18/03	11	0	11
MG/L	FTAMW-102D	B0383-02B	NORMAL	B0383	TOC	03/07/03	03/18/03	03/18/03	11	0	11
%	FTAMW-102DMS	B0383-02BMS	MS	B0383	TOC	03/07/03	03/18/03	03/18/03	11	0	11
%	LCS-6204	LCS-6204	LCS	B0383	TOC	/ /	03/18/03	03/18/03	0	0	0
MG/L	MB-6204	MB-6204	M_BLANK	B0383	TOC	/ /	03/18/03	03/18/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	RB-030703	B0383-04B	NORMAL	B0383	TOC	03/07/03	03/18/03	03/18/03	11	0	11

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: V1B0320A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2843

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: V1B0320A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2843

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: V1B0320A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2843

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	17.37	15	J
2.					
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5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Lab File ID: V1F2810 BFB Injection Date: 03/19/03

Instrument ID: V1 BFB Injection Time: 1218

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.9
75	30.0 - 60.0% of mass 95	40.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	73.7
175	5.0 - 9.0% of mass 174	5.4 (7.4)1
176	95.0 - 101.0% of mass 174	70.7 (95.8)1
177	5.0 - 9.0% of mass 176	4.6 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD2001E	V1S0319D	V1F2814	03/19/03	1339
02	VSTD1001E	V1S0319E	V1F2815	03/19/03	1407
03	VSTD0501E	V1S0319A	V1F2816	03/19/03	1435
04	VSTD0201E	V1S0319F	V1F2817	03/19/03	1503
05	VSTD0051E	V1S0319B	V1F2818	03/19/03	1531
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: V1 Calibration Date(s): 03/19/03 03/19/03

Heated Purge: (Y/N) N Calibration Time(s): 1232 1531

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2818 RRF20 =V1F2817
RRF50 =V1F2816 RRF100=V1F2815 RRF200=V1F2814

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.376	0.319	0.305	0.311	0.281	0.318	11.0
*	Chloromethane	0.629	0.577	0.548	0.529	0.471	0.551	10.6*
	Vinyl Chloride	0.480	0.439	0.418	0.400	0.322	0.412	14.1
	Bromomethane	0.153	0.118	0.105	0.134	0.094	0.121	19.5
	Chloroethane	0.145	0.163	0.173	0.152	0.158	0.158	6.8
	Trichlorofluoromethane	0.276	0.255	0.249	0.250	0.221	0.250	7.9
	1,1-Dichloroethene	0.275	0.250	0.250	0.260	0.229	0.253	6.6
	Acetone	0.101	0.045	0.068	0.064	0.068	0.069	29.2
	Carbon Disulfide	0.939	0.872	0.838	0.832	0.595	0.815	16.0
	Methylene Chloride	0.339	0.299	0.299	0.301	0.268	0.301	8.4
	trans-1,2-Dichloroethene	0.382	0.326	0.335	0.342	0.329	0.343	6.6
	Methyl tert-butyl ether	0.267	0.214	0.270	0.236	0.302	0.258	13.2
*	1,1-Dichloroethane	0.614	0.560	0.574	0.582	0.570	0.580	3.5*
	2-Butanone	0.140	0.133	0.134	0.128	0.153	0.138	7.1
	cis-1,2-Dichloroethene	0.372	0.328	0.339	0.344	0.341	0.345	4.7
	Chloroform	0.523	0.473	0.485	0.494	0.508	0.497	3.9
	1,1,1-Trichloroethane	0.380	0.339	0.343	0.347	0.347	0.351	4.7
	Carbon Tetrachloride	0.305	0.281	0.286	0.290	0.301	0.293	3.5
	1,2-Dichloroethane	0.336	0.312	0.322	0.314	0.336	0.324	3.5
	Benzene	1.385	1.279	1.319	1.355	1.364	1.340	3.1
	Trichloroethene	0.318	0.292	0.304	0.315	0.328	0.311	4.4
	1,2-Dichloropropane	0.352	0.334	0.340	0.350	0.345	0.344	2.1
	Bromodichloromethane	0.422	0.365	0.373	0.382	0.397	0.388	5.8
	cis-1,3-Dichloropropene	0.524	0.495	0.527	0.540	0.565	0.530	4.8
	4-Methyl-2-pentanone	0.260	0.314	0.289	0.281	0.332	0.295	9.6
	Toluene	1.343	1.246	1.294	1.363	1.392	1.328	4.4
	trans-1,3-Dichloropropene	0.405	0.406	0.432	0.439	0.482	0.433	7.3
	1,1,2-Trichloroethane	0.264	0.251	0.266	0.267	0.293	0.268	5.8
	Tetrachloroethene	0.337	0.314	0.319	0.337	0.346	0.331	4.1
	2-Hexanone	0.198	0.233	0.266	0.257	0.314	0.254	16.9
	Dibromochloromethane	0.390	0.376	0.391	0.400	0.436	0.399	5.7
	1,2-Dibromoethane	0.375	0.373	0.382	0.381	0.426	0.387	5.6
*	Chlorobenzene	1.226	1.136	1.150	1.210	1.203	1.185	3.4*
	Ethylbenzene	0.632	0.580	0.598	0.628	0.632	0.614	3.9
	m,p-Xylene	0.812	0.746	0.760	0.798	0.786	0.780	3.5
	o-Xylene	0.780	0.738	0.746	0.779	0.767	0.762	2.5
	Xylene (Total)	0.801	0.743	0.756	0.792	0.780	0.774	3.1

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: V1 Calibration Date(s): 03/19/03 03/19/03

Heated Purge: (Y/N) N Calibration Time(s): 1232 1531

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V1F2818 RRF20 =V1F2817
RRF50 =V1F2816 RRF100=V1F2815 RRF200=V1F2814

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD	
Styrene		0.979	1.131	1.257	1.361	1.365	1.219	13.5	
Bromoform	*	0.221	0.233	0.251	0.254	0.298	0.251	11.7	*
Isopropylbenzene		1.858	1.726	1.766	1.866	1.886	1.820	3.9	
1,1,2,2-Tetrachloroethane	*	1.120	1.063	1.048	1.016	1.098	1.069	3.8	*
1,3,5-Trimethylbenzene		3.357	2.970	2.928	3.019	2.831	3.021	6.6	
1,2,4-Trimethylbenzene		3.210	2.975	2.978	3.101	3.012	3.055	3.3	
1,3-Dichlorobenzene		1.674	1.597	1.652	1.757	1.796	1.695	4.7	
1,4-Dichlorobenzene		1.978	1.780	1.782	1.877	1.887	1.861	4.4	
1,2-Dichlorobenzene		1.660	1.582	1.598	1.668	1.708	1.643	3.2	
1,2-Dibromo-3-chloropropane		0.116	0.120	0.124	0.121	0.150	0.126	10.7	
1,2,4-Trichlorobenzene		0.737	0.721	0.805	0.897	0.968	0.826	12.8	
1,1,2-Trichlo-1,2,2-trifluor		0.279	0.241	0.241	0.232	0.164	0.231	18.1	
Methyl Acetate		0.238	0.275	0.235	0.213	0.195	0.231	13.1	
Cyclohexane		0.622	0.562	0.556	0.559	0.503	0.560	7.5	
Methylcyclohexane		0.570	0.504	0.507	0.519	0.505	0.521	5.4	
Dibromofluoromethane		0.283	0.256	0.274	0.279	0.277	0.274	3.8	
1,2-Dichloroethane-d4		0.076	0.073	0.070	0.076	0.076	0.074	3.8	
Toluene-d8		1.575	1.312	1.391	1.444	1.405	1.425	6.8	
Bromofluorobenzene		0.598	0.518	0.554	0.563	0.551	0.557	5.1	

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Lab File ID: V1F2840 BFB Injection Date: 03/20/03

Instrument ID: V1 BFB Injection Time: 0857

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.9
75	30.0 - 60.0% of mass 95	40.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	69.0
175	5.0 - 9.0% of mass 174	5.1 (7.4)1
176	95.0 - 101.0% of mass 174	66.3 (96.1)1
177	5.0 - 9.0% of mass 176	4.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0501F	V1S0320A	V1F2841	03/20/03	0918
02	VBLK1G	V1B0320A	V1F2843	03/20/03	1019
03	V1GLCS	V1L0320A	V1F2844	03/20/03	1102
04	V1GLCSD	V1L0320B	V1F2845	03/20/03	1134
05	FTAMW102D	B0383-02A	V1F2849	03/20/03	1332
06	FB-030703	B0383-03A	V1F2850	03/20/03	1400
07	RB-030703	B0383-04A	V1F2851	03/20/03	1429
08	TB-030703	B0383-01A	V1F2852	03/20/03	1458
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: V1 Calibration Date: 03/20/03 Time: 0918

Lab File ID: V1F2841 Init. Calib. Date(s): 03/19/03 03/19/03

Heated Purge: (Y/N) N Init. Calib. Times: 1232 1531

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.318	0.303	0.01	4.7	20.0	
Chloromethane	0.551	0.522	0.1	5.3	20.0	
Vinyl Chloride	0.412	0.404	0.01	1.9	20.0	
Bromomethane	0.121	0.081	0.01	33.0	20.0	<-
Chloroethane	0.158	0.186	0.01	17.7	20.0	
Trichlorofluoromethane	0.250	0.236	0.01	5.6	20.0	
1,1-Dichloroethene	0.253	0.267	0.01	5.5	20.0	
Acetone	0.069	0.084	0.01	21.7	20.0	<-
Carbon Disulfide	0.815	0.886	0.01	8.7	20.0	
Methylene Chloride	0.301	0.293	0.01	2.6	20.0	
trans-1,2-Dichloroethene	0.343	0.335	0.01	2.3	20.0	
Methyl tert-butyl ether	0.258	0.282	0.01	9.3	20.0	
1,1-Dichloroethane	0.580	0.576	0.1	0.7	20.0	
2-Butanone	0.138	0.141	0.01	2.2	20.0	
cis-1,2-Dichloroethene	0.345	0.328	0.01	4.9	20.0	
Chloroform	0.497	0.486	0.01	2.2	20.0	
1,1,1-Trichloroethane	0.351	0.339	0.01	3.4	20.0	
Carbon Tetrachloride	0.293	0.286	0.01	2.4	20.0	
1,2-Dichloroethane	0.324	0.312	0.01	3.7	20.0	
Benzene	1.340	1.308	0.01	2.4	20.0	
Trichloroethene	0.311	0.295	0.01	5.1	20.0	
1,2-Dichloropropane	0.344	0.331	0.01	3.8	20.0	
Bromodichloromethane	0.388	0.367	0.01	5.4	20.0	
cis-1,3-Dichloropropene	0.530	0.505	0.01	4.7	20.0	
4-Methyl-2-pentanone	0.295	0.293	0.01	0.7	20.0	
Toluene	1.328	1.265	0.01	4.7	20.0	
trans-1,3-Dichloropropene	0.433	0.418	0.01	3.5	20.0	
1,1,2-Trichloroethane	0.268	0.250	0.01	6.7	20.0	
Tetrachloroethene	0.331	0.304	0.01	8.2	20.0	
2-Hexanone	0.254	0.279	0.01	9.8	20.0	
Dibromochloromethane	0.399	0.382	0.01	4.3	20.0	
1,2-Dibromoethane	0.387	0.378	0.01	2.3	20.0	
Chlorobenzene	1.185	1.154	0.3	2.6	20.0	
Ethylbenzene	0.614	0.594	0.01	3.2	20.0	
m,p-Xylene	0.780	0.763	0.01	2.2	20.0	
o-Xylene	0.762	0.737	0.01	3.3	20.0	
Xylene (Total)	0.774	0.754	0.01	2.6	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: V1 Calibration Date: 03/20/03 Time: 0918

Lab File ID: V1F2841 Init. Calib. Date(s): 03/19/03 03/19/03

Heated Purge: (Y/N) N Init. Calib. Times: 1232 1531

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Styrene	1.219	1.327	0.01	8.8	20.0	
Bromoform	0.251	0.242	0.1	3.6	20.0	
Isopropylbenzene	1.820	1.794	0.01	1.4	20.0	
1,1,2,2-Tetrachloroethane	1.069	1.050	0.3	1.8	20.0	
1,3,5-Trimethylbenzene	3.021	3.019	0.01	0.1	20.0	
1,2,4-Trimethylbenzene	3.055	3.031	0.01	0.8	20.0	
1,3-Dichlorobenzene	1.695	1.610	0.01	5.0	20.0	
1,4-Dichlorobenzene	1.861	1.759	0.01	5.5	20.0	
1,2-Dichlorobenzene	1.643	1.467	0.01	10.7	20.0	
1,2-Dibromo-3-chloropropane	0.126	0.125	0.01	0.8	20.0	
1,2,4-Trichlorobenzene	0.826	0.772	0.01	6.5	20.0	
1,1,2-Trichlo-1,2,2-trifluor	0.231	0.258	0.01	11.7	20.0	
Methyl Acetate	0.231	0.228	0.01	1.3	20.0	
Cyclohexane	0.560	0.594	0.01	6.1	20.0	
Methylcyclohexane	0.521	0.512	0.01	1.7	20.0	
Dibromofluoromethane	0.274	0.208	0.01	24.1	20.0	<-
1,2-Dichloroethane-d4	0.074	0.052	0.01	29.7	20.0	<-
Toluene-d8	1.425	1.192	0.01	16.4	20.0	
Bromofluorobenzene	0.557	0.568	0.01	2.0	20.0	

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK1G	85	77	87	101	0
02	V1GLCS	94	92	98	118	0
03	V1GLCSD	96	89	98	116	0
04	FTAMW102D	97	86	97	110	0
05	FB-030703	99	89	98	110	0
06	RB-030703	97	87	94	110	0
07	TB-030703	98	86	97	112	0
08						
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29						
30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER (BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: V1GLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		46	92	48-135
Chloromethane	50		46	92	60-118
Vinyl Chloride	50		46	92	65-113
Bromomethane	50		30	60*	73-122
Chloroethane	50		45	90	72-118
Trichlorofluoromethane	50		45	90	68-129
1,1-Dichloroethene	50		48	96	67-121
Acetone	50		60	120	38-161
Carbon Disulfide	50		49	98	53-137
Methylene Chloride	50		48	96	59-132
trans-1,2-Dichloroethen	50		47	94	71-124
Methyl tert-butyl ether	50		110	220*	75-123
1,1-Dichloroethane	50		49	98	83-116
2-Butanone	50		60	120	64-139
cis-1,2-Dichloroethene	50		48	96	83-120
Chloroform	50		49	98	89-118
1,1,1-Trichloroethane	50		48	96	81-122
Carbon Tetrachloride	50		49	98	79-125
1,2-Dichloroethane	50		52	104	83-123
Benzene	50		48	96	81-120
Trichloroethene	50		46	92	77-121
1,2-Dichloropropane	50		49	98	81-116
Bromodichloromethane	50		49	98	90-114
cis-1,3-Dichloropropene	50		50	100	78-119
4-Methyl-2-pentanone	50		57	114	57-138
Toluene	50		47	94	81-121
trans-1,3-Dichloroprope	50		51	102	85-118
1,1,2-Trichloroethane	50		51	102	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: V1GLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		44	88	73-121
2-Hexanone	50		60	120	53-145
Dibromochloromethane	50		51	102	80-124
1,2-Dibromoethane	50		52	104	80-124
Chlorobenzene	50		47	94	82-118
Ethylbenzene	50		46	92	80-122
Xylene (Total)	150		140	93	81-121
Styrene	50		51	102	77-128
Bromoform	50		53	106	77-130
Isopropylbenzene	50		46	92	58-148
1,1,2,2-Tetrachloroetha	50		54	108	76-125
1,3,5-Trimethylbenzene	50		47	94	76-116
1,2,4-Trimethylbenzene	50		47	94	77-117
1,3-Dichlorobenzene	50		46	92	80-116
1,4-Dichlorobenzene	50		46	92	80-114
1,2-Dichlorobenzene	50		47	94	81-116
1,2-Dibromo-3-chloropro	50		58	116	71-126
1,2,4-Trichlorobenzene	50		48	96	67-114
1,1,2-Trichlo-1,2,2-tri	50		52	104	70-130
Methyl Acetate	50		54	108	70-130
Cyclohexane	50		50	100	70-130
Methylcyclohexane	50		47	94	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: V1GLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	47	94	2	40	48-135
Chloromethane	50	45	90	2	40	60-118
Vinyl Chloride	50	47	94	2	40	65-113
Bromomethane	50	50	100	50*	40	73-122
Chloroethane	50	49	98	8	40	72-118
Trichlorofluoromethane	50	45	90	0	40	68-129
1,1-Dichloroethene	50	52	104	8	40	67-121
Acetone	50	60	120	0	40	38-161
Carbon Disulfide	50	51	102	4	40	53-137
Methylene Chloride	50	49	98	2	40	59-132
trans-1,2-Dichloroethen	50	51	102	8	40	71-124
Methyl tert-butyl ether	50	120	240*	9	40	75-123
1,1-Dichloroethane	50	52	104	6	40	83-116
2-Butanone	50	61	122	2	40	64-139
cis-1,2-Dichloroethene	50	51	102	6	40	83-120
Chloroform	50	52	104	6	40	89-118
1,1,1-Trichloroethane	50	52	104	8	40	81-122
Carbon Tetrachloride	50	52	104	6	40	79-125
1,2-Dichloroethane	50	53	106	2	40	83-123
Benzene	50	51	102	6	40	81-120
Trichloroethene	50	50	100	8	40	77-121
1,2-Dichloropropane	50	51	102	4	40	81-116
Bromodichloromethane	50	51	102	4	40	90-114
cis-1,3-Dichloropropene	50	52	104	4	40	78-119
4-Methyl-2-pentanone	50	54	108	5	40	57-138
Toluene	50	50	100	6	40	81-121
trans-1,3-Dichloroprope	50	53	106	4	40	85-118
1,1,2-Trichloroethane	50	52	104	2	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: V1GLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	49	98	11	40	73-121
2-Hexanone	50	62	124	3	40	53-145
Dibromochloromethane	50	53	106	4	40	80-124
1,2-Dibromoethane	50	54	108	4	40	80-124
Chlorobenzene	50	50	100	6	40	82-118
Ethylbenzene	50	50	100	8	40	80-122
Xylene (Total)	150	150	100	7	40	81-121
Styrene	50	54	108	6	40	77-128
Bromoform	50	55	110	4	40	77-130
Isopropylbenzene	50	50	100	8	40	58-148
1,1,2,2-Tetrachloroetha	50	56	112	4	40	76-125
1,3,5-Trimethylbenzene	50	51	102	8	40	76-116
1,2,4-Trimethylbenzene	50	51	102	8	40	77-117
1,3-Dichlorobenzene	50	51	102	10	40	80-116
1,4-Dichlorobenzene	50	50	100	8	40	80-114
1,2-Dichlorobenzene	50	50	100	6	40	81-116
1,2-Dibromo-3-chloropro	50	61	122	5	40	71-126
1,2,4-Trichlorobenzene	50	52	104	8	40	67-114
1,1,2-Trichlo-1,2,2-tri	50	54	108	4	40	70-130
Methyl Acetate	50	52	104	4	40	70-130
Cyclohexane	50	52	104	4	40	70-130
Methylcyclohexane	50	49	98	4	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 50 outside limits
Spike Recovery: 3 out of 100 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Lab File ID (Standard): V1F2841 Date Analyzed: 03/20/03

Instrument ID: V1 Time Analyzed: 0918

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	2289094	5.78	1581990	9.43	788508	12.40
	UPPER LIMIT	4578188	6.28	3163980	9.93	1577016	12.90
	LOWER LIMIT	1144547	5.28	790995	8.93	394254	11.90
	EPA SAMPLE NO.						
01	VBLK1G	2032595	5.78	1448959	9.43	615784	12.41
02	V1GLCS	2106536	5.79	1500533	9.44	756268	12.41
03	V1GLCSD	2085508	5.78	1486180	9.44	732540	12.41
04	FTAMW102D	2023930	5.79	1434554	9.44	630307	12.41
05	FB-030703	2054570	5.79	1483711	9.44	616139	12.41
06	RB-030703	2049544	5.79	1490278	9.44	633329	12.41
07	TB-030703	2007438	5.79	1453868	9.44	625958	12.41
08							
09							
10							
11							
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15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0383
SUBJECT	8 VOA (AQ)		
BASED ON	8260 B	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

FB-030703

2-Butanone 3.0 µg/L

$$\frac{(16231 \text{ area})(250 \text{ µg})(1)}{(2054570 \text{ area})(0.138)(5 \text{ mL})} = 2.86 \text{ µg/mL}$$

≈ 3.0 µg/L

Data File: \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\V1F2850.D
Report Date: 27-Mar-2003 11:08

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\V1F2850.D
Lab Smp Id: B0383-03A Client Smp ID: FB-030703
Inj Date : 20-MAR-2003 14:00
Operator : KEN Inst ID: v1.i
Smp Info : TETRA,B0383-03A,FB-030703,V1B0320A,,B0383
Misc Info : 08-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\v18260.m
Meth Date : 27-Mar-2003 11:06 mtl Quant Type: ISTD
Cal Date : 19-MAR-2003 15:31 Cal File: V1F2818.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: cto848.sub
Target Version: 4.03
Processing Host: TARGET5

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	9 Acetone	43	2.883	2.873	(0.498)	28411	9.97330	10(M) MI TCA 3/27/03
	14 Methylene Chloride	84	3.297	3.287	(0.569)	33918	2.74081	3
	22 2-Butanone	43	4.623	4.581	(0.798)	16231	2.87094	3(a)
$	30 Dibromofluoromethane	113	5.068	5.058	(0.875)	555969	49.3657	49
$	35 1,2-Dichloroethane-d4	102	5.418	5.409	(0.936)	135939	44.6269	45
*	38 Fluorobenzene	96	5.789	5.780	(1.000)	2054570	50.0000	
$	47 Toluene-d8	98	7.614	7.604	(0.807)	2078902	49.1446	49
*	57 Chlorobenzene-d5	117	9.438	9.429	(1.000)	1483711	50.0000	
$	68 Bromofluorobenzene	95	10.998	10.988	(1.165)	913650	55.2732	55
*	81 1,4-Dichlorobenzene-d4	152	12.409	12.399	(1.000)	616139	50.0000	TCA 3/27/03

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\V1F2850.D
Report Date: 27-Mar-2003 11:08

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\V1F2850.D
Lab Smp Id: B0383-03A Client Smp ID: FB-030703
Inj Date : 20-MAR-2003 14:00
Operator : KEN Inst ID: v1.i
Smp Info : TETRA,B0383-03A,FB-030703,V1B0320A,,B0383
Misc Info : 08-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v1.i\030320.B\v18260.m
Meth Date : 27-Mar-2003 11:06 mtl Quant Type: ISTD
Cal Date : 19-MAR-2003 15:31 Cal File: V1F2818.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: cto848.sub
Target Version: 4.03
Processing Host: TARGET5

- NO TENTATIVELY IDENTIFIED COMPOUNDS -

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2850

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	10	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	3	J
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-030703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: B0383-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2850

Level: (low/med) LOW Date Received: 03/08/03

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2H

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: MB-6052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2798

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2H

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: MB-6052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2798

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	7	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Lab File ID: S2D2718 DFTPP Injection Date: 03/21/03

Instrument ID: S2 DFTPP Injection Time: 1020

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.3
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	61.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	47.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.0% of mass 198	2.62
441	Present, but less than mass 443	14.0
442	40.0 - 99.9% of mass 198	88.3
443	17.0 - 23.0% of mass 442	16.7 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502C	SS0321A	S2D2719	03/21/03	1036
02	SSTD1602C	SS0321B	S2D2720	03/21/03	1116
03	SSTD0102C	SS0321C	S2D2721	03/21/03	1155
04	SSTD1202C	SS0321D	S2D2722	03/21/03	1235
05	SSTD0202C	SS0321E	S2D2723	03/21/03	1314
06	SSTD0802C	SS0321F	S2D2724	03/21/03	1354
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF10 =S2D2721 RRF20 =S2D2723
RRF50 =S2D2719 RRF80 =S2D2724 RRF120=S2D2722

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.499		1.577	1.475	1.433			*
bis(2-Chloroethyl)Ether	*	1.289		1.349	1.228	1.165			*
2-Chlorophenol	*	1.334		1.357	1.327	1.282			*
2-Methylphenol	*	1.169		1.179	1.135	1.086			*
2,2'-oxybis(1-Chloropropane)	*	1.820		1.729	1.492	1.350			*
4-Methylphenol	*	1.198		1.224	1.205	1.153			*
N-Nitroso-di-n-propylamine	*	0.945		0.933	0.829	0.751			*
Hexachloroethane	*	0.633		0.648	0.616	0.579			*
Nitrobenzene	*	0.414		0.416	0.392	0.383			*
Isophorone	*	0.597		0.593	0.567	0.534			*
2-Nitrophenol	*	0.210		0.227	0.220	0.219			*
2,4-Dimethylphenol	*	0.316		0.296	0.300	0.294			*
2,4-Dichlorophenol	*	0.284		0.328	0.331	0.329			*
Naphthalene	*	1.071		1.096	1.062	1.068			*
4-Chloroaniline	*	0.516		0.228	0.196	0.121			*
bis(2-Chloroethoxy)methane	*	0.452		0.450	0.438	0.427			*
Hexachlorobutadiene	*	0.197		0.213	0.212	0.207			*
4-Chloro-3-Methylphenol	*	0.296		0.328	0.317	0.316			*
2-Methylnaphthalene	*	0.846		0.900	0.864	0.860			*
Hexachlorocyclopentadiene	*	0.153		0.280	0.316	0.335			*
2,4,6-Trichlorophenol	*	0.339		0.404	0.394	0.404			*
2,4,5-Trichlorophenol	*		0.400	0.435	0.427	0.437			*
2-Chloronaphthalene	*	1.157		1.237	1.163	1.122			*
2-Nitroaniline	*		0.508	0.544	0.480	0.477			*
Dimethylphthalate	*	1.353		1.368	1.280	1.278			*
Acenaphthylene	*	1.824		1.914	1.803	1.818			*
2,6-Dinitrotoluene	*	0.322		0.338	0.325	0.322			*
3-Nitroaniline	*		0.466	0.503	0.452	0.421			*
Acenaphthene	*	1.068		1.102	1.032	1.090			*
2,4-Dinitrophenol	*		0.138	0.151	0.180	0.203			*
4-Nitrophenol	*		0.092	0.134	0.142	0.154			*
Dibenzofuran	*	2.125		2.171	2.100	2.068			*
2,4-Dinitrotoluene	*	0.417		0.443	0.408	0.412			*
Diethylphthalate	*	1.342		1.366	1.273	1.269			*
4-Chlorophenyl-phenylether	*	0.596		0.668	0.637	0.633			*
Fluorene	*	1.276		1.356	1.227	1.223			*
4-Nitroaniline	*		0.426	0.450	0.328	0.345			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF10 =S2D2721 RRF20 =S2D2723
RRF50 =S2D2719 RRF80 =S2D2724 RRF120=S2D2722

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.147	0.181	0.176	0.189			*
N-Nitrosodiphenylamine (1)	*	0.460		0.366	0.322	0.308			*
4-Bromophenyl-phenylether	*	0.230		0.242	0.244	0.248			*
Hexachlorobenzene	*	0.294		0.300	0.296	0.300			*
Pentachlorophenol	*		0.057	0.103	0.118	0.129			*
Phenanthrene	*	1.060		1.137	1.094	1.114			*
Anthracene	*	1.082		1.065	1.051	1.103			*
Di-n-butylphthalate	*	1.364		1.428	1.394	1.377			*
Fluoranthene	*	1.128		1.173	1.180	1.195			*
Pyrene	*	1.081		1.136	1.098	1.101			*
Butylbenzylphthalate	*	0.554		0.580	0.557	0.567			*
3,3'-Dichlorobenzidine		0.470		0.453	0.407	0.373			
Benzo(a)anthracene	*	1.070		1.082	1.034	1.011			*
Chrysene	*	0.934		0.959	0.962	0.967			*
bis(2-Ethylhexyl)phthalate	*	0.772		0.811	0.787	0.783			*
Di-n-octylphthalate	*	1.871		2.176	2.059	2.044			*
Benzo(b)fluoranthene	*	1.385		1.650	1.603	1.651			*
Benzo(k)fluoranthene	*	1.450		1.597	1.577	1.597			*
Benzo(a)pyrene	*	1.275		1.364	1.328	1.335			*
Indeno(1,2,3-cd)pyrene	*	1.454		1.687	1.645	1.638			*
Dibenzo(a,h)anthracene	*	1.208		1.413	1.390	1.386			*
Benzo(g,h,i)perylene	*	1.214		1.395	1.284	1.310			*
Nitrobenzene-d5		0.424		0.444	0.426	0.422			*
2-Fluorobiphenyl	*	1.395		1.543	1.443	1.449			*
Terphenyl-d14	*	0.811		0.848	0.836	0.821			*
Phenol-d5	*	1.494		1.540	1.483	1.426			*
2-Fluorophenol	*	1.052		1.208	1.210	1.185			*
2,4,6-Tribromophenol	*	0.140		0.154	0.152	0.152			*
2-Chlorophenol-d4	*	1.322		1.350	1.321	1.270			*
1,2-Dichlorobenzene-d4	*	0.926		0.927	0.891	0.863			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND	RRF160					$\overline{RRF}$	%RSD
Phenol	* 1.475					1.492	3.6*
bis(2-Chloroethyl)Ether	* 1.158					1.238	6.6*
2-Chlorophenol	* 1.301					1.320	2.2*
2-Methylphenol	* 1.122					1.138	3.3*
2,2'-oxybis(1-Chloropropane)	* 1.363					1.551	13.8*
4-Methylphenol	* 1.166					1.189	2.5*
N-Nitroso-di-n-propylamine	* 0.678					0.827	13.9*
Hexachloroethane	* 0.593					0.614	4.6*
Nitrobenzene	* 0.400					0.401	3.5*
Isophorone	* 0.557					0.570	4.6*
2-Nitrophenol	* 0.233					0.222	4.0*
2,4-Dimethylphenol	* 0.335					0.308	5.6*
2,4-Dichlorophenol	* 0.325					0.319	6.2*
Naphthalene	* 1.104					1.080	1.7*
4-Chloroaniline	* 0.111					0.234	70.3*
bis(2-Chloroethoxy)methane	* 0.443					0.442	2.3*
Hexachlorobutadiene	* 0.214					0.209	3.3*
4-Chloro-3-Methylphenol	* 0.312					0.314	3.7*
2-Methylnaphthalene	* 0.884					0.871	2.4*
Hexachlorocyclopentadiene	* 0.374					0.292	28.9*
2,4,6-Trichlorophenol	* 0.439					0.396	9.2*
2,4,5-Trichlorophenol	* 0.474					0.435	6.1*
2-Chloronaphthalene	* 1.245					1.185	4.5*
2-Nitroaniline	* 0.547					0.511	6.6*
Dimethylphthalate	* 1.358					1.327	3.4*
Acenaphthylene	* 1.864					1.845	2.4*
2,6-Dinitrotoluene	* 0.343					0.330	3.0*
3-Nitroaniline	* 0.442					0.457	6.7*
Acenaphthene	* 1.120					1.082	3.1*
2,4-Dinitrophenol	* 0.225					0.179	19.9*
4-Nitrophenol	* 0.167					0.138	20.7*
Dibenzofuran	* 2.106					2.114	1.8*
2,4-Dinitrotoluene	* 0.459					0.428	5.2*
Diethylphthalate	* 1.374					1.325	3.8*
4-Chlorophenyl-phenylether	* 0.679					0.643	5.1*
Fluorene	* 1.310					1.278	4.4*
4-Nitroaniline	* 0.370					0.384	13.6*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.196					0.178	10.5*
N-Nitrosodiphenylamine (1)	* 0.312					0.354	18.1*
4-Bromophenyl-phenylether	* 0.252					0.243	3.3*
Hexachlorobenzene	* 0.305					0.299	1.5*
Pentachlorophenol	* 0.140					0.109	29.3*
Phenanthrene	* 1.155					1.112	3.3*
Anthracene	* 1.138					1.088	3.1*
Di-n-butylphthalate	* 1.442					1.401	2.4*
Fluoranthene	* 1.235					1.182	3.3*
Pyrene	* 1.123					1.108	2.0*
Butylbenzylphthalate	* 0.585					0.569	2.4*
3,3'-Dichlorobenzidine	0.396					0.420	9.6
Benzo(a)anthracene	* 1.038					1.047	2.7*
Chrysene	* 1.002					0.965	2.5*
bis(2-Ethylhexyl)phthalate	* 0.798					0.790	1.9*
Di-n-octylphthalate	* 2.135					2.057	5.7*
Benzo(b)fluoranthene	* 1.903					1.638	11.2*
Benzo(k)fluoranthene	* 1.435					1.531	5.3*
Benzo(a)pyrene	* 1.425					1.345	4.1*
Indeno(1,2,3-cd)pyrene	* 1.687					1.622	6.0*
Dibenzo(a,h)anthracene	* 1.408					1.361	6.3*
Benzo(g,h,i)perylene	* 1.355					1.312	5.3*
Nitrobenzene-d5	0.445					0.432	2.7*
2-Fluorobiphenyl	* 1.582					1.482	5.2*
Terphenyl-d14	* 0.839					0.831	1.8*
Phenol-d5	* 1.447					1.478	3.0*
2-Fluorophenol	* 1.246					1.180	6.4*
2,4,6-Tribromophenol	* 0.156					0.151	4.1*
2-Chlorophenol-d4	* 1.303					1.313	2.2*
1,2-Dichlorobenzene-d4	* 0.883					0.898	3.1*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Lab File ID: S2D2796 DFTPP Injection Date: 03/25/03

Instrument ID: S2 DFTPP Injection Time: 1037

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	39.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	48.6
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	45.3
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	25.5
365	Greater than 1.0% of mass 198	3.93
441	Present, but less than mass 443	14.1
442	40.0 - 99.9% of mass 198	82.2
443	17.0 - 23.0% of mass 442	15.6 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502H	SS0325A	S2D2797	03/25/03	1200
02	SBLK2H	MB-6052	S2D2798	03/25/03	1256
03	S2HLCS	LCS-6052	S2D2799	03/25/03	1336
04	S2HLCSD	LCSD-6052	S2D2800	03/25/03	1416
05	FTAMW-102D	B0383-02E	S2D2802	03/25/03	1535
06	FB-030703	B0383-03E	S2D2803	03/25/03	1615
07	RB-030703	B0383-04E	S2D2804	03/25/03	1655
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7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date: 03/25/03 Time: 1200

Lab File ID: S2D2797 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.492	1.498	0.050	0.4	20.0
bis(2-Chloroethyl)Ether	1.238	1.146	0.050	-7.4	100
2-Chlorophenol	1.320	1.234	0.050	-6.5	100
2-Methylphenol	1.138	1.079	0.050	-5.2	100
2,2'-oxybis(1-Chloropropane)	1.551	1.299	0.050	-16.2	100
4-Methylphenol	1.189	1.184	0.050	-0.4	100
N-Nitroso-di-n-propylamine	0.827	0.702	0.050	-15.1	100
Hexachloroethane	0.614	0.595	0.050	-3.1	100
Nitrobenzene	0.401	0.378	0.050	-5.7	100
Isophorone	0.570	0.562	0.050	-1.4	100
2-Nitrophenol	0.222	0.235	0.050	5.8	20.0
2,4-Dimethylphenol	0.308	0.327	0.050	6.2	100
2,4-Dichlorophenol	0.319	0.340	0.050	6.6	20.0
Naphthalene	1.080	0.999	0.050	-7.5	100
4-Chloroaniline	0.234	0.160	0.050	-31.6	100
bis(2-Chloroethoxy)methane	0.442	0.412	0.050	-6.8	100
Hexachlorobutadiene	0.209	0.211	0.050	1.0	20.0
4-Chloro-3-Methylphenol	0.314	0.344	0.050	9.6	20.0
2-Methylnaphthalene	0.871	0.856	0.050	-1.7	100
Hexachlorocyclopentadiene	0.292	0.144	0.050	-50.7	100
2,4,6-Trichlorophenol	0.396	0.417	0.050	5.3	100
2,4,5-Trichlorophenol	0.435	0.458	0.050	5.3	100
2-Chloronaphthalene	1.185	1.152	0.050	-2.8	100
2-Nitroaniline	0.511	0.509	0.050	-0.4	100
Dimethylphthalate	1.327	1.540	0.050	16.0	100
Acenaphthylene	1.845	1.926	0.050	4.4	100
2,6-Dinitrotoluene	0.330	0.376	0.050	13.9	100
3-Nitroaniline	0.457	0.463	0.050	1.3	100
Acenaphthene	1.082	1.154	0.050	6.6	20.0
2,4-Dinitrophenol	0.179	0.229	0.050	27.9	100
4-Nitrophenol	0.138	0.198	0.050	43.5	100
Dibenzofuran	2.114	2.260	0.050	6.9	100
2,4-Dinitrotoluene	0.428	0.522	0.050	22.0	100
Diethylphthalate	1.325	1.605	0.050	21.1	100
4-Chlorophenyl-phenylether	0.643	0.689	0.050	7.2	100
Fluorene	1.278	1.438	0.050	12.5	100
4-Nitroaniline	0.384	0.523	0.050	36.2	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: S2 Calibration Date: 03/25/03 Time: 1200

Lab File ID: S2D2797 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.178	0.180	0.050	1.1	100
N-Nitrosodiphenylamine(1)	0.354	0.318	0.050	-10.2	20.0
4-Bromophenyl-phenylether	0.243	0.242	0.050	-0.4	100
Hexachlorobenzene	0.299	0.290	0.050	-3.0	100
Pentachlorophenol	0.109	0.114	0.050	4.6	20.0
Phenanthrene	1.112	1.070	0.050	-3.8	100
Anthracene	1.088	1.031	0.050	-5.2	100
Di-n-butylphthalate	1.401	1.384	0.050	-1.2	100
Fluoranthene	1.182	1.124	0.050	-4.9	20.0
Pyrene	1.108	1.174	0.050	6.0	100
Butylbenzylphthalate	0.569	0.644	0.050	13.2	100
3,3'-Dichlorobenzidine	0.420	0.431		2.6	
Benzo(a)anthracene	1.047	1.067	0.050	1.9	100
Chrysene	0.965	0.975	0.050	1.0	100
bis(2-Ethylhexyl)phthalate	0.790	0.827	0.050	4.7	100
Di-n-octylphthalate	2.057	2.406	0.050	17.0	20.0
Benzo(b)fluoranthene	1.638	1.619	0.050	-1.2	100
Benzo(k)fluoranthene	1.531	1.701	0.050	11.1	100
Benzo(a)pyrene	1.345	1.348	0.050	0.2	20.0
Indeno(1,2,3-cd)pyrene	1.622	1.203	0.050	-25.8	100
Dibenzo(a,h)anthracene	1.361	1.057	0.050	-22.3	100
Benzo(g,h,i)perylene	1.312	0.882	0.050	-32.8	100
Nitrobenzene-d5	0.432	0.416	0.050	-3.7	100
2-Fluorobiphenyl	1.482	1.467	0.050	-1.0	100
Terphenyl-d14	0.831	0.900	0.050	8.3	100
Phenol-d5	1.478	1.464	0.050	-0.9	100
2-Fluorophenol	1.180	1.125	0.050	-4.7	100
2,4,6-Tribromophenol	0.151	0.156	0.050	3.3	100
2-Chlorophenol-d4	1.313	1.268	0.050	-3.4	100
1,2-Dichlorobenzene-d4	0.898	0.892	0.050	-0.7	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		26	104	0-127
bis(2-Chloroethyl)Ether	25		23	92	46-109
2-Chlorophenol	25		23	92	22-117
2-Methylphenol	25		23	92	40-104
2,2'-oxybis(1-Chloropro	25		23	92	10-134
4-Methylphenol	25		24	96	35-106
N-Nitroso-di-n-prop.(1)	25		22	88	44-122
Hexachloroethane	25		15	60	24-104
Nitrobenzene	25		23	92	47-112
Isophorone	25		31	124*	48-118
2-Nitrophenol	25		25	100	29-122
2,4-Dimethylphenol	25		10	40	14-109
2,4-Dichlorophenol	25		25	100	31-122
Naphthalene	25		21	84	38-117
4-Chloroaniline	25		42	168*	0-152
bis(2-Chloroethoxy)meth	25		24	96	49-112
Hexachlorobutadiene	25		14	56	28-109
4-Chloro-3-Methylphenol	25		27	108	48-117
2-Methylnaphthalene	25		17	68	43-113
Hexachlorocyclopentadie					34-103
2,4,6-Trichlorophenol	25		25	100	34-127
2,4,5-Trichlorophenol	25		25	100	32-131
2-Chloronaphthalene	25		22	88	47-116
2-Nitroaniline	25		19	76	51-120
Dimethylphthalate	25		28	112	53-124
Acenaphthylene	25		24	96	50-119
2,6-Dinitrotoluene	25		28	112	52-122
3-Nitroaniline	25		20	80	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		25	100	50-121
2,4-Dinitrophenol	25		23	92	0-144
4-Nitrophenol	25		33	132	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		29	116	52-126
Diethylphthalate	25		30	120	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		26	104	52-125
4-Nitroaniline	25		24	96	47-117
4,6-Dinitro-2-methylphe	25		22	88	3-151
N-Nitrosodiphenylamine	25		44	176*	50-150
4-Bromophenyl-phenyleth	25		25	100	51-124
Hexachlorobenzene	25		25	100	52-124
Pentachlorophenol	25		21	84	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		28	112	56-132
Fluoranthene	25		25	100	53-130
Pyrene	25		28	112	53-131
Butylbenzylphthalate	25		30	120	54-128
3,3'-Dichlorobenzidine	25		20	80	41-117
Benzo(a)anthracene	25		26	104	56-124
Chrysene	25		25	100	53-123
bis(2-Ethylhexyl)phthal	25		38	152*	56-127
Di-n-octylphthalate	25		28	112	59-138
Benzo(b)fluoranthene	25		25	100	58-126
Benzo(k)fluoranthene	25		27	108	60-124
Benzo(a)pyrene	25		25	100	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		19	76	23-152
Dibenzo(a,h)anthracene	25		20	80	60-122
Benzo(g,h,i)perylene	25		17	68	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	25	100	4	40	0-127
bis(2-Chloroethyl)Ether	25	22	88	4	40	46-109
2-Chlorophenol	25	22	88	4	40	22-117
2-Methylphenol	25	22	88	4	40	40-104
2,2'-oxybis(1-Chloropro	25	22	88	4	40	10-134
4-Methylphenol	25	23	92	4	40	35-106
N-Nitroso-di-n-prop.(1)	25	21	84	5	40	44-122
Hexachloroethane	25	13	52	14	40	24-104
Nitrobenzene	25	23	92	0	40	47-112
Isophorone	25	31	124*	0	40	48-118
2-Nitrophenol	25	24	96	4	40	29-122
2,4-Dimethylphenol	25	9	36	10	40	14-109
2,4-Dichlorophenol	25	24	96	4	40	31-122
Naphthalene	25	20	80	5	40	38-117
4-Chloroaniline	25	41	164*	2	40	0-152
bis(2-Chloroethoxy)meth	25	23	92	4	40	49-112
Hexachlorobutadiene	25	13	52	7	40	28-109
4-Chloro-3-Methylphenol	25	26	104	4	40	48-117
2-Methylnaphthalene	25	16	64	6	40	43-113
Hexachlorocyclopentadie					40	34-103
2,4,6-Trichlorophenol	25	24	96	4	40	34-127
2,4,5-Trichlorophenol	25	25	100	0	40	32-131
2-Chloronaphthalene	25	21	84	5	40	47-116
2-Nitroaniline	25	19	76	0	40	51-120
Dimethylphthalate	25	28	112	0	40	53-124
Acenaphthylene	25	24	96	0	40	50-119
2,6-Dinitrotoluene	25	28	112	0	40	52-122
3-Nitroaniline	25	20	80	0	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	24	96	4	40	50-121
2,4-Dinitrophenol	25	24	96	4	40	0-144
4-Nitrophenol	25	33	132	0	40	0-160
Dibenzofuran	25	20	80	0	40	51-122
2,4-Dinitrotoluene	25	30	120	3	40	52-126
Diethylphthalate	25	30	120	0	40	53-126
4-Chlorophenyl-phenylet	25	25	100	4	40	50-124
Fluorene	25	26	104	0	40	52-125
4-Nitroaniline	25	24	96	0	40	47-117
4,6-Dinitro-2-methylphe	25	22	88	0	40	3-151
N-Nitrosodiphenylamine	25	44	176*	0	40	50-150
4-Bromophenyl-phenyleth	25	24	96	4	40	51-124
Hexachlorobenzene	25	25	100	0	40	52-124
Pentachlorophenol	25	20	80	5	40	5-125
Phenanthrene	25	25	100	0	40	52-128
Anthracene	25	25	100	4	40	52-127
Di-n-butylphthalate	25	28	112	0	40	56-132
Fluoranthene	25	25	100	0	40	53-130
Pyrene	25	28	112	0	40	53-131
Butylbenzylphthalate	25	30	120	0	40	54-128
3,3'-Dichlorobenzidine	25	20	80	0	40	41-117
Benzo(a)anthracene	25	26	104	0	40	56-124
Chrysene	25	26	104	4	40	53-123
bis(2-Ethylhexyl)phthal	25	32	128*	17	40	56-127
Di-n-octylphthalate	25	28	112	0	40	59-138
Benzo(b)fluoranthene	25	26	104	4	40	58-126
Benzo(k)fluoranthene	25	28	112	4	40	60-124
Benzo(a)pyrene	25	26	104	4	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: S2HLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	20	80	5	40	23-152
Dibenzo(a,h)anthracene	25	20	80	0	40	60-122
Benzo(g,h,i)perylene	25	18	72	6	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 59 outside limits
Spike Recovery: 8 out of 118 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0383
SUBJECT	SVOA (AQ)		
BASED ON	8270C	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

FTAMW-102D Bis(2-ethylhexyl)phthalate

8 ug/L

$$\frac{(64556\ \text{area})(1000\ \text{ml})(40\ \text{ng})(1)}{(398224\ \text{area})(0.790)(1000\ \text{ml})(1\ \text{ml})} = 8.208\ \text{ng/mL}$$

≈ 8.0 ug/L

Data File: S2D2802.D
Report Date: 26-Mar-2003 11:07

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030325.B\S2D2802.D
Lab Smp Id: B0383-02E Client Smp ID: FTAMW-102D
Inj Date : 25-MAR-2003 15:35
Operator : JC Inst ID: s2.i
Smp Info : B0383-02E,FTAMW-102D,6052,JC,,B0383
Misc Info : 0,,,1,,,,,,,12-MAR-03,08-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030325.B\S2_8270C.m
Meth Date : 25-Mar-2003 12:49 mtl Quant Type: ISTD
Cal Date : 21-MAR-2003 10:36 Cal File: S2D2719.D
Als bottle: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub
Target Version: 4.03
Processing Host: TARGET2

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	3 2-Fluorophenol	112	4.657	4.656	(0.683)	191558	59.8622	60
$	5 Phenol-d5	99	6.261	6.271	(0.918)	291448	72.7228	73
$	9 2-Chlorophenol-d4	132	6.434	6.432	(0.943)	252998	71.0471	71
*	12 1,4-Dichlorobenzene-d4	152	6.821	6.820	(1.000)	108455	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	7.090	7.089	(1.039)	100805	41.4053	41
$	22 Nitrobenzene-d5	82	7.844	7.854	(0.854)	189678	45.1611	45
*	31 Naphthalene-d8	136	9.190	9.189	(1.000)	388948	40.0000	
$	41 2-Fluorobiphenyl	172	11.365	11.363	(0.898)	361118	42.4392	42
*	48 Acenaphthene-d10	164	12.657	12.655	(1.000)	229606	40.0000	
$	60 2,4,6-Tribromophenol	330	14.261	14.260	(0.913)	120470	82.4751	82
*	64 Phenanthrene-d10	188	15.628	15.638	(1.000)	387593	40.0000	
$	72 Terphenyl-d14	244	18.912	18.911	(0.902)	457717	55.3126	55
*	76 Chrysene-d12	240	20.958	20.978	(1.000)	398224	40.0000	
	78 bis(2-Ethylhexyl)phthalate	149	21.162	21.172	(1.010)	64556	8.20556	8

Data File: S2D2802.D
Report Date: 26-Mar-2003 11:07

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 83 Perylene-d12	264	23.617	23.638	(1.000)	253181	40.0000	

JC
3-26-03

K

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BI	AR1660BI	03/14/03	1032	6.77	22.12
23	BBLK1A	MB-6030	03/14/03	1313	6.79	22.14
24	B1ALCS	LCS-6031	03/14/03	1348	6.78	22.13
25	AR1660BJ	AR1660BJ	03/14/03	2203	6.78	22.13
26	FTAMW102D	B0383-02E	03/14/03	2313	6.78	22.13
27	FB-030703	B0383-03E	03/14/03	2348	6.77	22.13
28	RB-030703	B0383-04E	03/15/03	0024	6.78	22.13
29	AR1660BK	AR1660BK	03/15/03	0320	6.77	22.13
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BI	AR1660BI	03/14/03	1032	8.45	25.35
23	BBLK1A	MB-6030	03/14/03	1313	8.46	25.36
24	B1ALCS	LCS-6031	03/14/03	1348	8.45	25.35
25	AR1660BJ	AR1660BJ	03/14/03	2203	8.45	25.35
26	FTAMW102D	B0383-02E	03/14/03	2313	8.45	25.35
27	FB-030703	B0383-03E	03/14/03	2348	8.45	25.35
28	RB-030703	B0383-04E	03/15/03	0024	8.45	25.35
29	AR1660BK	AR1660BK	03/15/03	0320	8.45	25.35
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/14/03 Time: 1032

Lab File ID: E1D9850F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10975.000	0.01	8.0	15.0
(2)	24115.960	21705.000	0.01	10.0	15.0
(3)	14202.320	12629.000	0.01	11.1	15.0
Aroclor-1260	29455.240	26387.000	0.01	10.4	15.0
(2)	40190.280	39855.000	0.01	0.8	15.0
(3)	23147.960	20757.000	0.01	10.3	15.0
Tetrachloro-m-xylene	503358.00	484100.00	0.01	3.8	15.0
Decachlorobiphenyl	581298.00	509350.00	0.01	12.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/14/03 Time: 1032

Lab File ID: E1D9850R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	43739.000	0.01	6.9	15.0
(2)	24183.600	21862.000	0.01	9.6	15.0
(3)	20737.640	19345.000	0.01	6.7	15.0
Aroclor-1260	45409.320	42769.000	0.01	5.8	15.0
(2)	46248.440	43713.000	0.01	5.5	15.0
(3)	64584.960	64132.000	0.01	0.7	15.0
Tetrachloro-m-xylene	741526.00	722800.00	0.01	2.5	15.0
Decachlorobiphenyl	711418.00	713900.00	0.01	0.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/14/03 Time: 2203

Lab File ID: E1D9870F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10837.000	0.01	9.2	15.0
(2)	24115.960	21431.000	0.01	11.1	15.0
(3)	14202.320	12557.000	0.01	11.6	15.0
Aroclor-1260	29455.240	26201.000	0.01	11.0	15.0
(2)	40190.280	39416.000	0.01	1.9	15.0
(3)	23147.960	20410.000	0.01	11.8	15.0
Tetrachloro-m-xylene	503358.00	482850.00	0.01	4.1	15.0
Decachlorobiphenyl	581298.00	509200.00	0.01	12.4	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/14/03 Time: 2203

Lab File ID: E1D9870R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44400.000	0.01	5.4	15.0
(2)	24183.600	22286.000	0.01	7.8	15.0
(3)	20737.640	19762.000	0.01	4.7	15.0
Aroclor-1260	45409.320	43967.000	0.01	3.2	15.0
(2)	46248.440	45784.000	0.01	1.0	15.0
(3)	64584.960	66339.000	0.01	2.7	15.0
Tetrachloro-m-xylene	741526.00	739800.00	0.01	0.2	15.0
Decachlorobiphenyl	711418.00	743550.00	0.01	4.5	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/15/03 Time: 0320

Lab File ID: E1D9879F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	11933.240	10839.000	0.01	9.2	15.0
(2)	24115.960	21485.000	0.01	10.9	15.0
(3)	14202.320	12508.000	0.01	11.9	15.0
Aroclor-1260	29455.240	26085.000	0.01	11.4	15.0
(2)	40190.280	39397.000	0.01	2.0	15.0
(3)	23147.960	20389.000	0.01	11.9	15.0
Tetrachloro-m-xylene	503358.00	489350.00	0.01	2.8	15.0
Decachlorobiphenyl	581298.00	512350.00	0.01	11.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Instrument ID: E1 Calibration Date: 03/15/03 Time: 0320

Lab File ID: E1D9879R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	46962.320	44824.000	0.01	4.6	15.0
(2)	24183.600	22485.000	0.01	7.0	15.0
(3)	20737.640	20042.000	0.01	3.4	15.0
Aroclor-1260	45409.320	44578.000	0.01	1.8	15.0
(2)	46248.440	46258.000	0.01	0.0	15.0
(3)	64584.960	66920.000	0.01	3.6	15.0
Tetrachloro-m-xylene	741526.00	750650.00	0.01	1.2	15.0
Decachlorobiphenyl	711418.00	756350.00	0.01	6.3	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: MB-6030

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9852F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix Spike - Sample No.: B1ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		8.7	87	45-162
Aroclor-1260	10		9.1	91	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1A	90	94	75	86			0
02	B1ALCS	91	93	81	94			0
03	FTAMW102D	84	89	75	85			0
04	FB-030703	88	94	76	89			0
05	RB-030703	84	90	78	87			0
06								
07								
08								
09								
10								
11								
12								
13								
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21								
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23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallops Island	JOB NUMBER	B0383
SUBJECT	PCBs		
BASED ON	8082	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY / DATE

B7ALCS Aroclor-1260 9.1 ug/L

$$\frac{(283400 \text{ area})(10{,}000 \text{ ul})(1)}{(30{,}931.16 \text{ area})(1000 \text{ mL})(1 \text{ ul})} = 9.16 \text{ ug/mL}$$

$\approx$ 9.0 ug/L

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B1ALCS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0383

Matrix: (soil/water) WATER Lab Sample ID: LCS-6031

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1D9853F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/11/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/14/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	8.7	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	9.1	

Data File: E1D9853F.D
Report Date: 18-Mar-2003 14:44

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030314F.B\E1D9853F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030314R.B\E1D9853R.D
Inj Date : 14-MAR-2003 13:48
Sample Info: LCS-6031,B1ALCS,MB-6030,pcb.sub,,
Misc Info : 3,,LCS,1,,,,,,,11-MAR-03,,
Cal Date : 17-MAR-2003 08:48
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030314F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030314R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (ml)
Vi	1.000	Volume injected (uL)

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/L)	Conc#2 (ug/L)	Target Range	Ratio
Tetrachloro-m-xylene	6.777	8.450	9122	13803	0.18	0.19		100.00
Decachlorobiphenyl	22.127	25.350	9460	13311	0.16	0.19		100.00
Aroclor-1016	11.987	12.787	10633	42386	8.9	9.0	80.00- 120.00	100.00
	10.447	13.177	20742	21296	8.6	8.8	178.22- 218.22	195.07
	10.820	14.523	12165	20868	8.6	10	95.40- 135.40	114.41
			Average of Peak Amounts =		8.7	9.3		
Aroclor-1260	16.787	18.573	25750	42515	8.7	9.4	80.00- 120.00	100.00
	18.557	19.510	38891	43206	9.7	9.3	131.03- 171.03	151.03
	19.277	21.207	20379	63585	8.8	9.8	58.16- 98.16	79.14
			Average of Peak Amounts =		9.1	9.5		

BMF
3/18/03

TETRA TECH NUS

PHIL-17118

TO: G. GLENN **DATE:** MAY 5, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0397

SAMPLES: 5/ Aqueous /

FTAMW-55D	FTAMW-61I
FTAMW-56D	TB-031003
FTAMW-58S	

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0397, consists of four aqueous environmental samples (designated FTAMW-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 10, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (aqeuous)
Acetone*	47 ug/L	470 ug/L
Methylene Chloride*	60 ug/L	600 ug/L
2-Butanone*	2 ug/L	10 ug/L

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The action levels apply to the aqueous environmental samples. It should be noted that field QC blanks do not receive qualification based on laboratory blank contamination.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone methylene chloride, and 2-butanone in the samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The initial calibration relative response factors (RRFs) for acetone were less than the QC limit of 0.05. Positive results are considered biased low (L), however, data qualification for most samples was based upon more significant issues (blank qualification) as noted above.
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

SEMIVOLATILE FRACTION

- The LCS/LCSD exhibited low recoveries for hexachlorocyclopentadiene. The associated non-detected results were qualified biased low (UL).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

PCB FRACTION

- All samples for PCB analysis were extracted 8 days outside the 7 day holding time. The associated non-detected results were qualified as estimated (UJ).

NOTES

Samples FTAMW-56D, FTAMW-58S and FTAMW-61I were reanalyzed at 3X and 4X dilutions for cis-1,2-dichloroethene and 1,1,1-trichloroethane. The original concentrations for these compounds exceeded the calibration range of the instrument. The results for cis-1,2-dichloroethene and 1,1,1-trichloroethane only were reported from the diluted analyses.

Bis(2-ethylhexyl)phthalate was detected in the method blank for the semivolatile fraction. No positive results were detected for bis(2-ethylhexyl)phthalate in the environmental samples, therefore, no qualification was necessary.

The aqueous LCS for the semivolatile fraction exhibited high recoveries for N-nitroso-di-n-propylamine, isophorone, 4-chloroaniline, N-nitrosodiphenylamine, and bis(2-ethylhexyl)phthalate. No action was taken because there were no positive results for these compounds.

No other problems were noted during the review.

EXECUTIVE SUMMARY

Laboratory Performance: The initial calibration RRF was less than the lower QC limit for one compound in the volatile fraction. Bis(2-ethylhexyl)phthalate was detected in the semivolatile method blank. One recovery was less than the lower QC limit for the semivolatile LCS. The PCB samples were extracted outside holding times.

Other Factors Affecting Data Quality: Acetone, methylene chloride, and 2-butanone were detected in the trip blank.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-55D			FTAMW-56D			FTAMW-58S			FTAMW-61I			TB-031003		
Laboratory ID:	B0397-04A			B0397-02A			B0397-03A			B0397-05A			B0397-01A		
Sample Date:	03/10/03			03/10/03			03/10/03			03/10/03			03/10/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	11			210			340			240			1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		2			1			2			1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethane	3			64			20			56			1	U	
1,1-Dichloroethene	1	U		31			21			31			1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	6			29			40			65			1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1			360			67			460			1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	3			14			2			3			1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U		1	U		1	U	
2-Butanone	4	B	B	5	U		5	U		5	U		2	J	P
2-Hexanone	5	U		5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U		5	U		5	U	
Acetone	19	B	B	6	B	B	4	B	B	8	B	B	47	L	C
Benzene	1	U		14			12			28			1	U	
Bromodichloromethane	1	U		1	U		1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U		1	U		1	U	
Chloromethane	1	U		1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U	
Cyclohexane	1	U		1	U		4			7			1	U	
Dibromochloromethane	1	U		1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U		1	U		1	U	
Ethylbenzene	1			4			15			22			1	U	
Isopropylbenzene	1	U		3			2			5			1	U	
Methyl Acetate	1	U		1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U		1	U		1	U		1	U	
Methylcyclohexane	1	U		7			6			9			1	U	
Methylene Chloride	2	U		3	B	B	2	U		2	U		60		
Styrene	1	U		1	U		1	U		1	U		1	U	
Tetrachloroethene	1	U		1			1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FTAMW-55D**			**FTAMW-56D**			**FTAMW-58S**			**FTAMW-61I**			**TB-031003**		
Laboratory ID:	**B0397-04A**			**B0397-02A**			**B0397-03A**			**B0397-05A**			**B0397-01A**		
Sample Date:	**03/10/03**			**03/10/03**			**03/10/03**			**03/10/03**			**03/10/03**		
Duplicate:															
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
Toluene	1	U		1	U		1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U		1	U		1	U	
Vinyl Chloride	1	U		2			1	U		6			1	U	
m,p-xylene	2			40			35			58			1	U	
o-xylene	1	U		2			28			7			1	U	
Xylene (Total)	2			42			63			66			1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\OV_B0397.DBF data retrieved on: 05/02/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-55D			FTAMW-56D			FTAMW-58S			FTAMW-61I		
Laboratory ID:	B0397-04E			B0397-02E			B0397-03E			B0397-05E		
Sample Date:	03/10/03			03/10/03			03/10/03			03/10/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U		5	U	
2,4-Dichlorophenol	5	U		5	U		5	U		5	U	
2,4-Dimethylphenol	4	J	P	5	U		5	U		5	U	
2,4-Dinitrophenol	20	U		20	U		20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U		5	U	
2-Chloronaphthalene	5	U		5	U		5	U		5	U	
2-Chlorophenol	5	U		5	U		5	U		5	U	
2-Methylnaphthalene	5	U		15			8			35		
2-Methylphenol	2	J	P	5	U		5	U		5	U	
2-Nitroaniline	20	U		20	U		20	U		20	U	
2-Nitrophenol	5	U		5	U		5	U		5	U	
3,3-Dichlorobenzidine	5	U		5	U		5	U		5	U	
3-Nitroaniline	20	U		20	U		20	U		20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U		5	U	
4-Chloroaniline	5	U		5	U		5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U		5	U	
4-Methylphenol	88			5	U		5	U		5	U	
4-Nitroaniline	20	U		20	U		20	U		20	U	
4-Nitrophenol	20	U		20	U		20	U		20	U	
Acenaphthene	5	U		5	U		5	U		5	U	
Acenaphthylene	5	U		5	U		5	U		5	U	
Anthracene	5	U		5	U		5	U		5	U	
Benz(a)anthracene	5	U		5	U		5	U		5	U	
Benzo(a)pyrene	5	U		5	U		5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U		5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U		5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U		5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U		5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U		5	U		5	U	
Butylbenzylphthalate	5	U		5	U		5	U		5	U	
Chrysene	5	U		5	U		5	U		5	U	
Di-n-butylphthalate	5	U		5	U		5	U		5	U	
Di-n-octylphthalate	5	U		5	U		5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U		5	U		5	U	
Dibenzofuran	5	U		5	U		5	U		5	U	
Diethylphthalate	5	U		2	J	P	2	J	P	4	J	P
Dimethylphthalate	5	U		5	U		5	U		5	U	
Fluoranthene	5	U		5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-55D			FTAMW-56D			FTAMW-58S			FTAMW-61I		
Laboratory ID:	B0397-04E			B0397-02E			B0397-03E			B0397-05E		
Sample Date:	03/10/03			03/10/03			03/10/03			03/10/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L		
Fluorene	5	U		5	U		5	U		5	U	
Hexachlorobenzene	5	U		5	U		5	U		5	U	
Hexachlorobutadiene	5	U		5	U		5	U		5	U	
Hexachlorocyclopentadiene	5	UL	E	5	UL	E	5	UL	E	5	UL	E
Hexachloroethane	5	U		5	U		5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U		5	U		5	U	
Isophorone	5	U		5	U		5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U		5	U	
Naphthalene	5	U		40			21			66		
Nitrobenzene	5	U		5	U		5	U		5	U	
Pentachlorophenol	20	U		20	U		20	U		2	J	P
Phenanthrene	5	U		5	U		5	U		5	U	
Phenol	7			5	U		5	U		5	U	
Pyrene	5	U		5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND DATA
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\OS_B0397.DBF data retrieved on: 05/05/03

DATA SUMMARY OF PCB RESULTS
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-55D			FTAMW-56D			FTAMW-58S			FTAMW-61I		
Laboratory ID:	B0397-04ERE			B0397-02ERE			B0397-03ERE			B0397-05ERE		
Sample Date:	03/10/03			03/10/03			03/10/03			03/10/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/L			ug/L			ug/L			ug/L		
Aroclor-1016	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1221	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1232	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1242	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1248	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1254	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H
Aroclor-1260	1	UJ	H	1	UJ	H	1	UJ	H	1	UJ	H

DATA SUMMARY OF PCB RESULTS
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\PCBRE_B0397.DBF data retrieved on: 05/05/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2910

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	19	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	3	
78-93-3	2-Butanone	4	J
156-59-2	cis-1,2-Dichloroethene	1	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	11	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2910

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
----------	m,p-Xylene		2	
95-47-6	o-Xylene		1	U
1330-20-7	Xylene (Total)		2	
100-42-5	Styrene		1	U
75-25-2	Bromoform		1	U
98-82-8	Isopropylbenzene		1	U
79-34-5	1,1,2,2-Tetrachloroethane		1	U
108-67-8	1,3,5-Trimethylbenzene		3	
95-63-6	1,2,4-Trimethylbenzene		6	
541-73-1	1,3-Dichlorobenzene		1	U
106-46-7	1,4-Dichlorobenzene		1	U
95-50-1	1,2-Dichlorobenzene		1	U
96-12-8	1,2-Dibromo-3-chloropropane		1	U
120-82-1	1,2,4-Trichlorobenzene		1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor		1	U
79-20-9	Methyl Acetate		1	U
110-81-7	Cyclohexane		1	U
108-87-2	Methylcyclohexane		1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2910

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	564-04-5	3-PENTANONE, 2,2-DIMETHYL-	8.61	6	NJ
2.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.53	9	NJ
3.		UNKNOWN	14.27	8	J
4.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.45	5	NJ
5.		UNKNOWN	14.70	8	J
6.	6682-71-9	1H-INDENE, 2,3-DIHYDRO-4,7-D	15.57	5	NJ
7.		UNKNOWN	15.94	5	J
8.	91-57-6	NAPHTHALENE, 2-METHYL-	16.15	6	NJ
9.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	11	NJ
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2907

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	2	
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	31	
67-64-1	Acetone	6	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	3	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	64	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	380	E
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	250	E
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	14	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	4	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2907

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	40	
95-47-6	o-Xylene	2	
1330-20-7	Xylene (Total)	42	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	3	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	14	
95-63-6	1,2,4-Trimethylbenzene	29	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	2	
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	7	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2907

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	78-78-4	BUTANE, 2-METHYL-	2.22	13	NJ
2.	109-66-0	PENTANE	2.45	8	NJ
3.	79-29-8	BUTANE, 2,3-DIMETHYL-	3.37	23	NJ
4.	96-14-0	PENTANE, 3-METHYL-	3.61	6	NJ
5.		UNKNOWN	4.43	6	J
6.		UNKNOWN	4.50	12	J
7.	565-59-3	PENTANE, 2,3-DIMETHYL-	5.25	17	NJ
8.	594-82-1	BUTANE, 2,2,3,3-TETRAMETHYL-	5.64	29	NJ
9.	565-75-3	PENTANE, 2,3,4-TRIMETHYL-	6.95	11	NJ
10.	560-21-4	PENTANE, 2,3,3-TRIMETHYL-	7.09	26	NJ
11.	103-65-1	BENZENE, PROPYL-	11.37	5	NJ
12.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.83	37	NJ
13.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.53	48	NJ
14.	496-11-7	INDANE	12.77	8	NJ
15.	1074-43-7	BENZENE, 1-METHYL-3-PROPYL-	12.82	6	NJ
16.	934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	12.89	8	NJ
17.	1074-55-1	BENZENE, 1-METHYL-4-PROPYL-	13.10	6	NJ
18.		UNKNOWN	13.20	5	J
19.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.23	9	NJ
20.	934-74-7	BENZENE, 1-ETHYL-3,5-DIMETHY	13.32	8	NJ
21.	27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	13.43	10	NJ
22.	527-84-4	BENZENE, 1-METHYL-2-(1-METHY	13.65	6	NJ
23.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.76	6	NJ
24.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.82	10	NJ
25.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	14.27	22	NJ
26.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.45	8	NJ
27.	4706-90-5	BENZENE, 1,3-DIMETHYL-5-(1-M	14.70	6	NJ
28.	91-20-3	NAPHTHALENE	14.94	42	NJ
29.	91-57-6	NAPHTHALENE, 2-METHYL-	16.14	11	NJ
30.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	11	NJ

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2907

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	569-41-5	NAPHTHALENE, 1,8-DIMETHYL-	17.37	8	NJ
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56DDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5061

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	3	U
74-87-3	Chloromethane	3	U
75-01-4	Vinyl Chloride	3	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	3	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	34	D
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	3	U
75-09-2	Methylene Chloride	4	DJ
156-60-5	trans-1,2-Dichloroethene	3	U
1634-04-4	Methyl tert-butyl ether	3	U
75-34-3	1,1-Dichloroethane	60	D
78-93-3	2-Butanone	15	U
156-59-2	cis-1,2-Dichloroethene	360	D
67-66-3	Chloroform	3	U
71-55-6	1,1,1-Trichloroethane	210	D
56-23-5	Carbon Tetrachloride	3	U
107-06-2	1,2-Dichloroethane	3	U
71-43-2	Benzene	14	D
79-01-6	Trichloroethene	3	U
78-87-5	1,2-Dichloropropane	3	U
75-27-4	Bromodichloromethane	3	U
10061-01-5	cis-1,3-Dichloropropene	3	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	3	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	3	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	3	U
106-93-4	1,2-Dibromoethane	3	U
108-90-7	Chlorobenzene	3	U
100-41-4	Ethylbenzene	4	D

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56DDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5061

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	38	D
95-47-6	o-Xylene	3	U
1330-20-7	Xylene (Total)	38	D
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
98-82-8	Isopropylbenzene	3	D
79-34-5	1,1,2,2-Tetrachloroethane	3	U
108-67-8	1,3,5-Trimethylbenzene	13	D
95-63-6	1,2,4-Trimethylbenzene	27	D
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	3	U
96-12-8	1,2-Dibromo-3-chloropropane	3	U
120-82-1	1,2,4-Trichlorobenzene	3	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	3	U
79-20-9	Methyl Acetate	3	U
110-81-7	Cyclohexane	3	U
108-87-2	Methylcyclohexane	6	D

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-56DDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5061

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.40	16	JD
2.	622-96-8	BENZENE, 1-ETHYL-4-METHYL-	11.58	32	NJD
3.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.30	38	NJD
4.	91-20-3	NAPHTHALENE	14.97	21	NJD
5.					
6.					
7.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2908

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	21	
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	20	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	67	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	360	E
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	12	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	15	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2908

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	35	
95-47-6	o-Xylene	28	
1330-20-7	Xylene (Total)	63	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	2	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	2	
95-63-6	1,2,4-Trimethylbenzene	40	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	4	
108-87-2	Methylcyclohexane	6	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2908

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	2.21	14	J
2.		UNKNOWN	3.40	21	J
3.		UNKNOWN	4.50	13	J
4.		UNKNOWN	5.64	23	J
5.		BRANCHED ALKANE	6.96	7	J
6.		BRANCHED ALKANE	7.09	13	J
7.		UNKNOWN	7.36	5	J
8.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.48	31	NJ
9.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.83	29	NJ
10.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.53	34	NJ
11.		UNKNOWN	12.77	7	J
12.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.23	6	NJ
13.	535-77-3	BENZENE, 1-METHYL-3-(1-METHY	13.32	5	NJ
14.	27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	13.42	6	NJ
15.		UNKNOWN	14.27	12	J
16.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.45	5	NJ
17.	91-57-6	NAPHTHALENE, 2-METHYL-	16.14	5	NJ
18.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	5	NJ
19.		UNKNOWN	19.07	6	J
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5062

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	3	U
74-87-3	Chloromethane	3	U
75-01-4	Vinyl Chloride	3	U
74-83-9	Bromomethane	3	U
75-00-3	Chloroethane	3	U
75-69-4	Trichlorofluoromethane	3	U
75-35-4	1,1-Dichloroethene	29	D
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	3	U
75-09-2	Methylene Chloride	6	U
156-60-5	trans-1,2-Dichloroethene	3	U
1634-04-4	Methyl tert-butyl ether	3	U
75-34-3	1,1-Dichloroethane	20	D
78-93-3	2-Butanone	15	U
156-59-2	cis-1,2-Dichloroethene	66	D
67-66-3	Chloroform	3	U
71-55-6	1,1,1-Trichloroethane	340	D
56-23-5	Carbon Tetrachloride	3	U
107-06-2	1,2-Dichloroethane	3	U
71-43-2	Benzene	12	D
79-01-6	Trichloroethene	3	U
78-87-5	1,2-Dichloropropane	3	U
75-27-4	Bromodichloromethane	3	U
10061-01-5	cis-1,3-Dichloropropene	3	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	3	U
10061-02-6	trans-1,3-Dichloropropene	3	U
79-00-5	1,1,2-Trichloroethane	3	U
127-18-4	Tetrachloroethene	3	U
591-78-6	2-Hexanone	15	U
124-48-1	Dibromochloromethane	3	U
106-93-4	1,2-Dibromoethane	3	U
108-90-7	Chlorobenzene	3	U
100-41-4	Ethylbenzene	15	D

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5062

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	35	D
95-47-6	o-Xylene	28	D
1330-20-7	Xylene (Total)	64	D
100-42-5	Styrene	3	U
75-25-2	Bromoform	3	U
98-82-8	Isopropylbenzene	3	U
79-34-5	1,1,2,2-Tetrachloroethane	3	U
108-67-8	1,3,5-Trimethylbenzene	3	U
95-63-6	1,2,4-Trimethylbenzene	40	D
541-73-1	1,3-Dichlorobenzene	3	U
106-46-7	1,4-Dichlorobenzene	3	U
95-50-1	1,2-Dichlorobenzene	3	U
96-12-8	1,2-Dibromo-3-chloropropane	3	U
120-82-1	1,2,4-Trichlorobenzene	3	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	3	U
79-20-9	Methyl Acetate	3	U
110-81-7	Cyclohexane	9	D
108-87-2	Methylcyclohexane	4	D

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-58SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5062

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 3.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	620-14-4	BENZENE, 1-ETHYL-3-METHYL-	11.24	28	NJD
2.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.59	26	NJD
3.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.31	27	NJD
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2911

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	6	
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	31	
67-64-1	Acetone	8	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	56	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	460	E
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	260	E
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	28	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	22	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2911

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	58	
95-47-6	o-Xylene	7	
1330-20-7	Xylene (Total)	66	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	5	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	3	
95-63-6	1,2,4-Trimethylbenzene	65	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	2	
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	7	
108-87-2	Methylcyclohexane	9	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2911

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.22	27	J
2.		STRAIGHT-CHAIN ALKANE	2.45	16	J
3.		BRANCHED ALKANE	4.43	10	J
4.		UNKNOWN	5.25	25	J
5.		UNKNOWN	5.64	47	J
6.		BRANCHED ALKANE	6.97	14	J
7.		BRANCHED ALKANE	7.10	30	J
8.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.49	45	NJ
9.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.84	47	NJ
10.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.54	65	NJ
11.		UNKNOWN	12.76	15	J
12.	1074-43-7	BENZENE, 1-METHYL-3-PROPYL-	12.81	9	NJ
13.	1074-43-7	BENZENE, 1-METHYL-3-PROPYL-	13.10	8	NJ
14.		UNKNOWN	13.21	9	J
15.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.24	13	NJ
16.	2870-04-4	BENZENE, 2-ETHYL-1,3-DIMETHY	13.32	13	NJ
17.	27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	13.43	15	NJ
18.	527-84-4	BENZENE, 1-METHYL-2-(1-METHY	13.65	9	NJ
19.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	13.77	10	NJ
20.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.82	14	NJ
21.	824-22-6	1H-INDENE, 2,3-DIHYDRO-4-MET	14.11	5	NJ
22.		UNKNOWN	14.28	34	J
23.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.46	14	NJ
24.		UNKNOWN	14.69	7	J
25.	4912-92-9	1H-INDENE, 2,3-DIHYDRO-1,1-D	14.81	6	NJ
26.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	15.58	7	NJ
27.	91-57-6	NAPHTHALENE, 2-METHYL-	16.13	28	NJ
28.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	20	NJ
29.	571-58-4	NAPHTHALENE, 1,4-DIMETHYL-	17.36	5	NJ
30.		UNKNOWN	19.39	6	J

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61IDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5063

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 4.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4	U
74-87-3	Chloromethane	4	U
75-01-4	Vinyl Chloride	5	D
74-83-9	Bromomethane	4	U
75-00-3	Chloroethane	4	U
75-69-4	Trichlorofluoromethane	4	U
75-35-4	1,1-Dichloroethene	37	D
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	4	U
75-09-2	Methylene Chloride	6	DJ
156-60-5	trans-1,2-Dichloroethene	4	U
1634-04-4	Methyl tert-butyl ether	4	U
75-34-3	1,1-Dichloroethane	56	D
78-93-3	2-Butanone	20	U
156-59-2	cis-1,2-Dichloroethene	460	D
67-66-3	Chloroform	4	U
71-55-6	1,1,1-Trichloroethane	240	D
56-23-5	Carbon Tetrachloride	4	U
107-06-2	1,2-Dichloroethane	4	U
71-43-2	Benzene	29	D
79-01-6	Trichloroethene	4	U
78-87-5	1,2-Dichloropropane	4	U
75-27-4	Bromodichloromethane	4	U
10061-01-5	cis-1,3-Dichloropropene	4	U
108-10-1	4-Methyl-2-pentanone	20	U
108-88-3	Toluene	4	U
10061-02-6	trans-1,3-Dichloropropene	4	U
79-00-5	1,1,2-Trichloroethane	4	U
127-18-4	Tetrachloroethene	4	U
591-78-6	2-Hexanone	20	U
124-48-1	Dibromochloromethane	4	U
106-93-4	1,2-Dibromoethane	4	U
108-90-7	Chlorobenzene	4	U
100-41-4	Ethylbenzene	22	D

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61IDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5063

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 4.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	57	D
95-47-6	o-Xylene	7	D
1330-20-7	Xylene (Total)	64	D
100-42-5	Styrene	4	U
75-25-2	Bromoform	4	U
98-82-8	Isopropylbenzene	5	D
79-34-5	1,1,2,2-Tetrachloroethane	4	U
108-67-8	1,3,5-Trimethylbenzene	4	U
95-63-6	1,2,4-Trimethylbenzene	66	D
541-73-1	1,3-Dichlorobenzene	4	U
106-46-7	1,4-Dichlorobenzene	4	U
95-50-1	1,2-Dichlorobenzene	4	U
96-12-8	1,2-Dibromo-3-chloropropane	4	U
120-82-1	1,2,4-Trichlorobenzene	4	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	4	U
79-20-9	Methyl Acetate	4	U
110-81-7	Cyclohexane	4	U
108-87-2	Methylcyclohexane	7	D

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-61IDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05ADL

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5063

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 4.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	7.39	20	JD
2.		UNKNOWN	11.24	24	JD
3.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.59	46	NJD
4.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.31	59	NJD
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2909

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	47	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	60	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	J
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2909

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031003

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2909

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2998

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	7	
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	2	J
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	88	
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	4	J
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2998

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2998

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.57	14	J
2.		UNKNOWN	10.22	210	J
3.		UNKNOWN	10.49	43	J
4.		UNKNOWN	10.64	30	J
5.		UNKNOWN	11.88	38	J
6.		UNKNOWN	12.15	27	J
7.	69-72-7	SALICYLIC ACID	12.44	36	NJ
8.		UNKNOWN	13.11	18	J
9.	50-85-1	2-HYDROXY-4-METHYLBENZOIC AC	13.65	31	NJ
10.		UNKNOWN	14.20	43	J
11.		UNKNOWN	14.78	28	J
12.		UNKNOWN	15.07	23	J
13.		UNKNOWN	15.15	15	J
14.		UNKNOWN	15.23	14	J
15.		UNKNOWN	15.58	16	J
16.		UNKNOWN	15.65	28	J
17.		UNKNOWN	16.93	16	J
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2996

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	40	
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	15	
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2996

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	2	J
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2996

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	8.27	20	NJ
2.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.51	24	NJ
3.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.94	28	NJ
4.		UNKNOWN	9.32	17	J
5.		UNKNOWN	10.11	32	J
6.		UNKNOWN	10.44	19	J
7.	3333-13-9	BENZENE, 1-METHYL-4-(2-PROPE	10.77	16	NJ
8.	90-12-0	NAPHTHALENE, 1-METHYL-	12.92	17	NJ
9.		UNKNOWN	13.10	20	J
10.		UNKNOWN	14.00	11	J
11.	581-40-8	NAPHTHALENE, 2,3-DIMETHYL-	14.15	19	NJ
12.		UNKNOWN	14.56	11	J
13.		UNKNOWN	14.73	16	J
14.		UNKNOWN	15.11	16	J
15.		UNKNOWN	15.42	12	J
16.		UNKNOWN	15.59	31	J
17.	93-09-4	2-NAPHTHALENECARBOXYLIC ACID	16.94	20	NJ
18.		UNKNOWN	17.97	13	J
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20.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2997

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	21	
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	8	
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2997

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	2	J
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2997

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	620-14-4	BENZENE, 1-ETHYL-3-METHYL-	7.99	12	NJ
2.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	8.27	16	NJ
3.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.52	33	NJ
4.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.94	21	NJ
5.		UNKNOWN	9.29	22	J
6.	1074-43-7	BENZENE, 1-METHYL-3-PROPYL-	9.33	19	NJ
7.		UNKNOWN	9.40	24	J
8.		UNKNOWN	9.77	23	J
9.		UNKNOWN	10.11	130	J
10.		UNKNOWN	10.17	37	J
11.		UNKNOWN	10.45	35	J
12.		UNKNOWN	10.77	11	J
13.		UNKNOWN	12.34	8	J
14.	90-12-0	NAPHTHALENE, 1-METHYL-	12.92	10	NJ
15.	575-41-7	NAPHTHALENE, 1,3-DIMETHYL-	14.15	8	NJ
16.					
17.					
18.					
19.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2999

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	66	
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	35	
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2999

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	4	J
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	2	J
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2999

Level: (low/med) LOW Date Received: 03/11/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	8.27	28	NJ
2.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.51	51	NJ
3.	95-36-3	1,2,4-TRIMETHYLBENZENE	8.94	41	NJ
4.		UNKNOWN	9.33	33	J
5.		UNKNOWN	10.09	23	J
6.	767-99-7	BENZENE, (1-METHYL-1-PROPENY	10.77	22	NJ
7.	118-90-1	BENZOIC ACID, 2-METHYL-	11.84	12	NJ
8.		UNKNOWN	12.03	13	J
9.	90-12-0	NAPHTHALENE, 1-METHYL-	12.92	28	NJ
10.		UNKNOWN	13.10	14	J
11.		UNKNOWN	13.66	20	J
12.	582-16-1	NAPHTHALENE, 2,7-DIMETHYL-	14.01	18	NJ
13.	571-58-4	NAPHTHALENE, 1,4-DIMETHYL-	14.16	24	NJ
14.	582-16-1	NAPHTHALENE, 2,7-DIMETHYL-	14.21	18	NJ
15.		UNKNOWN	14.78	17	J
16.		UNKNOWN	15.64	23	J
17.	93-09-4	2-NAPHTHALENECARBOXYLIC ACID	16.98	23	NJ
18.					
19.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0602F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-55DRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-04ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0261F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0600F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000060

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-56DRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-02ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0259F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000061

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0601F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-58SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-03ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0260F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000063

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0603F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/12/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-61IRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: B0397-05ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0262F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/11/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/01/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9658	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0397
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 548	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl 1,2,4 TMB 1,3,5 TMB TCL VOCs MTBE Low Level	40 ml VOA Vial HCl TCL VOCs	1 Liter Amber Glass TCL SVOC	1 Liter Amber Glass TCL PCB	500 ml poly HNO3 TAL Metals	500 ml poly unpres Cyanide, Sulfide, Nitrate, Sulfate	500 ml poly HNO3 Dissolved Metals	COMMENTS
TB-031003	3/10/03 1030		X	X			01	2	2	2						Trip Blank
FTAMW-56D	3/10/03 1210		X	X			07		2	2	1	1	1	1		
FTAMW-58S	3/10/03 1230		X	X			03		2	2	1	1	1	1		
FTAMW-55D	3/10/03 1525		X	X			04		2	2	1	1	1	1		
FTAMW-61I	3/10/03 1550		X	X			05		2	2	1	1	1	1		
FTAMW-56DF	3/10/03 1210		X	X			06								1	
FTAMW-58SF	3/10/03 1230		X	X			07								1	
FTAMW-55DF	3/10/03 1525		X	X			08								1	
FTAMW-61IF	3/10/03 1550		X	X			09								1	
	/															
	/															
	/															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	3/10/03 1700	[signature]	3-11-03 0900	Trip Blank provided by Laboratory Shipped via Airbill No 8256 5464 5212	20
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 10, 2003, and received at Mitkem on March 11, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of target analytes, the following samples were re-analyzed at dilution: FTAMW-56D (3x), FTAMW-58S (3x) and FTAMW-61I (4x). Samples FTAMW-58S and FTAMW-61I were re-analyzed at dilution outside of holding time. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: high recovery of n-nitroso-di-n-propylamine, isophorone, 4-chloroaniline, n-nitrosodiphenylamine and bis (2-ethylhexyl) phthalate and low recovery of hexachlorocyclopentadiene in both the matrix spike and matrix spike duplicate.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of no surrogate recovery in method blank BBLK1C and associated samples. Method blank BBLK1C and associated samples were semivolatile sample extracts that were exchanged into hexane and analyzed for PCBs.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to login error, samples FTAMW-56D, FTAMW-58S, FTAMW-55D and FTAMW-61I were logged in for aqueous semivolatile analysis and soil PCB analysis. The samples were extracted for semivolatile analysis. The samples were not extracted for PCBs as they were logged in as soil samples, therefore a longer holding time. The semivolatile extracts were exchanged into hexane and analyzed for PCB. The samples were extracted outside of holding time for PCB and designated as "RE" samples. Both sets of data are reported. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-56D. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-56D. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.296	0.242	0.255	0.246	0.256	0.259	8.2
*	Chloromethane	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
	Vinyl Chloride	0.449	0.346	0.362	0.357	0.365	0.376	11.1
	Bromomethane	0.290	0.233	0.232	0.216	0.188	0.232	16.0
	Chloroethane	0.176	0.147	0.209	0.159	0.140	0.166	16.4
	Trichlorofluoromethane	0.355	0.309	0.360	0.344	0.341	0.342	5.8
	1,1-Dichloroethene	0.278	0.252	0.294	0.278	0.274	0.275	5.5
	Acetone	0.073	0.055	0.054	0.049	0.046	0.055	18.6
	Carbon Disulfide	1.029	0.531	0.995	0.547	0.784	0.777	30.5
	Methylene Chloride	0.326	0.316	0.320	0.329	0.331	0.324	2.0
	trans-1,2-Dichloroethene	0.292	0.286	0.306	0.321	0.322	0.305	5.3
	Methyl tert-butyl ether	0.759	0.652	0.604	0.645	0.632	0.658	9.0
*	1,1-Dichloroethane	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
	2-Butanone	0.140	0.118	0.103	0.113	0.106	0.116	12.5
	cis-1,2-Dichloroethene	0.308	0.293	0.312	0.328	0.331	0.314	4.9
	Chloroform	0.460	0.434	0.463	0.480	0.474	0.462	3.8
	1,1,1-Trichloroethane	0.305	0.298	0.315	0.321	0.318	0.311	3.1
	Carbon Tetrachloride	0.243	0.239	0.264	0.280	0.279	0.261	7.4
	1,2-Dichloroethane	0.306	0.294	0.295	0.305	0.295	0.299	2.0
	Benzene	1.079	1.026	1.063	1.118	1.110	1.079	3.5
	Trichloroethene	0.276	0.261	0.278	0.294	0.300	0.282	5.5
	1,2-Dichloropropane	0.284	0.276	0.283	0.297	0.289	0.286	2.8
	Bromodichloromethane	0.323	0.316	0.335	0.353	0.358	0.337	5.5
	cis-1,3-Dichloropropene	0.371	0.382	0.426	0.441	0.453	0.415	8.7
	4-Methyl-2-pentanone	0.260	0.230	0.211	0.229	0.236	0.233	7.6
	Toluene	1.134	1.074	1.127	1.170	1.168	1.135	3.5
	trans-1,3-Dichloropropene	0.288	0.314	0.360	0.367	0.381	0.342	11.5
	1,1,2-Trichloroethane	0.228	0.229	0.227	0.244	0.249	0.235	4.5
	Tetrachloroethene	0.315	0.302	0.313	0.335	0.338	0.321	4.8
	2-Hexanone	0.239	0.235	0.193	0.227	0.218	0.222	8.2
	Dibromochloromethane	0.322	0.334	0.360	0.383	0.389	0.358	8.2
	1,2-Dibromoethane	0.358	0.360	0.350	0.383	0.381	0.366	4.1
*	Chlorobenzene	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
	Ethylbenzene	0.536	0.520	0.523	0.564	0.566	0.542	4.0
	m,p-Xylene	0.669	0.643	0.655	0.702	0.677	0.669	3.4
	o-Xylene	0.648	0.636	0.646	0.688	0.678	0.659	3.5
	Xylene (Total)	0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix Spike - Sample No.: S2DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		27	108	0-127
bis(2-Chloroethyl)Ether	25		27	108	46-109
2-Chlorophenol	25		26	104	22-117
2-Methylphenol	25		23	92	40-104
2,2'-oxybis(1-Chloropro	25		28	112	10-134
4-Methylphenol	25		25	100	35-106
N-Nitroso-di-n-prop.(1)	25		32	128*	44-122
Hexachloroethane	25		17	68	24-104
Nitrobenzene	25		27	108	47-112
Isophorone	25		37	148*	48-118
2-Nitrophenol	25		26	104	29-122
2,4-Dimethylphenol	25		5	20	14-109
2,4-Dichlorophenol	25		25	100	31-122
Naphthalene	25		24	96	38-117
4-Chloroaniline	25		78	312*	0-152
bis(2-Chloroethoxy)meth	25		28	112	49-112
Hexachlorobutadiene	25		16	64	28-109
4-Chloro-3-Methylphenol	25		26	104	48-117
2-Methylnaphthalene	25		18	72	43-113
Hexachlorocyclopentadie	25		3	12*	34-103
2,4,6-Trichlorophenol	25		26	104	34-127
2,4,5-Trichlorophenol	25		27	108	32-131
2-Chloronaphthalene	25		24	96	47-116
2-Nitroaniline	25		21	84	51-120
Dimethylphthalate	25		27	108	53-124
Acenaphthylene	25		26	104	50-119
2,6-Dinitrotoluene	25		27	108	52-122
3-Nitroaniline	25		18	72	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000084

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix Spike - Sample No.: S2DLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		26	104	50-121
2,4-Dinitrophenol	25		26	104	0-144
4-Nitrophenol	25		26	104	0-160
Dibenzofuran	25		21	84	51-122
2,4-Dinitrotoluene	25		26	104	52-126
Diethylphthalate	25		28	112	53-126
4-Chlorophenyl-phenylet	25		28	112	50-124
Fluorene	25		28	112	52-125
4-Nitroaniline	25		17	68	47-117
4,6-Dinitro-2-methylphe	25		26	104	3-151
N-Nitrosodiphenylamine	25		55	220*	50-150
4-Bromophenyl-phenyleth	25		28	112	51-124
Hexachlorobenzene	25		28	112	52-124
Pentachlorophenol	25		27	108	5-125
Phenanthrene	25		28	112	52-128
Anthracene	25		26	104	52-127
Di-n-butylphthalate	25		30	120	56-132
Fluoranthene	25		27	108	53-130
Pyrene	25		27	108	53-131
Butylbenzylphthalate	25		27	108	54-128
3,3'-Dichlorobenzidine	25		16	64	41-117
Benzo(a)anthracene	25		26	104	56-124
Chrysene	25		26	104	53-123
bis(2-Ethylhexyl)phthal	25		38	152*	56-127
Di-n-octylphthalate	25		31	124	59-138
Benzo(b)fluoranthene	25		30	120	58-126
Benzo(k)fluoranthene	25		30	120	60-124
Benzo(a)pyrene	25		28	112	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000085

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix Spike - Sample No.: S2DLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	26	104	4	40	0-127
bis(2-Chloroethyl)Ether	25	26	104	4	40	46-109
2-Chlorophenol	25	25	100	4	40	22-117
2-Methylphenol	25	22	88	4	40	40-104
2,2'-oxybis(1-Chloropro	25	26	104	7	40	10-134
4-Methylphenol	25	24	96	4	40	35-106
N-Nitroso-di-n-prop.(1)	25	31	124*	3	40	44-122
Hexachloroethane	25	15	60	12	40	24-104
Nitrobenzene	25	26	104	4	40	47-112
Isophorone	25	37	148*	0	40	48-118
2-Nitrophenol	25	25	100	4	40	29-122
2,4-Dimethylphenol	25	5	20	0	40	14-109
2,4-Dichlorophenol	25	25	100	0	40	31-122
Naphthalene	25	23	92	4	40	38-117
4-Chloroaniline	25	86	344*	10	40	0-152
bis(2-Chloroethoxy)meth	25	28	112	0	40	49-112
Hexachlorobutadiene	25	14	56	13	40	28-109
4-Chloro-3-Methylphenol	25	26	104	0	40	48-117
2-Methylnaphthalene	25	18	72	0	40	43-113
Hexachlorocyclopentadie	25	2	8*	40	40	34-103
2,4,6-Trichlorophenol	25	26	104	0	40	34-127
2,4,5-Trichlorophenol	25	27	108	0	40	32-131
2-Chloronaphthalene	25	24	96	0	40	47-116
2-Nitroaniline	25	21	84	0	40	51-120
Dimethylphthalate	25	27	108	0	40	53-124
Acenaphthylene	25	25	100	4	40	50-119
2,6-Dinitrotoluene	25	27	108	0	40	52-122
3-Nitroaniline	25	20	80	10	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000087

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix Spike - Sample No.: S2DLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	26	104	0	40	50-121
2,4-Dinitrophenol	25	26	104	0	40	0-144
4-Nitrophenol	25	26	104	0	40	0-160
Dibenzofuran	25	21	84	0	40	51-122
2,4-Dinitrotoluene	25	27	108	4	40	52-126
Diethylphthalate	25	28	112	0	40	53-126
4-Chlorophenyl-phenylet	25	28	112	0	40	50-124
Fluorene	25	27	108	4	40	52-125
4-Nitroaniline	25	18	72	6	40	47-117
4,6-Dinitro-2-methylphe	25	27	108	4	40	3-151
N-Nitrosodiphenylamine	25	55	220*	0	40	50-150
4-Bromophenyl-phenyleth	25	28	112	0	40	51-124
Hexachlorobenzene	25	28	112	0	40	52-124
Pentachlorophenol	25	27	108	0	40	5-125
Phenanthrene	25	28	112	0	40	52-128
Anthracene	25	26	104	0	40	52-127
Di-n-butylphthalate	25	30	120	0	40	56-132
Fluoranthene	25	28	112	4	40	53-130
Pyrene	25	27	108	0	40	53-131
Butylbenzylphthalate	25	27	108	0	40	54-128
3,3'-Dichlorobenzidine	25	17	68	6	40	41-117
Benzo(a)anthracene	25	25	100	4	40	56-124
Chrysene	25	25	100	4	40	53-123
bis(2-Ethylhexyl)phthal	25	32	128*	17	40	56-127
Di-n-octylphthalate	25	31	124	0	40	59-138
Benzo(b)fluoranthene	25	30	120	0	40	58-126
Benzo(k)fluoranthene	25	30	120	0	40	60-124
Benzo(a)pyrene	25	28	112	0	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000088

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix: (soil/water) WATER Lab Sample ID: MB-6052

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2993

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/07/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	7	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

TETRA TECH NUS

PHIL- 17119

TO: G. GLENN **DATE:** MAY 7, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0397

SAMPLES: 8/Aqueous/

FTAMW-55D	FTAMW-61I	FTAMW-58SF
FTAMW-56D	FTAMW-55DF	FTAMW-61IF
FTAMW-58S	FTAMW-56DF	

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0397 consists of 8 aqueous environmental samples (designated FTAMW-). All samples were analyzed for TAL metals. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 10, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B and 7470A.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, interference check solutions, and detection limits.

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Aluminum	276.8 ug/L	1384 ug/L
Antimony	6.7 ug/L	33.5 ug/L
Barium	5.498 ug/L	27.49 ug/L
Beryllium	0.6 ug/L	3 ug/L
Calcium	262 ug/L	1310 ug/L

Analyte	Maximum Concentration	Action Level
Chromium	0.7 ug/L	3.5 ug/L
Cobalt	1.5 ug/L	7.5 ug/L
Copper	17.71 ug/L	88.55 ug/L
Iron	159.4 ug/L	797 ug/L
Magnesium	321.8 ug/L	1609 ug/L
Manganese	1.7 ug/L	8.5 ug/L
Nickel	1.9 ug/L	9.5 ug/L
Potassium	202.3 ug/L	1011.5 ug/L
Silver	6.921 ug/L	34.605 ug/L
Sodium	175.5 ug/L	877.5 ug/L
Thallium	3.6 ug/L	18 ug/L
Vanadium	1.4 ug/L	7 ug/L
Zinc	13.76 ug/L	68.8 ug/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. Positive results for aluminum, antimony, barium, chromium, cobalt, copper, iron, nickel, potassium, silver, thallium, vanadium, and zinc in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for calcium, magnesium, manganese, and sodium because all concentrations exceeded the associated blank action levels. No qualifications were required for beryllium because there were no positive detections.

- Cobalt, copper, nickel, silver, thallium, and vanadium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. For copper, nickel, silver, thallium, and vanadium in sample FTAMW-61I, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high, but qualification was superseded by the qualifier (B) for blank contamination.

- Antimony, arsenic, barium, cadmium, chromium, lead, and manganese exhibited negative concentrations with absolute values greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For cadmium and lead in sample FTAMW-61I, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL). For positive antimony results in sample FTAMW-61I, the sample concentration was greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the

expected interference, such a result was qualified as biased low, however, qualification was superceded by the qualifier (B) for blank contamination.

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as biased low (L/UL). Several contaminants were detected in the laboratory blanks. Associated sample results were qualified (B) to indicate artifacts of blank contamination. ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-55D			FTAMW-55DF			FTAMW-56D			FTAMW-56DF			FTAMW-58S		
Laboratory ID:	B0397-04C			B0397-08C			B0397-02C			B0397-06C			B0397-03C		
Sample Date:	03/10/03			03/10/03			03/10/03			03/10/03			03/10/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L			ug/L		
Aluminum	442	B	A	175	B	A	40.7	B	A	79.3	B	A	248	B	A
Antimony	4.1	B	A	3	U		6	B	A	3.5	B	A	7.7	B	A
Arsenic	5.1			5			3	U		3	U		3	U	
Barium	20.2	B	A	14.7	B	A	17.6	B	A	14.5	B	A	16.8	B	A
Beryllium	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	
Calcium	2450			2310			9960			10400			9770		
Chromium	1.8	B	A	1.3	B	A	2	B	A	1.3	B	A	2.9	B	A
Cobalt	3.7	B	A	3.2	B	A	2.5	B	A	2.5	B	A	2.3	B	A
Copper	12.5	B	A	7	B	A	8.8	B	A	5.9	B	A	15	B	A
Iron	6060			6060			223	B	A	222	B	A	220	B	A
Lead	5.2			4	U		4	U		4	U		4.1		
Magnesium	2520			2390			12300			12800			5770		
Manganese	258			257			1990			2080			563		
Mercury	0.1	U		0.1	U		0.1	U		0.1	U		0.1	U	
Nickel	4.2	B	A	4.8	B	A	1.7	B	A	1.6	B	A	2.8	B	A
Potassium	1020			971	B	A	1730			1790			1820		
Selenium	9	U		9	U		9	U		9	U		9	U	
Silver	5.2	B	A	3.5	B	A	6.2	B	A	3.4	B	A	5.9	B	A
Sodium	5160			5150			4550			4530			4000		
Thallium	3	U		3	U		3.8	B	A	4.5	B	A	3.3	B	A
Vanadium	2.6	B	A	1.9	B	A	4.3	B	A	4.1	B	A	3.6	B	A
Zinc	11.9	B	A	9.7	B	A	14.4	B	A	14.6	B	A	13.4	B	A

DATA SUMMARY OF INORGANIC RESULTS
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTAMW-58SF			FTAMW-61I			FTAMW-61IF		
Laboratory ID:	B0397-07C			B0397-05C			B0397-09C		
Sample Date:	03/10/03			03/10/03			03/10/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L		
Aluminum	66.9	B	A	281	B	A	38.7	B	A
Antimony	5	B	A	3.5	B	A	5.2	B	A
Arsenic	3	U		13.7			8.6		
Barium	10.1	B	A	26.9	B	A	21.2	B	A
Beryllium	0.5	U		0.5	U		0.5	U	
Cadmium	1.1			0.7	UL	K	0.7	U	
Calcium	10400			9560			9540		
Chromium	1.6	B	A	2	B	A	1.6	B	A
Cobalt	0.95	B	A	6.5	B	A	5.8	B	A
Copper	6.1	B	A	5.4	B	A	4	U	
Iron	68.2	B	A	21100			17600		
Lead	4	U		4	UL	K	4.5		
Magnesium	6080			9390			9320		
Manganese	612			4990			4900		
Mercury	0.1	U		0.1	U		0.1	U	
Nickel	1.8	B	A	3.4	B	A	2.8	B	A
Potassium	1720			1640			1590		
Selenium	9	U		9	U		9	U	
Silver	3.6	B	A	4.7	B	A	3.4	B	A
Sodium	4040			4310			4260		
Thallium	3	U		7.6	B	A	7.5	B	A
Vanadium	2.2	B	A	3.8	B	A	3.1	B	A
Zinc	7.9	B	A	9.7	B	A	7	U	

DATA SUMMARY OF INORGANIC RESULTS
SDG B0397 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\M_B0397.DBF data retrieved on: 05/07/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55D

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397__

Matrix (soil/water): WATER_ Lab Sample ID: B0397-04C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	442		*	P
7440-36-0	Antimony	4.1	B	*	P
7440-38-2	Arsenic	5.1	B		P
7440-39-3	Barium	20.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2450			P
7440-47-3	Chromium	1.8	B		P
7440-48-4	Cobalt	3.7	B		P
7440-50-8	Copper	12.5	B		P
7439-89-6	Iron	6060			P
7439-92-1	Lead	5.2	B		P
7439-95-4	Magnesium	2520			P
7439-96-5	Manganese	258			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.2	B		P
7440-09-7	Potassium	1020			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	5.2	B		P
7440-23-5	Sodium	5160			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.6	B		P
7440-66-6	Zinc	11.9	B		P
	Cyanide				NR

pw 5/21/03

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55DF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix (soil/water): WATER Lab Sample ID: B0397-08C

Level (low/med): MED Date Received: 03/11/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	175	B	*	P
7440-36-0	Antimony	3.0	U	*	P
7440-38-2	Arsenic	5.0	B		P
7440-39-3	Barium	14.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2310			P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	7.0	B		P
7439-89-6	Iron	6060			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2390			P
7439-96-5	Manganese	257			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.8	B		P
7440-09-7	Potassium	971	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.5	B		P
7440-23-5	Sodium	5150			P
7440-28-0	Thallium	3.0	U	*	P
7440-62-2	Vanadium	1.9	B	DMC 3/25/03	P
7440-66-6	Zinc	9.7	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56D

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397___

Matrix (soil/water): WATER_ Lab Sample ID: B0397-02C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.7	B	*	P
7440-36-0	Antimony	6.0	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	17.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9960			P
7440-47-3	Chromium	2.0	B		P
7440-48-4	Cobalt	2.5	B		P
7440-50-8	Copper	8.8	B		P
7439-89-6	Iron	223			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	1990			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	B		P
7440-09-7	Potassium	1730			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	6.2	B		P
7440-23-5	Sodium	4550			P
7440-28-0	Thallium	3.8	B	*2W 3/12/03	P
7440-62-2	Vanadium	4.3	B		P
7440-66-6	Zinc	14.4	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-56DF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397___

Matrix (soil/water): WATER_ Lab Sample ID: B0397-06C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	79.3	B	*	P
7440-36-0	Antimony	3.5	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	10400			P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	2.5	B		P
7440-50-8	Copper	5.9	B		P
7439-89-6	Iron	222			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	12800			P
7439-96-5	Manganese	2080			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.6	B		P
7440-09-7	Potassium	1790			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.4	B		P
7440-23-5	Sodium	4530			P
7440-28-0	Thallium	4.5	B	* pw 3/27/03	P
7440-62-2	Vanadium	4.1	B		P
7440-66-6	Zinc	14.6	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0397

Matrix (soil/water): WATER Lab Sample ID: B0397-03C

Level (low/med): MED Date Received: 03/11/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	248		*	P
7440-36-0	Antimony	7.7	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9770			P
7440-47-3	Chromium	2.9	B		P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	15.0	B		P
7439-89-6	Iron	220			P
7439-92-1	Lead	4.1	B		P
7439-95-4	Magnesium	5770			P
7439-96-5	Manganese	563			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	1820			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	5.9	B		P
7440-23-5	Sodium	4000			P
7440-28-0	Thallium	3.3	B	* JW 3/24/03	P
7440-62-2	Vanadium	3.6	B		P
7440-66-6	Zinc	13.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-58SF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397___

Matrix (soil/water): WATER_ Lab Sample ID: B0397-07C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.9	B	*	P
7440-36-0	Antimony	5.0	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	10.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	1.1	B		P
7440-70-2	Calcium	10400			P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	0.95	B		P
7440-50-8	Copper	6.1	B		P
7439-89-6	Iron	68.2	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6080			P
7439-96-5	Manganese	612			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	B		P
7440-09-7	Potassium	1720			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.6	B		P
7440-23-5	Sodium	4040			P
7440-28-0	Thallium	3.0	U	*2K 3/25/03	P
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	7.9	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61I

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397__

Matrix (soil/water): WATER_ Lab Sample ID: B0397-05C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	281		*	P
7440-36-0	Antimony	3.5	B	*	P
7440-38-2	Arsenic	13.7	B		P
7440-39-3	Barium	26.9	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9560			P
7440-47-3	Chromium	2.0	B		P
7440-48-4	Cobalt	6.5	B		P
7440-50-8	Copper	5.4	B		P
7439-89-6	Iron	21100			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	9390			P
7439-96-5	Manganese	4990			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	B		P
7440-09-7	Potassium	1640			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	4.7	B		P
7440-23-5	Sodium	4310			P
7440-28-0	Thallium	7.6	B	DRC 3/12/03	P
7440-62-2	Vanadium	3.8	B		P
7440-66-6	Zinc	9.7	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-61IF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397___

Matrix (soil/water): WATER_ Lab Sample ID: B0397-09C_____

Level (low/med): MED____ Date Received: 03/11/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	38.7	B	*	P
7440-36-0	Antimony	5.2	B	*	P
7440-38-2	Arsenic	8.6	B		P
7440-39-3	Barium	21.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9540			P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	5.8	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	17600			P
7439-92-1	Lead	4.5	B		P
7439-95-4	Magnesium	9320			P
7439-96-5	Manganese	4900			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	1590			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.4	B		P
7440-23-5	Sodium	4260			P
7440-28-0	Thallium	7.5	B	*	P
7440-62-2	Vanadium	3.1	B		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

JMC 3/25/13

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0397
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 548	

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl 1,2,4 TMB 1,3,5 TMB TCL VOC, MTBE low level	40 ml VOA vial HCl TAL VOC	1 Liter Amber glass TCL SVOC	1 Liter Amber glass TCL PCB	500 ml poly HNO3 TAL Metals	500 ml poly unpres Cyanide, Sulfate, Nitrate, Sulfide	500 ml poly HNO3 Dissolved Metals	COMMENTS
TB-031003	3/10/03 1030		X	X			01	2	2	2						Trip Blank
FTAMW-56D	3/10/03 1210		X	X			07		2	2	1	1	1	1		
FTAMW-58S	3/10/03 1230		X	X			03		2	2	1	1	1	1		
FTAMW-55D	3/10/03 1525		X	X			04		2	2	1	1	1	1		
FTAMW-61I	3/10/03 1550		X	X			05		2	2	1	1	1	1		
FTAMW-56DF	3/10/03 1210		X	X			06								1	
FTAMW-58SF	3/10/03 1230		X	X			07								1	
FTAMW-55DF	3/10/03 1525		X	X			08								1	
FTAMW-61IF	3/10/03 1550		X	X			09								1	
	/															
	/															
	/															

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	3/10/03 1700	[signature]	3-11-03 0900	Trip Blank provided by Laboratory Shipped via Airbill NO 8256 5464 5212	20
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 10, 2003, and received at Mitkem on March 11, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of target analytes, the following samples were re-analyzed at dilution: FTAMW-56D (3x), FTAMW-58S (3x) and FTAMW-61I (4x). Samples FTAMW-58S and FTAMW-61I were re-analyzed at dilution outside of holding time. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: high recovery of n-nitroso-di-n-propylamine, isophorone, 4-chloroaniline, n-nitrosodiphenylamine and bis (2-ethylhexyl) phthalate and low recovery of hexachlorocyclopentadiene in both the matrix spike and matrix spike duplicate.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of no surrogate recovery in method blank BBLK1C and associated samples. Method blank BBLK1C and associated samples were semivolatile sample extracts that were exchanged into hexane and analyzed for PCBs.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to login error, samples FTAMW-56D, FTAMW-58S, FTAMW-55D and FTAMW-61I were logged in for aqueous semivolatile analysis and soil PCB analysis. The samples were extracted for semivolatile analysis. The samples were not extracted for PCBs as they were logged in as soil samples, therefore a longer holding time. The semivolatile extracts were exchanged into hexane and analyzed for PCB. The samples were extracted outside of holding time for PCB and designated as "RE" samples. Both sets of data are reported. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-56D. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-56D. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	193.1	B	216.2		276.751 1384		P
Antimony	4.9	B	3.5	B	4.8	B	33.5 6.7	B	4.598	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	5.0	B	4.3	B	4.9	B	4.0	U	5.498 27.49	B	P
Beryllium	0.6 3	B	0.5	U	0.5	U	0.5	U	0.511	B	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	262.063 1310	B	P
Chromium	3.5 0.7	B	0.6	U	0.6	U	0.6	U	0.600	U	P
Cobalt	7.5 1.5	B	1.2	B	1.3	B	1.1	B	1.016	B	P
Copper	6.7	B	4.0	U	4.2	B	4.0	U	17.714 88.57	B	P
Iron	26.0	U	26.0	U	84.3	B	102.3	B	159.390 796.95	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	-8.7	B	8.0	U	195.0	B	210.5	B	321.780 1609	B	P
Manganese	1.4	B	1.1	B	1.7	B	8.5 1.7	B	1.165	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel	1.8	B	1.8	B	9.5 1.9	B	1.7	B	1.888	B	P
Potassium	1012 202.3	B	115.4	B	78.0	U	78.0	U	139.894	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.4	B	2.0	U	2.0	U	2.0	U	6.921 34.6	B	P
Sodium	83.0	U	175.5 878	B	83.0	U	83.0	U	83.000	U	P
Thallium	18 3.6	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	7 1.4	B	1.2	B	1.6	B	1.2	B	0.785	B	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	13.757 68.8	B	P
Cyanide											

000109

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0397_

ICP ID Number: OPTIMA_1A____ ICS Source: HIGH_PURITY__

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	IDL
Aluminum	500000	500000	508393	513532.3	102.7	527718	533553.6	106.7	17
Antimony		600	-12.7	631.0	105.2	-19.6	652.5	108.8	3
Arsenic		100	-3.1	91.0	91.0	-4.4	97.7	97.7	3
Barium		500		497.2	99.4	-7.6	507.7	101.5	4
Beryllium		500		478.0	95.6		493.1	98.6	.5
Cadmium		1000	-2.3	887.6	88.8	-2.8	913.0	91.3	.1
Calcium	500000	500000	525269	520496.0	104.1	541915	543282.7	108.7	240
Chromium		500	-0.7	475.8	95.2	-1.2	490.4	98.1	.6
Cobalt		500	4.2	477.3	95.5	3.5	488.9	97.8	.9
Copper		500	7.1	531.8	106.4		533.6	106.7	4
Iron	200000	200000	181404	182799.2	91.4	187130	188747.5	94.4	26
Lead		500	-25.1	425.8	85.2	-32.7	435.3	87.1	4
Magnesium	500000	500000	499012	501820.0	100.4	515100	518646.6	103.7	8
Manganese		500	-2.3	487.7	97.5	-1.1	503.6	100.7	.8
Mercury									
Nickel		1000	18.2	931.3	93.1	18.7	951.8	95.2	.8
Potassium		25000	268.8	26311.8	105.2		25755.7	103.0	78
Selenium		500		508.6	101.7		521.8	104.4	9
Silver		200	7.1	215.2	107.6	5	216.8	108.4	2
Sodium		25000	172.8	26011.9	104.0		26197.0	104.8	83
Thallium		100	19.7	108.7	108.7	18.9	113.6	113.6	3
Vanadium		500	5.1	485.2	97.0	3	497.8	99.6	.7
Zinc		1000		919.3	91.9		937.9	93.8	7

FTAMW - GI

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	FTAMW-611	3.5		IRON	200000	-19.6	21069	-2.06	L	na
Arsenic	3	FTAMW-611	13.7		IRON	200000	-4.4	21069	-0.46	na	na
Barium	4	FTAMW-611	26.9		IRON	200000	-7.6	21069	-0.80	na	na
Cadmium	0.7	FTAMW-611		U	IRON	200000	-2.8	21069	-0.29	na	UL
Chromium	0.6	FTAMW-611	2		IRON	200000	-1.2	21069	-0.13	na	na
Cobalt	0.9	FTAMW-611	6.5		IRON	200000	4.2	21069	0.44	na	na
Copper	4	FTAMW-611	5.4		IRON	200000	7.1	21069	0.75	K	na
Lead	4	FTAMW-611		U	IRON	200000	-32.7	21069	-3.44	na	UL
Manganese	0.8	FTAMW-611	4990		IRON	200000	-2.3	21069	-0.24	na	na
Nickel	0.8	FTAMW-611	3.4		IRON	200000	18.7	21069	1.97	K	na
Silver	2	FTAMW-611	4.7		IRON	200000	7.1	21069	0.75	K	na
Thallium	3	FTAMW-611	7.6		IRON	200000	19.7	21069	2.08	K	na
Vanadium	0.7	FTAMW-611	3.8		IRON	200000	5.1	21069	0.54	K	na

(B)
(B)
(B)

5/6/10

TETRA TECH NUS

PHIL- 17120

TO: G. GLENN **DATE:** MAY 8, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOC, CHLORIDE, NITRATE, NITRITE, AND SULFATE
FIRE TRAINING AREA – NASA WALLOPS ISLAND, VIRGINIA
SDG B0397

SAMPLES: 4/Aqueous/

FTAMW-55D
FTAMW-56D
FTAMW-58S
FTAMW-61I

OVERVIEW

The sample set for the Fire Training Area – NASA Wallops Island, Virginia, SDG B0397 consists of 4 aqueous environmental samples (designated FTAMW-). All samples were analyzed for Total Organic Carbon (TOC), chloride, nitrate, nitrite, and sulfate. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 10, 2003. TOC samples were analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island. Chloride, nitrate, nitrite, and sulfate were analyzed by STL Connecticut of Shelton, Connecticut.

TOC analyses were conducted using EPA Method 415.1. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA Method 300.0.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

MINOR PROBLEMS

- The nitrate and nitrite samples were analyzed one day outside the 48 hour holding time. The results and detection limits for nitrate and nitrite were qualified estimated (J/UJ).

NOTES

The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Sulfate	0.276 mg/L	1.38 mg/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. No qualifications were required for sulfate because all concentrations exceeded the associated blank action levels.

The TOC data were acceptable as reported by the laboratory.

EXECUTIVE SUMMARY

Laboratory Performance: Sulfate was detected in a laboratory blank. Nitrate and nitrite fractions were analyzed outside holding times.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOTAL ORGANIC CARBON RESULTS
SDG B0397 - AQEUOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FTAMW-55D**			**FTAMW-56D**			**FTAMW-58S**			**FTAMW-61I**		
Laboratory ID:	**B0397-04B**			**B0397-02B**			**B0397-03B**			**B0397-05B**		
Sample Date:	**03/10/03**			**03/10/03**			**03/10/03**			**03/10/03**		
Duplicate:												
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/L**			**mg/L**			**mg/L**			**mg/L**		
Total Organic Carbon	7.6			6	U		6	U		6.7		
Data Qualifiers:												
U -- Value is a non-detected result as reported by the laboratory.												
Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\TOC_B0397.DBF data retrieved on: 05/08/03												

DATA SUMMARY OF CHLORIDE, NITRATE, NITRITE, AND SULFATE RESULTS
SDG B0397 - AQUEOUS SAMPLE
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FTAMW-55D**			**FTAMW-56D**			**FTAMW-58S**			**FTAMW-61I**		
Laboratory ID:	**203209-003**			**203209-001**			**203209-002**			**203209-004**		
Sample Date:	**03/10/03**			**03/10/03**			**03/10/03**			**03/10/03**		
Duplicate:												
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/L**			**mg/L**			**mg/L**			**mg/L**		
Chloride	3.5			5.3			4.6			4.2		
Nitrate	0.25	J	H	0.041	J	H	0.049	J	H	0.043	J	H
Nitrite	0.1	UJ	H	0.1	UJ	H	0.1	UJ	H	0.1	UJ	H
Sulfate	9.1			7.6			4.2			4		

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0397\SUB_B0397.DBF data retrieved on: 05/08/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

Mitkem Corporation

Date: *08-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-56D
Lab ID: B0397-02

Project: Wallops Island
Collection Date: 03/10/03 12:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *08-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-58S
Lab ID: B0397-03

Project: Wallops Island
Collection Date: 03/10/03 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *08-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-55D
Lab ID: B0397-04

Project: Wallops Island
Collection Date: 03/10/03 15:25

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	7.6		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

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Mitkem Corporation

Date: *08-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-61I
Lab ID: B0397-05

Project: Wallops Island
Collection Date: 03/10/03 15:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	6.7		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203209

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

FTAMW-50D

Customer Sample ID: B0397-02D
Date Sampled.....: 03/10/2003
Time Sampled.....: 12:10
Sample Matrix.....: Water

Laboratory Sample ID: 203209-1
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	5.3			0.15	1.0	1	mg/L	15179		03/13/03 1250	ddm
	Nitrate as N (NO3-N)	0.041	B		0.002	0.10	1	mg/L	15179		03/13/03 1250	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1250	ddm
	Sulfate	7.6			0.012	1.0	1	mg/L	15179		03/13/03 1250	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203209

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

FTAMW-585

Customer Sample ID: B0397-03D
Date Sampled.....: 03/10/2003
Time Sampled.....: 12:30
Sample Matrix.....: Water

Laboratory Sample ID: 203209-2
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.6			0.15	1.0	1	mg/L	15179		03/13/03 1330	ddm
	Nitrate as N (NO3-N)	0.049	B		0.002	0.10	1	mg/L	15179		03/13/03 1330	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1330	ddm
	Sulfate	4.2			0.012	1.0	1	mg/L	15179		03/13/03 1330	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203209

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

FTAMW-55D

Customer Sample ID: B0397-04D
Date Sampled.....: 03/10/2003
Time Sampled.....: 15:25
Sample Matrix.....: Water

Laboratory Sample ID: 203209-3
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.5			0.15	1.0	1	mg/L	15179		03/13/03 1344	ddm
	Nitrate as N (NO3-N)	0.25			0.002	0.10	1	mg/L	15179		03/13/03 1344	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1344	ddm
	Sulfate	9.1			0.012	1.0	1	mg/L	15179		03/13/03 1344	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203209

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

FTAMW-61I

Customer Sample ID: B0397-05D
Date Sampled.....: 03/10/2003
Time Sampled.....: 15:50
Sample Matrix.....: Water

Laboratory Sample ID: 203209-4
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.2			0.15	1.0	1	mg/L	15179		03/13/03 1357	ddm
	Nitrate as N (NO3-N)	0.043	B		0.002	0.10	1	mg/L	15179		03/13/03 1357	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1357	ddm
	Sulfate	4.0			0.012	1.0	1	mg/L	15179		03/13/03 1357	ddm

* In Description = Dry Wgt.

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0397
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 548	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl 1,2,4 TMB 1,3,5 TMB TCL Volatiles + MTBE Low Level	40 ml VOA Vial HCl TCL Volatiles	1 Liter Amber Glass TCL SVOC	1 Liter Amber Glass TCL PCB Semi Poly HPAH's	Semi Poly Inorganics Explosives Nitrates Sulfates Semi Poly HPAH's Dissolved Metals	COMMENTS
TB-031003	3/10/03 1030		X	X			01	2	2	2				Trip Blank
FTAMW-56D	3/10/03 1210		X	X			02		2	2	1	1	1	1	
FTAMW-58S	3/10/03 1230		X	X			03		2	2	1	1	1	1	
FTAMW-55D	3/10/03 1525		X	X			04		2	2	1	1	1	1	
FTAMW-61I	3/10/03 1550		X	X			05		2	2	1	1	1	1	
FTAMW-56DF	3/10/03 1210		X	X			06							1	
FTAMW-58SF	3/10/03 1230		X	X			07							1	
FTAMW-55DF	3/10/03 1525		X	X			08							1	
FTAMW-61IF	3/10/03 1550		X	X			09							1	
	/														
	/														
	/														

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	3/10/03 1700		3-11-03 0900	Trip Blank provided by Laboratory Shipped via Airbill NO 8256 5464 5212	20
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 10, 2003, and received at Mitkem on March 11, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: due to high concentration of target analytes, the following samples were re-analyzed at dilution: FTAMW-56D (3x), FTAMW-58S (3x) and FTAMW-61I (4x). Samples FTAMW-58S and FTAMW-61I were re-analyzed at dilution outside of holding time. No other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: high recovery of n-nitroso-di-n-propylamine, isophorone, 4-chloroaniline, n-nitrosodiphenylamine and bis (2-ethylhexyl) phthalate and low recovery of hexachlorocyclopentadiene in both the matrix spike and matrix spike duplicate.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of no surrogate recovery in method blank BBLK1C and associated samples. Method blank BBLK1C and associated samples were semivolatile sample extracts that were exchanged into hexane and analyzed for PCBs.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to login error, samples FTAMW-56D, FTAMW-58S, FTAMW-55D and FTAMW-61I were logged in for aqueous semivolatile analysis and soil PCB analysis. The samples were extracted for semivolatile analysis. The samples were not extracted for PCBs as they were logged in as soil samples, therefore a longer holding time. The semivolatile extracts were exchanged into hexane and analyzed for PCB. The samples were extracted outside of holding time for PCB and designated as "RE" samples. Both sets of data are reported. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-56D. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-56D. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

SEVERN TRENT STL

STL Report : 203209
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. The samples were received at STL out of holding time for nitrate and nitrite. Client was contacted and authorized STL to continue with the analysis.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A Cascella for
Jeffrey C. Curran
Laboratory Manager

March 21, 2003
Date

QUALITY CONTROL RESULTS

Job Number.: 203209 — Report Date.: 03/21/2003

CUSTOMER: MITKEM — PROJECT: NITRATE SULFATE — ATTN: Paul Senecal

Test Method.....: 300.0 — Batch.....: 15179 — Analyst...: ddm
Method Description.: Ion Chromatography Analysis — Equipment Code....: LACHET 3 — Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
LCS	15179-032	W03ALCS004	mg/L	5.27300		5.00000		105		%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	4.80900		5.00000		96		%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.00300 U								03/13/2003	1237
MD	203209-1		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	1.82600		2.00000	0.00300 U	91			75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	2.31700		2.50000		93		%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.00300 U								03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	2.49900		2.50000		100		%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.00300 U								03/13/2003	1652

Test Method.....: 300.0 — Batch.....: 15179 — Analyst...: ddm
Method Description.: Ion Chromatography Analysis — Equipment Code....: LACHET 3 — Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15179-002	W03CWRK009	mg/L	100.00000		100.00000						03/11/2003	1747
STD	15179-003	W03CWRK010	mg/L	60.00000		60.00000						03/11/2003	1800
STD	15179-004	W03CWRK011	mg/L	20.00000		20.00000						03/11/2003	1813
STD	15179-005	W03CWRK012	mg/L	8.00000		8.00000						03/11/2003	1827
STD	15179-006	W03CWRK013	mg/L	2.00000		2.00000						03/11/2003	1840
STD	15179-007	W03CWRK014	mg/L	1.00000		1.00000						03/11/2003	1854
ICV	15179-009	W03AWRK035	mg/L	51.70900		50.00000		103			90-110	03/11/2003	1921
ICB	15179-010		mg/L	0.01200 U								03/11/2003	1934
CCV	15179-011	W03AWRK035	mg/L	51.16100		50.00000		102		%	90-110	03/11/2003	1947
CCB	15179-012		mg/L	0.30600 B								03/11/2003	2001
MS	15179-013	W03ASPK001	mg/L	19.43900		20.00000	0.01200 U	97			75-125	03/11/2003	2014
LCS	15179-014	W03ALCS004	mg/L	8.47200		9.21000		92		%	85-115	03/11/2003	2028
LCS	15179-015	W03ALCS004	mg/L	8.86800		9.21000		96		%	85-115	03/11/2003	2041
MB	15179-016		mg/L	0.01200 U								03/11/2003	2054
MD	203195-1		mg/L	8.41800			8.46100	0.5			20.0	03/11/2003	2121
MS	203195-1	W03ASPK001	mg/L	28.07900		20.00000	8.46100	98			75-125	03/11/2003	2135
CCV	15179-022	W03AWRK035	mg/L	51.71000		50.00000		103		%	90-110	03/11/2003	2215
CCB	15179-023		mg/L	0.01200 U								03/11/2003	2228
CCV	15179-024	W03AWRK035	mg/L	50.93600		50.00000		102		%	90-110	03/12/2003	1507
CCB	15179-025		mg/L	0.01200 U								03/12/2003	1520
CCV	15179-028	W03AWRK035	mg/L	50.41600		50.00000		101		%	90-110	03/12/2003	1600
CCB	15179-029		mg/L	0.01200 U								03/12/2003	1614
CCV	15179-030	W03CWRK018	mg/L	50.14300		50.00000		100		%	90-110	03/13/2003	1143
CCB	15179-031		mg/L	0.01200 U								03/13/2003	1156
LCS	15179-032	W03ALCS004	mg/L	8.16700		9.21000		89		%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	8.49600		9.21000		92		%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.27600 B								03/13/2003	1237
MD	203209-1		mg/L	7.57800			7.64300	0.9			20.0	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	26.64400		20.00000	7.64300	95			75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	49.89600		50.00000		100		%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.01200 U								03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	49.89000		50.00000		100		%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.01200 U								03/13/2003	1652

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000016

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 28, 2003**

FROM: **SETH C. STAFFEN** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOA/SVOA/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG: B0412

SAMPLES: 7/Aqueous

FTAMW-103D	FTAMW-103I	FTAMW-103S	FTAMW-104S
FTAMW-55S	FTAMW-DUP13	TB-031103	

OVERVIEW

The sample set for CTO 848, SDG B0412, NASA Wallops Island consists of six (6) aqueous environmental samples and one (1) trip blank. All samples were analyzed for Target Compound List (TCL) volatile organic compounds, TCL semivolatile organic compounds and TCL PCBs except TB-031103 was analyzed for volatile organic compounds only. One field duplicate pair was included in the SDG: FTAMW-104S / FTAMW-DUP13.

The samples were collected by TetraTech NUS on March 11th, 2003 and were analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, system performance and tuning, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, internal standard recoveries, blank spike results, field duplicate results, matrix spike/matrix spike duplicate results, compound identification, compound quantitation, and detection limits. Areas of concern are listed below.

Major Problems

- There were no major problems that would have resulted in the rejection of data.

Minor Problems

- The following compounds were detected in the method blank and/or trip blank(*):

Compound	Maximum Concentration	Blank Action Level
Methylene chloride*	50 ug/L	500 ug/L
Acetone*	53 ug/L	530 ug/L
Bis(2-ethylhexyl)phthalate	7.0 ug/L	70 ug/L

Sample aliquot and dilution factors were taken into consideration when applying the blank action limit. Positive results for acetone, methylene chloride, and bis(2-ethylhexyl)phthalate below the blank action level were qualified as, B, in the environmental samples. Field quality control samples were not qualified based on method blank contamination.

- The semivolatile initial calibration on 3/21/03 contained a %RSD that exceeded the 30% (and > 50%) quality control limit for 4-chloroaniline. The nondetected results for the 4-chloroaniline were qualified as estimated, UJ, in the associated samples. The direction of bias cannot be determined.

- Positive results below the reporting limit (RL) were qualified as estimated, J, due to uncertainty near the detection limit. The direction of bias cannot be determined.

- The LCS/LCSD %Rs fell below the lower quality control limit (but > 10%) for hexachlorocyclopentadiene. The nondetected results for hexachlorocyclopentadiene were qualified as estimated, UJ, in all samples.

Notes

The volatile initial calibration on 3/23/03 contained a %RSD that exceeded the 30% quality control limit for carbon disulfide. No qualification action was warranted because the reported results were non-detects.

The semivolatile continuing calibration on 3/26/03 at 1045 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 2,2'-oxybis(1-chloropropane), 4-chloroaniline, 2,4-dinitrophenol, 4-nitrophenol, and hexachlorocyclopentadiene. Therefore, sample results were not qualified on this basis.

The semivolatile continuing calibration on 3/28/03 at 1102 contained %Ds that exceeded the 25% quality control limit, but did not exceed 50%, for 2,2'-oxybis(1-chloropropane), 2,4-dinitrophenol, 4-nitrophenol, 4-chloroaniline, hexachlorocyclopentadiene, and benzo(k)fluoranthene. Therefore, sample results were not qualified on this basis.

The semivolatile laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) %Rs exceeded the upper quality control limits for isophorone and N-nitrosodiphenylamine. No qualification was warranted.

The semivolatile LCS %R exceeded the upper quality control limit for 4-chloroaniline, diethylphthalate, and bis(2-ethylhexyl)phthalate. No qualification action was warranted.

The semivolatile LCS %R fell below the lower quality control limit and the LCSD %R exceeded the upper quality control limit for 4,6-dinitro-2-methylphenol. No qualification action was warranted.

The semivolatile LCS/LCSD RPD exceeded the quality control limit for 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, and 4-nitrophenol. No qualification action was warranted.

The semivolatile surrogate recoveries exceeded the upper quality control limit for terphenyl-d14 and 2,4,6-tribromophenol in samples FTAMW-103I, FTAMW-103S, and FTAMW-55S. The re-analysis for each sample yielded a noncompliant recovery of 2,4,6-tribromophenol. The re-analyses were used for data validation purposes due to internal standard noncompliance. No qualification action was warranted based on surrogate recovery noncompliance.

The semivolatile internal standards of phenanthrene-d10, chrysene-d12,, and perylene-d12 fell below the -50% quality control limit in sample FTAMW-55S. The re-analysis yielded complaint internal standards results; therefore, the re-analysis was used for data validation purposes.

The semivolatile internal standards of chrysene-d12 and perylene-d12 fell below the -50% quality control limit in samples FTAMW-103S and FTAMW-103I. The re-analyses yielded complaint internal standards results; therefore, the re-analyses were used for data validation purposes.

In the PCBs fraction, the laboratory did not report results down to the reporting limits specified in the statement of work. Instead, the laboratory reported to a higher reporting limit.

The PCBs continuing calibrations on 3/25/03 at 2123, 3/26/03 at 0501, and 3/26/03 at 1130 contained %Ds that exceeded the 15% quality control limit for aroclor-1060 and aroclor-1260 on column RTXCLPPEST2. No qualification action was warranted because the other column was complaint.

There were differences between what was reported by the laboratory and what was requested in the statement of work (SOW). No action was taken because the project office was contacted and that they approved the variance from the SOW.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Several compounds failed to meet the initial and/or continuing calibration quality control criteria. Blank contamination occurred in both the volatile and semivolatile fractions. LCS/LCSD recoveries fell outside of quality control criteria.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Data Validation", (September 1994) as amended for use within USEPA Region III, and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS

Seth C. Staffen
Environmental Scientist/Data Validator

Tetra Tech NUS

Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

TICs

VOA

Unknown
Branched Alkane
3-pentanone, 2,2-dimethyl
Benzene, 1-ethyl-2-methyl
Benzene, 1,2,3-trimethyl
Benzene, 1-propenyl
Benzene, 1-methyl-4-(1-methyl
Benzene, 1-methyl-2-propyl-
Benzene, 1,2-diethyl
Benzene, 1-methyl-4-(1-methyl
Benzene, 1,2,4,5-tetramethyl
Benzene, 1,2,3,4-tetramethyl
Benzene, 4-ethyl-1,2-dimethyl
Naphthalene, 1,2,3,4-tetrahy
Benzene, 2,4-diethyl-1-methyl
Naphthalene
1H-1,3,2,-Benzodiazaorole, 2
Naphthalene, 2-methyl

SVOA

Unknown
1H-inden-1-one, 2,3-dihydro
1(3H)-isobenzofuranone
1(3H)-isobenzofuranone-5-me
2-Naphthalenecarboxylic acid
Benzaldehyde, 4-methyl
Benzoic acid, 2-methyl

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OV

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	9		
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	19		
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	10		
1,1-DICHLOROETHENE	4		
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1		
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OV

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	55		
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1		
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	32	B	B
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1		
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OV

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	46		
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	8		
1,1-DICHLOROETHENE	3		
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	51		
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	18		
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	29		
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	4	J	P
ACETONE	79	B	B
BENZENE	2		
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OV

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	8		
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	20		
ISOPROPYLBENZENE	2		
M+P-XYLENES	24		
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	4		
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	21		
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	83		
TOTAL XYLENES	45		
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OV

nsample	TB-031103
samp_date	3/11/2003
lab_id	B0412-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	53		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-031103
samp_date	3/11/2003
lab_id	B0412-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	50		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OS

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	9	B	A
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04ERE
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OS

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04ERE
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06ERE
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06ERE
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OS

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	6	B	A
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02EDL
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	20	U	
2,4,5-TRICHLOROPHENOL	80	U	
2,4,6-TRICHLOROPHENOL	20	U	
2,4-DICHLOROPHENOL	20	U	
2,4-DIMETHYLPHENOL	20	U	
2,4-DINITROPHENOL	80	U	
2,4-DINITROTOLUENE	20	U	
2,6-DINITROTOLUENE	20	U	
2-CHLORONAPHTHALENE	20	U	
2-CHLOROPHENOL	20	U	
2-METHYLNAPHTHALENE	5	J	P
2-METHYLPHENOL	24		
2-NITROANILINE	80	U	
2-NITROPHENOL	20	U	
3,3'-DICHLOROBENZIDINE	20	U	
3-NITROANILINE	80	U	
4,6-DINITRO-2-METHYLPHENOL	80	U	
4-BROMOPHENYL PHENYL ETHER	20	U	
4-CHLORO-3-METHYLPHENOL	20	U	
4-CHLOROANILINE	20	UJ	C
4-CHLOROPHENYL PHENYL ETHER	20	U	
4-METHYLPHENOL	300		
4-NITROANILINE	80	U	
4-NITROPHENOL	80	U	
ACENAPHTHENE	20	U	
ACENAPHTHYLENE	20	U	
ANTHRACENE	20	U	
BENZO(A)ANTHRACENE	20	U	
BENZO(A)PYRENE	20	U	
BENZO(B)FLUORANTHENE	20	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: OS

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02EDL
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	20	U	
BENZO(K)FLUORANTHENE	20	U	
BIS(2-CHLOROETHOXY)METHANE	20	U	
BIS(2-CHLOROETHYL)ETHER	20	U	
BIS(2-ETHYLHEXYL)PHTHALATE	20	U	
BUTYL BENZYL PHTHALATE	20	U	
CHRYSENE	20	U	
DIBENZO(A,H)ANTHRACENE	20	U	
DIBENZOFURAN	20	U	
DIETHYL PHTHALATE	20	U	
DIMETHYL PHTHALATE	20	U	
DI-N-BUTYL PHTHALATE	20	U	
DI-N-OCTYL PHTHALATE	20	U	
FLUORANTHENE	20	U	
FLUORENE	20	U	
HEXACHLOROBENZENE	20	U	
HEXACHLOROBUTADIENE	20	U	
HEXACHLOROCYCLOPENTADIENE	20	UJ	E
HEXACHLOROETHANE	20	U	
INDENO(1,2,3-CD)PYRENE	20	U	
ISOPHORONE	20	U	
NAPHTHALENE	22		
NITROBENZENE	20	U	
N-NITROSO-DI-N-PROPYLAMINE	20	U	
N-NITROSODIPHENYLAMINE	20	U	
PENTACHLOROPHENOL	80	U	
PHENANTHRENE	20	U	
PHENOL	34		
PYRENE	20	U	

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	U	
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	UJ	C
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	13	B	A
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: PEST/PCB

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: PEST/PCB

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5066

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	9	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5066

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5067

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	4	
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	10	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	55	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	19	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5067

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5069

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	32	
75-15-0	Carbon Disulfide	1	
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5069

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW104S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5068

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW104S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5068

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5065

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	3	
67-64-1	Acetone	79	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	8	
78-93-3	2-Butanone	29	
156-59-2	cis-1,2-Dichloroethene	8	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	46	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	2	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	4	J
108-88-3	Toluene	83	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	20	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5065

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	24	
95-47-6	o-Xylene	21	
1330-20-7	Xylene (Total)	45	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	2	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	18	
95-63-6	1,2,4-Trimethylbenzene	51	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	4	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5065

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.72	14	J
2.		UNKNOWN	6.08	41	J
3.		BRANCHED ALKANE	7.26	26	J
4.		UNKNOWN	7.40	56	J
5.	564-04-5	3-PENTANONE, 2,2-DIMETHYL-	8.68	14	NJ
6.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.24	19	NJ
7.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.58	25	NJ
8.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.30	42	NJ
9.	637-50-3	BENZENE, 1-PROPENYL-	12.55	22	NJ
10.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	12.66	28	NJ
11.	1074-17-5	BENZENE, 1-METHYL-2-PROPYL-	12.88	10	NJ
12.	135-01-3	BENZENE, 1,2-DIETHYL-	12.99	12	NJ
13.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.02	18	NJ
14.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	13.12	16	NJ
15.		UNKNOWN	13.27	20	J
16.	934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	13.49	15	NJ
17.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	13.60	19	NJ
18.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.67	26	NJ
19.		UNKNOWN	13.77	10	J
20.		UNKNOWN	13.95	11	J
21.		UNKNOWN	14.14	9	J
22.		UNKNOWN	14.19	47	J
23.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.41	16	NJ
24.	1758-85-6	BENZENE, 2,4-DIETHYL-1-METHY	14.66	25	NJ
25.		UNKNOWN	14.81	13	J
26.	91-20-3	NAPHTHALENE	14.97	40	NJ
27.		UNKNOWN	15.23	8	J
28.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	15.70	12	NJ
29.	74663-81-3	1H-1,3,2-BENZODIAZABOROLE, 2	16.10	6	NJ
30.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	14	NJ

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5065

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 31

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.54	9	NJ
2.					
3.					
4.					
5.					
6.					
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30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMDUP13

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-07A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5070

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMDUP13

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-07A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5070

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5064

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	53	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	50	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5064

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2866

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2866

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2820

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2820

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103IRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2867

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103IRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2867

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2822

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2822

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2822

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	15.57	8	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2869

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06ERE

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2869

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW104S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2868

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW104S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2868

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	6	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2818

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	38	
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	27	
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	290	E
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	19	
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	23	
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	6	
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2818

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	1	J
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2818

Level: (low/med) LOW Date Received: 02/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 20 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.66	54	J
2.		UNKNOWN	8.43	51	J
3.		UNKNOWN	10.19	32	J
4.	83-33-0	1H-INDEN-1-ONE, 2,3-DIHYDRO-	10.40	29	NJ
5.	87-41-2	1(3H)-ISOBENZOFURANONE	11.21	65	NJ
6.		UNKNOWN	11.29	37	J
7.		UNKNOWN	11.40	68	J
8.		UNKNOWN	11.47	47	J
9.		UNKNOWN	11.60	34	J
10.		UNKNOWN	11.87	53	J
11.		UNKNOWN	12.40	160	J
12.	54120-64-8	1(3H)-ISOBENZOFURANONE, 5-ME	12.53	59	NJ
13.		UNKNOWN	12.78	41	J
14.		UNKNOWN	13.07	39	J
15.		UNKNOWN	13.32	110	J
16.		UNKNOWN	13.49	45	J
17.		UNKNOWN	14.16	49	J
18.		UNKNOWN	14.86	62	J
19.		UNKNOWN	15.00	43	J
20.	93-09-4	2-NAPHTHALENECARBOXYLIC ACID	15.07	48	NJ
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	34	D
111-44-4	bis(2-Chloroethyl)Ether	20	U
95-57-8	2-Chlorophenol	20	U
95-48-7	2-Methylphenol	24	D
108-60-1	2,2'-oxybis(1-Chloropropane)	20	U
106-44-5	4-Methylphenol	300	D
621-64-7	N-Nitroso-di-n-propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	20	U
120-83-2	2,4-Dichlorophenol	20	U
91-20-3	Naphthalene	22	D
106-47-8	4-Chloroaniline	20	U
111-91-1	bis(2-Chloroethoxy)methane	20	U
87-68-3	Hexachlorobutadiene	20	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	5	DJ
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	80	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	80	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U
99-09-2	3-Nitroaniline	80	U
83-32-9	Acenaphthene	20	U
51-28-5	2,4-Dinitrophenol	80	U
100-02-7	4-Nitrophenol	80	U
132-64-9	Dibenzofuran	20	U
121-14-2	2,4-Dinitrotoluene	20	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	20	U
7005-72-3	4-Chlorophenyl-phenylether	20	U
86-73-7	Fluorene	20	U
100-01-6	4-Nitroaniline	80	U
534-52-1	4,6-Dinitro-2-methylphenol	80	U
86-30-6	N-Nitrosodiphenylamine (1)	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	80	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
84-74-2	Di-n-butylphthalate	20	U
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
85-68-7	Butylbenzylphthalate	20	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	20	U
218-01-9	Chrysene	20	U
117-81-7	bis(2-Ethylhexyl)phthalate	20	U
117-84-0	Di-n-octylphthalate	20	U
205-99-2	Benzo(b)fluoranthene	20	U
207-08-9	Benzo(k)fluoranthene	20	U
50-32-8	Benzo(a)pyrene	20	U
193-39-5	Indeno(1,2,3-cd)pyrene	20	U
53-70-3	Dibenzo(a,h)anthracene	20	U
191-24-2	Benzo(g,h,i)perylene	20	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104-87-0	BENZALDEHYDE, 4-METHYL-	7.41	180	NJD
2.		UNKNOWN	8.06	260	JD
3.		UNKNOWN	8.10	110	JD
4.	118-90-1	BENZOIC ACID, 2-METHYL-	9.81	100	NJD
5.		UNKNOWN	9.85	110	JD
6.		UNKNOWN	10.03	92	JD
7.	87-41-2	1(3H)-ISOBENZOFURANONE	10.98	160	NJD
8.		UNKNOWN	11.81	84	JD
9.	54120-64-8	1(3H)-ISOBENZOFURANONE, 5-ME	12.29	80	NJD
10.		UNKNOWN	12.62	160	JD
11.		UNKNOWN	12.95	140	JD
12.		UNKNOWN	13.01	62	JD
13.		UNKNOWN	13.25	110	JD
14.		UNKNOWN	13.40	87	JD
15.		UNKNOWN	13.46	86	JD
16.		UNKNOWN	13.82	63	JD
17.		UNKNOWN	13.92	80	JD
18.		UNKNOWN	14.63	100	JD
19.	93-09-4	2-NAPHTHALENECARBOXYLIC ACID	14.69	140	NJD
20.		UNKNOWN	14.82	130	JD
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMDUP13

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2870

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMDUP13

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2870

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	13	B
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW103D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0126F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW103I

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0130F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW103S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-06E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0132F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW104S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0131F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0125F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTAMDUP13

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-07E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0133F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/12/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX C

SUPPORT DOCUMENTATION

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0412

Mitkem Project ID: B0412

April 21, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 11, 2003, and received at Mitkem on March 12, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of high recovery of terphenyl-d14 and 2,4,6-tribromophenol in samples FTAMW-55S, FTAMW103I and FTAMW103S. Sample FTAMW-55S was re-analyzed at dilution with surrogate recoveries within QC limits. Samples FTAMW103I and FTAMW103S were re-analyzed with similar findings. The high recovery is due to the depression of the associated internal standard area count.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: high recovery isophorone, 4-chloroaniline, diethylphthalate, n-nitrosodiphenylamine, and bis (2-ethyhexyl) phthalate, low recovery of hexachlorocyclopentadiene and no recovery of 2,4-dinitrophenol in both the lab control sample and high recovery isophorone and n-nitrosodiphenylamine, low recovery of hexachlorocyclopentadiene and no recovery of 2,4-dinitrophenol in the lab control sample duplicate. Replicate RPDs were within the QC limits with the exception of 4-nitrophenol, 2,4-dimethylphenol and 4,6-dinitro-2-methylphenol.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample FTAMW-55S. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample FTAMW-55S. Replicate RPDs were within the QC limits with the exception of zinc. Form 1's are flagged with an "*" flag for zinc.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/21/03

B0412

HOLDING TIME
05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
UG/L	FTAMW-103D	B0412-03C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103I	B0412-04C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103S	B0412-06C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-104S	B0412-05C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55S	B0412-02C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55SDUP	B0412-02CDUP	DUPLICATE	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
%	FTAMW-55SMS	B0412-02CMS	MS	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-DUP13	B0412-07C		B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
%	LCSW	0313LCSW	LCS	B0412	HG	/ /	03/13/03	03/14/03	0	1	0
UG/L	PBW	0313PBW	M_BLANK	B0412	HG	/ /	03/13/03	03/14/03	0	1	0
UG/L	FTAMW-103DF	B0412-09A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103IF	B0412-10A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103SF	B0412-12A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-104SF	B0412-11A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55SF	B0412-08A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-DUP13F	B0412-13A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103D	B0412-03C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103I	B0412-04C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTAMW-103S	B0412-06C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-104S	B0412-05C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55S	B0412-02C		B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55SDUP	B0412-02CDUP	DUPLICATE	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
%	FTAMW-55SMS	B0412-02CMS	MS	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-DUP13	B0412-07C		B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
%	LCSW	0313LCSW	LCS	B0412	M	/ /	03/13/03	03/15/03	0	2	0
UG/L	PBW	0313PBW	M_BLANK	B0412	M	/ /	03/13/03	03/15/03	0	2	0
UG/L	FTAMW-103DF	B0412-09A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103IF	B0412-10A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103SF	B0412-12A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-104SF	B0412-11A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55SF	B0412-08A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-DUP13F	B0412-13A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001		B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006		B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
%	FTAMW-103D	B0412-03E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-103I	B0412-04E		B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
%	FTAMW-103IRE	B0412-04ERE	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-103S	B0412-06E	NORMAL	B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
UG/L	FTAMW-103SRE	B0412-06ERE	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-104S	B0412-05E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-55S	B0412-02E	NORMAL	B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
%	FTAMW-55SDL	B0412-02EDL	NORMAL	B0412	OS	03/11/03	03/12/03	03/28/03	1	16	17
%	FTAMW-DUP13	B0412-07E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	SBLK2K	MB-6081	M_BLANK	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	SBLK2KLCS	LCS-6081	LCS	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	SBLK2KLCSD	LCSD-6081	LCSD	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	FTAMW-103D	B0412-03A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-103I	B0412-04A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-103S	B0412-06A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
UG/L	FTAMW-104S	B0412-05A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-55S	B0412-02A		B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-DUP13	B0412-07A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	TB-031103	B0412-01A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	VBLK5T	V5B0324B	M_BLANK	B0412	OV	/ /	03/24/03	03/24/03	0	0	0
%	VBLK5TLCS	V5L0324B	LCS	B0412	OV	/ /	03/24/03	03/24/03	0	0	0
%	BBLK1B	MB-6111	M_BLANK	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	BBLK1BLCS	LCS-6112	LCS	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	BBLK1BLCSD	LCSD-6112	LCSD	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	FTAMW-103D	B0412-03E		B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-103I	B0412-04E		B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-103S	B0412-06E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-104S	B0412-05E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-55S	B0412-02E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-DUP13	B0412-07E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
MG/L	FTAMW-103D	203210-002		B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103D	B0412-03B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-103I	B0412-04B		B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-103S	B0412-06B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-104S	B0412-05B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-55S	B0412-02B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-DUP13	B0412-07B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
%	LCS-6217	LCS-6217	LCS	B0412	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	MB-6217	MB-6217	M_BLANK	B0412	TOC	/ /	03/19/03	03/19/03	0	0	0

MITKEM CORPORATION

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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9686		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0412
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl Low Level 1,3,5-TMB TCL VOL + MTBE	40 ml VOA Vial HCl TCL VOL + MTBE	1 Liter Amber Glass TCL SVOA	1 Liter Amber Glass TCL PCB	500 ml Poly TAL Metals	500 ml Poly unpres Cyanide	500 ml Poly HNO3 Nitrate/Sulfate/Nitrite	500 ml Poly HNO3 Dissolved Metals						COMMENTS
TB - 031103	3/11/03 / 0720		X	X			01	2	2													Trip Blank
FTA MW-55S	3/11/03 / 0935		X	X			02		2	2	1	1	1	1								
FTA MW-103D	3/11/03 / 0955		X	X			03		2	2	1	1	1	1								
FTA MW-103I	3/11/03 / 1215		X	X			04		2	2	1	1	1	1								
FTA MW-104S	3/11/03 / 1355		X	X			05		2	2	1	1	1	1								
FTA MW-103S	3/11/03 / 1445		X	X			06		2	2	1	1	1	1								
FTA MW-Dup 13	3/11/03 / 1655		X	X			07		2	2	1	1	1	1								
FTA MW-55S F	3/11/03 / 0935		X	X			08	1							1							
FTA MW-103D F	3/11/03 / 0955		X	X			09	1							1							
FTA MW-103I F	3/11/03 / 1215		X	X			10	1							1							
FTA MW-104S F	3/11/03 / 1355		X	X			11	1							1							
FTA MW-103S F	3/11/03 / 1445		X	X			12	1							1							

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Clark Mayer	3/11/03 / 1700	[signature]	3-12-03 / 0900	Trip Blanks provided By Lab Shipped via Federal Express Airbill NO 8286 8464 5142	3°
		/		/		
		/		/		

0000010

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0412
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 648	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 500 ml Poly HNO3 Dissolved Metals	COMMENTS
FTAMW-Dup 13F	3/11/03 / 1655		X	X			13	1	1	
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	3/11/03 / 1700	[signature]	3-12-03 / 0900	Shipped Via Federal Express Airbill No 8286 8464 5142	5
		/		/		
		/		/		

000011

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MITKEM CORPORATION

1 1

Sample Condition Form

Page __ of __

Received By:	Reviewed By:	Date: 3-12-03	MITKEM Project: B0412
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed YES / NO*

*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 3c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 3-12-03

8)Time Received 0900

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B0412 01	<2				H
02	<2				H
03	<2				H
04	<2				H
05	<2				H
06	<2				H
07	<2				H
08	<2	DISSOLVED		+ FILTERED	
09	<2	↓	↓	↓	↓
10	<2				
11	<2				
12	<2				
B0412 13	<2	↓	↓	↓	↓

VOA Matrix Key:

US = Unpreserved Soil	A = Air
UA = Unpreserved Aqueous	H = HCl
M/N = MeOH& NaHSO4	E=Encore
N = NaHSO4 M = MeOH	

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: V5E5052 Lab Sample ID: V5B0324B

Date Analyzed: 03/24/03 Time Analyzed: 1922

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

Instrument ID: V5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	V5TLCS	V5L0324B	V5E5053	1953
02	TB-031103	B0412-01A	V5E5064	0059
03	FTAMW-55S	B0412-02A	V5E5065	0127
04	FTAMW103D	B0412-03A	V5E5066	0155
05	FTAMW103I	B0412-04A	V5E5067	0223
06	FTAMW104S	B0412-05A	V5E5068	0251
07	FTAMW103S	B0412-06A	V5E5069	0319
08	FTAMDUP13	B0412-07A	V5E5070	0347
09				
10				
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28				
29				
30				

COMMENTS:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: V5B0324B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5052

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5T

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: V5B0324B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5052

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/24/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: V5E5000 BFB Injection Date: 03/23/03

Instrument ID: V5 BFB Injection Time: 1009

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.1
75	30.0 - 60.0% of mass 95	41.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	76.9
175	5.0 - 9.0% of mass 174	5.4 (7.1)1
176	95.0 - 101.0% of mass 174	73.8 (95.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505R	V5S0323A	V5E5001	03/23/03	1028
02	VSTD0055R	V5S0323B	V5E5002	03/23/03	1056
03	VSTD2005R	V5S0323D	V5E5004	03/23/03	1207
04	VSTD1005R	V5S0323E	V5E5005	03/23/03	1235
05	VSTD0205R	V5S0323F	V5E5006	03/23/03	1303
06					
07					
08					
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22					

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.296	0.242	0.255	0.246	0.256	0.259	8.2
Chloromethane	*	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
Vinyl Chloride		0.449	0.346	0.362	0.357	0.365	0.376	11.1
Bromomethane		0.290	0.233	0.232	0.216	0.188	0.232	16.0
Chloroethane		0.176	0.147	0.209	0.159	0.140	0.166	16.4
Trichlorofluoromethane		0.355	0.309	0.360	0.344	0.341	0.342	5.8
1,1-Dichloroethene		0.278	0.252	0.294	0.278	0.274	0.275	5.5
Acetone		0.073	0.055	0.054	0.049	0.046	0.055	18.6
Carbon Disulfide		1.029	0.531	0.995	0.547	0.784	0.777	30.5
Methylene Chloride		0.326	0.316	0.320	0.329	0.331	0.324	2.0
trans-1,2-Dichloroethene		0.292	0.286	0.306	0.321	0.322	0.305	5.3
Methyl tert-butyl ether		0.759	0.652	0.604	0.645	0.632	0.658	9.0
1,1-Dichloroethane	*	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
2-Butanone		0.140	0.118	0.103	0.113	0.106	0.116	12.5
cis-1,2-Dichloroethene		0.308	0.293	0.312	0.328	0.331	0.314	4.9
Chloroform		0.460	0.434	0.463	0.480	0.474	0.462	3.8
1,1,1-Trichloroethane		0.305	0.298	0.315	0.321	0.318	0.311	3.1
Carbon Tetrachloride		0.243	0.239	0.264	0.280	0.279	0.261	7.4
1,2-Dichloroethane		0.306	0.294	0.295	0.305	0.295	0.299	2.0
Benzene		1.079	1.026	1.063	1.118	1.110	1.079	3.5
Trichloroethene		0.276	0.261	0.278	0.294	0.300	0.282	5.5
1,2-Dichloropropane		0.284	0.276	0.283	0.297	0.289	0.286	2.8
Bromodichloromethane		0.323	0.316	0.335	0.353	0.358	0.337	5.5
cis-1,3-Dichloropropene		0.371	0.382	0.426	0.441	0.453	0.415	8.7
4-Methyl-2-pentanone		0.260	0.230	0.211	0.229	0.236	0.233	7.6
Toluene		1.134	1.074	1.127	1.170	1.168	1.135	3.5
trans-1,3-Dichloropropene		0.288	0.314	0.360	0.367	0.381	0.342	11.5
1,1,2-Trichloroethane		0.228	0.229	0.227	0.244	0.249	0.235	4.5
Tetrachloroethene		0.315	0.302	0.313	0.335	0.338	0.321	4.8
2-Hexanone		0.239	0.235	0.193	0.227	0.218	0.222	8.2
Dibromochloromethane		0.322	0.334	0.360	0.383	0.389	0.358	8.2
1,2-Dibromoethane		0.358	0.360	0.350	0.383	0.381	0.366	4.1
Chlorobenzene	*	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
Ethylbenzene		0.536	0.520	0.523	0.564	0.566	0.542	4.0
m,p-Xylene		0.669	0.643	0.655	0.702	0.677	0.669	3.4
o-Xylene		0.648	0.636	0.646	0.688	0.678	0.659	3.5
Xylene (Total)		0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene	1.017	1.059	1.131	1.180	1.148	1.107	6.1
Bromoform *	0.174	0.212	0.242	0.260	0.274	0.232	17.2*
Isopropylbenzene	1.581	1.531	1.567	1.699	1.696	1.615	4.8
1,1,2,2-Tetrachloroethane *	1.016	0.945	0.810	0.926	0.922	0.924	8.0*
1,3,5-Trimethylbenzene	2.916	2.614	2.610	2.755	2.702	2.719	4.6
1,2,4-Trimethylbenzene	2.806	2.620	2.628	2.778	2.736	2.714	3.1
1,3-Dichlorobenzene	1.584	1.511	1.542	1.638	1.633	1.582	3.5
1,4-Dichlorobenzene	1.677	1.564	1.560	1.652	1.659	1.622	3.5
1,2-Dichlorobenzene	1.436	1.430	1.430	1.538	1.522	1.471	3.7
1,2-Dibromo-3-chloropropane	0.084	0.092	0.085	0.107	0.110	0.096	12.9
1,2,4-Trichlorobenzene	0.569	0.686	0.659	0.831	0.883	0.726	17.8
1,1,2-Trichlo-1,2,2-trifluor	0.249	0.220	0.214	0.195	0.186	0.213	11.5
Methyl Acetate	0.254	0.222	0.182	0.204	0.196	0.212	13.2
Cyclohexane	0.505	0.421	0.444	0.438	0.432	0.448	7.4
Methylcyclohexane	0.494	0.409	0.417	0.425	0.416	0.432	8.1
Dibromofluoromethane	0.268	0.252	0.268	0.284	0.284	0.271	5.0
1,2-Dichloroethane-d4	0.058	0.057	0.060	0.062	0.061	0.060	3.9
Toluene-d8	1.356	1.222	1.253	1.326	1.298	1.291	4.2
Bromofluorobenzene	0.548	0.482	0.492	0.531	0.525	0.516	5.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

OLM03.0

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: V5E5050 BFB Injection Date: 03/24/03

Instrument ID: V5 BFB Injection Time: 1832

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.1
75	30.0 - 60.0% of mass 95	40.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	79.7
175	5.0 - 9.0% of mass 174	5.7 (7.1)1
176	95.0 - 101.0% of mass 174	77.7 (97.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505T	V5S0324B	V5E5051	03/24/03	1848
02	VBLK5T	V5B0324B	V5E5052	03/24/03	1922
03	V5TLCS	V5L0324B	V5E5053	03/24/03	1953
04	TB-031103	B0412-01A	V5E5064	03/25/03	0059
05	FTAMW-55S	B0412-02A	V5E5065	03/25/03	0127
06	FTAMW103D	B0412-03A	V5E5066	03/25/03	0155
07	FTAMW103I	B0412-04A	V5E5067	03/25/03	0223
08	FTAMW104S	B0412-05A	V5E5068	03/25/03	0251
09	FTAMW103S	B0412-06A	V5E5069	03/25/03	0319
10	FTAMDUP13	B0412-07A	V5E5070	03/25/03	0347
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: V5 Calibration Date: 03/24/03 Time: 1848

Lab File ID: V5E5051 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Dichlorodifluoromethane	0.259	0.217	0.01	16.2	20.0
Chloromethane	0.410	0.396	0.1	3.4	20.0
Vinyl Chloride	0.376	0.368	0.01	2.1	20.0
Bromomethane	0.232	0.247	0.01	6.5	20.0
Chloroethane	0.166	0.196	0.01	18.1	20.0
Trichlorofluoromethane	0.342	0.334	0.01	2.3	20.0
1,1-Dichloroethene	0.275	0.296	0.01	7.6	20.0
Acetone	0.055	0.050	0.01	9.1	20.0
Carbon Disulfide	0.777	0.816	0.01	5.0	20.0
Methylene Chloride	0.324	0.311	0.01	4.0	20.0
trans-1,2-Dichloroethene	0.305	0.306	0.01	0.3	20.0
Methyl tert-butyl ether	0.658	0.570	0.01	13.4	20.0
1,1-Dichloroethane	0.492	0.506	0.1	2.8	20.0
2-Butanone	0.116	0.100	0.01	13.8	20.0
cis-1,2-Dichloroethene	0.314	0.309	0.01	1.6	20.0
Chloroform	0.462	0.467	0.01	1.1	20.0
1,1,1-Trichloroethane	0.311	0.328	0.01	5.5	20.0
Carbon Tetrachloride	0.261	0.276	0.01	5.7	20.0
1,2-Dichloroethane	0.299	0.302	0.01	1.0	20.0
Benzene	1.079	1.079	0.01	0.0	20.0
Trichloroethene	0.282	0.273	0.01	3.2	20.0
1,2-Dichloropropane	0.286	0.292	0.01	2.1	20.0
Bromodichloromethane	0.337	0.337	0.01	0.0	20.0
cis-1,3-Dichloropropene	0.415	0.423	0.01	1.9	20.0
4-Methyl-2-pentanone	0.233	0.196	0.01	15.9	20.0
Toluene	1.135	1.145	0.01	0.9	20.0
trans-1,3-Dichloropropene	0.342	0.345	0.01	0.9	20.0
1,1,2-Trichloroethane	0.235	0.223	0.01	5.1	20.0
Tetrachloroethene	0.321	0.308	0.01	4.0	20.0
2-Hexanone	0.222	0.195	0.01	12.2	20.0
Dibromochloromethane	0.358	0.348	0.01	2.8	20.0
1,2-Dibromoethane	0.366	0.338	0.01	7.6	20.0
Chlorobenzene	1.059	1.043	0.3	1.5	20.0
Ethylbenzene	0.542	0.529	0.01	2.4	20.0
m,p-Xylene	0.669	0.669	0.01	0.0	20.0
o-Xylene	0.659	0.659	0.01	0.0	20.0
Xylene (Total)	0.666	0.666	0.01	0.0	20.0

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: V5 Calibration Date: 03/24/03 Time: 1848

Lab File ID: V5E5051 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.107	1.127	0.01	1.8	20.0
Bromoform	0.232	0.222	0.1	4.3	20.0
Isopropylbenzene	1.615	1.619	0.01	0.2	20.0
1,1,2,2-Tetrachloroethane	0.924	0.828	0.3	10.4	20.0
1,3,5-Trimethylbenzene	2.719	2.724	0.01	0.2	20.0
1,2,4-Trimethylbenzene	2.714	2.757	0.01	1.6	20.0
1,3-Dichlorobenzene	1.582	1.591	0.01	0.6	20.0
1,4-Dichlorobenzene	1.622	1.606	0.01	1.0	20.0
1,2-Dichlorobenzene	1.471	1.483	0.01	0.8	20.0
1,2-Dibromo-3-chloropropane	0.096	0.087	0.01	9.4	20.0
1,2,4-Trichlorobenzene	0.726	0.686	0.01	5.5	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.213	0.211	0.01	0.9	20.0
Methyl Acetate	0.212	0.190	0.01	10.4	20.0
Cyclohexane	0.448	0.431	0.01	3.8	20.0
Methylcyclohexane	0.432	0.401	0.01	7.2	20.0
Dibromofluoromethane	0.271	0.264	0.01	2.6	20.0
1,2-Dichloroethane-d4	0.060	0.056	0.01	6.7	20.0
Toluene-d8	1.291	1.275	0.01	1.2	20.0
Bromofluorobenzene	0.516	0.500	0.01	3.1	20.0

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5T	97	88	107	86	0
02	V5TLCS	100	99	101	99	0
03	TB-031103	98	99	105	93	0
04	FTAMW-55S	99	98	103	102	0
05	FTAMW103D	98	98	104	93	0
06	FTAMW103I	98	96	103	92	0
07	FTAMW104S	98	97	103	90	0
08	FTAMW103S	98	96	105	91	0
09	FTAMDUP13	98	95	105	91	0
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		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER(BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: V5TLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		40	80	48-135
Chloromethane	50		46	92	60-118
Vinyl Chloride	50		46	92	65-113
Bromomethane	50		50	100	73-122
Chloroethane	50		52	104	72-118
Trichlorofluoromethane	50		47	94	68-129
1,1-Dichloroethene	50		50	100	67-121
Acetone	50		48	96	38-161
Carbon Disulfide	50		50	100	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		50	100	71-124
Methyl tert-butyl ether	50		45	90	75-123
1,1-Dichloroethane	50		51	102	83-116
2-Butanone	50		50	100	64-139
cis-1,2-Dichloroethene	50		50	100	83-120
Chloroform	50		51	102	89-118
1,1,1-Trichloroethane	50		52	104	81-122
Carbon Tetrachloride	50		52	104	79-125
1,2-Dichloroethane	50		52	104	83-123
Benzene	50		51	102	81-120
Trichloroethene	50		48	96	77-121
1,2-Dichloropropane	50		52	104	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		51	102	78-119
4-Methyl-2-pentanone	50		49	98	57-138
Toluene	50		50	100	81-121
trans-1,3-Dichloroprope	50		51	102	85-118
1,1,2-Trichloroethane	50		50	100	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: V5TLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		49	98	73-121
2-Hexanone	50		50	100	53-145
Dibromochloromethane	50		51	102	80-124
1,2-Dibromoethane	50		50	100	80-124
Chlorobenzene	50		50	100	82-118
Ethylbenzene	50		49	98	80-122
Xylene (Total)	150		150	100	81-121
Styrene	50		50	100	77-128
Bromoform	50		49	98	77-130
Isopropylbenzene	50		50	100	58-148
1,1,2,2-Tetrachloroetha	50		48	96	76-125
1,3,5-Trimethylbenzene	50		49	98	76-116
1,2,4-Trimethylbenzene	50		50	100	77-117
1,3-Dichlorobenzene	50		50	100	80-116
1,4-Dichlorobenzene	50		50	100	80-114
1,2-Dichlorobenzene	50		50	100	81-116
1,2-Dibromo-3-chloropro	50		52	104	71-126
1,2,4-Trichlorobenzene	50		50	100	67-114
1,1,2-Trichlo-1,2,2-tri	50		46	92	70-130
Methyl Acetate	50		48	96	70-130
Cyclohexane	50		47	94	70-130
Methylcyclohexane	50		45	90	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

8A
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): V5E5051 Date Analyzed: 03/24/03

Instrument ID: V5 Time Analyzed: 1848

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1133585	6.26	798538	9.47	408071	12.22
	UPPER LIMIT	2267170	6.76	1597076	9.97	816142	12.72
	LOWER LIMIT	566793	5.76	399269	8.97	204036	11.72
	EPA SAMPLE NO.						
01	VBLK5T	1072128	6.26	712748	9.47	250621	12.22
02	V5TLCS	1037800	6.26	723033	9.47	372838	12.22
03	TB-031103	1291857	6.26	893205	9.48	343610	12.21
04	FTAMW-55S	1316742	6.26	917184	9.48	451612	12.22
05	FTAMW103D	1339264	6.26	932583	9.47	369618	12.22
06	FTAMW103I	1327447	6.26	919522	9.47	355347	12.22
07	FTAMW104S	1348319	6.26	933919	9.47	347238	12.22
08	FTAMW103S	1291684	6.26	889454	9.48	341924	12.22
09	FTAMDUP13	1300829	6.26	892896	9.47	337634	12.21
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IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2813 Date Analyzed: 03/26/03

Instrument ID: S2 Time Analyzed: 1045

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	181733	6.80	598251	9.17	323380	12.63
	UPPER LIMIT	363466	7.30	1196502	9.67	646760	13.13
	LOWER LIMIT	90867	6.30	299126	8.67	161690	12.13
	EPA SAMPLE NO.						
01	FTAMW-55S	92509	6.81	299918	9.18	179254	12.66
02	FTAMW103I	138109	6.80	472068	9.17	262765	12.63
03	FTAMW103S	110581	6.80	382609	9.16	218291	12.63
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT NASA Wallops Island		JOB NUMBER 80412	
SUBJECT VOA (AQ)			
BASED ON 8260B		DRAWING NUMBER	
BY SCS	CHECKED BY	APPROVED BY	DATE

FTAMW-555

Toluene 83 ug/L

$$\frac{(2494006 \text{ area})(250 \text{ ug})(1)}{(316742 \text{ area})(1.135)(5 \text{ mL})} = 83.44 \text{ ug/mL}$$

$\simeq 83$ ug/L

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030324C\V5E5065.D
Report Date: 02-Apr-2003 16:04

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030324C\V5E5065.D
Lab Smp Id: B0412-02A Client Smp ID: FTAMW-55S
Inj Date : 25-MAR-2003 01:27
Operator : TRA Inst ID: v5.i
Smp Info : TT,B0412-02A,FTAMW-55S,V5B0324B,,B0412
Misc Info : 12-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030324C\v58260.m
Meth Date : 02-Apr-2003 16:00 mtl Quant Type: ISTD
Cal Date : 23-MAR-2003 13:03 Cal File: V5E5006.D ✓
Als bottle: 41
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub ✓
Target Version: 4.03
Processing Host: TARGET5

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)	
8	1,1-Dichloroethene	96	3.400	3.384	(0.543)	22680	3.13038	3 (M)	MS: SPLIT PEAK TCP 3/31/03
9	Acetone	43	3.419	3.414	(0.547)	116098	79.3508	79	
18	1,1-Dichloroethane	63	4.552	4.546	(0.728)	99922	7.70954	8	
23	cis-1,2-Dichloroethene	96	5.123	5.117	(0.819)	63594	7.67760	8	
22	2-Butanone	43	5.123	5.117	(0.819)	87658	28.6513	29	
$ 30	Dibromofluoromethane	113	5.586	5.580	(0.893)	353561	49.5222	50	
31	1,1,1-Trichloroethane	97	5.626	5.620	(0.899)	374253	45.6372	46	
$ 35	1,2-Dichloroethane-d4	102	5.921	5.915	(0.946)	77130	49.0306	49	
37	Benzene	78	5.990	5.984	(0.957)	42752	1.50394	2	
* 38	Fluorobenzene	96	6.256	6.260	(1.000)	1316742	50.0000		
114	Methylcyclohexane	83	6.847	6.841	(1.094)	45895	4.02920	4 (Q)	
46	4-Methyl-2-pentanone	43	7.743	7.737	(1.238)	23662	3.85332	4 (a)	
$ 47	Toluene-d8	98	7.891	7.885	(0.833)	1224359	51.7079	52	
48	Toluene	91	7.960	7.954	(1.272)	2494006	83.4666	83	
* 57	Chlorobenzene-d5	117	9.477	9.471	(1.000)	917184	50.0000		
60	Ethylbenzene	106	9.625	9.629	(1.016)	200475	20.1746	20	

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030324C\V5E5065.D
Report Date: 02-Apr-2003 16:04

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	61 m,p-Xylene	106	9.762	9.757	(1.030)	297960	24.2688	24
	62 o-Xylene	106	10.216	10.220	(1.078)	249570	20.6405	21
	66 Isopropylbenzene	105	10.649	10.643	(1.124)	46380	1.56569	2
$	68 Bromofluorobenzene	95	10.826	10.830	(1.142)	481273	50.8522	51
	74 1,3,5-Trimethylbenzene	105	11.348	11.342	(0.929)	443377	18.0513	18
	77 1,2,4-Trimethylbenzene	105	11.791	11.795	(0.965)	1245511	50.8150	51
*	81 1,4-Dichlorobenzene-d4	152	12.215	12.219	(1.000)	451612	50.0000	
M	63 Xylene (Total)	106				547530	44.9093	45

TRB 4/2/03

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

4B

SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLK2K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: S2D2836 Lab Sample ID: MB-6081

Instrument ID: S2 Date Extracted: 03/13/03

Matrix: (soil/water) WATER Date Analyzed: 03/27/03

Level: (low/med) LOW Time Analyzed: 1508

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	FTAMW-55S	B0412-02E	S2D2818	03/26/03
02	FTAMW103I	B0412-04E	S2D2820	03/26/03
03	FTAMW103S	B0412-06E	S2D2822	03/26/03
04	S2KLCS	LCS-6081	S2D2837	03/27/03
05	S2KLCSD	LCSD-6081	S2D2838	03/27/03
06	FTAMW103D	B0412-03E	S2D2866	03/28/03
07	FTAMW103IRE	B0412-04ERE	S2D2867	03/28/03
08	FTAMW104S	B0412-05E	S2D2868	03/28/03
09	FTAMW103SRE	B0412-06ERE	S2D2869	03/28/03
10	FTAMDUP13	B0412-07E	S2D2870	03/28/03
11	FTAMW-55SDL	B0412-02EDL	S2D2871	03/28/03
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COMMENTS:

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: MB-6081

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2836

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK2K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: MB-6081

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2836

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/13/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/27/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	7	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: S2D2718 DFTPP Injection Date: 03/21/03

Instrument ID: S2 DFTPP Injection Time: 1020

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	42.3
68	Less than 2.0% of mass 69	0.1 (0.2)1
69	Mass 69 relative abundance	61.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	47.9
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	22.4
365	Greater than 1.0% of mass 198	2.62
441	Present, but less than mass 443	14.0
442	40.0 - 99.9% of mass 198	88.3
443	17.0 - 23.0% of mass 442	16.7 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502C	SS0321A	S2D2719	03/21/03	1036
02	SSTD1602C	SS0321B	S2D2720	03/21/03	1116
03	SSTD0102C	SS0321C	S2D2721	03/21/03	1155
04	SSTD1202C	SS0321D	S2D2722	03/21/03	1235
05	SSTD0202C	SS0321E	S2D2723	03/21/03	1314
06	SSTD0802C	SS0321F	S2D2724	03/21/03	1354
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF10 =S2D2721 RRF20 =S2D2723
RRF50 =S2D2719 RRF80 =S2D2724 RRF120=S2D2722

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.499		1.577	1.475	1.433			*
bis(2-Chloroethyl)Ether	*	1.289		1.349	1.228	1.165			*
2-Chlorophenol	*	1.334		1.357	1.327	1.282			*
2-Methylphenol	*	1.169		1.179	1.135	1.086			*
2,2'-oxybis(1-Chloropropane)	*	1.820		1.729	1.492	1.350			*
4-Methylphenol	*	1.198		1.224	1.205	1.153			*
N-Nitroso-di-n-propylamine	*	0.945		0.933	0.829	0.751			*
Hexachloroethane	*	0.633		0.648	0.616	0.579			*
Nitrobenzene	*	0.414		0.416	0.392	0.383			*
Isophorone	*	0.597		0.593	0.567	0.534			*
2-Nitrophenol	*	0.210		0.227	0.220	0.219			*
2,4-Dimethylphenol	*	0.316		0.296	0.300	0.294			*
2,4-Dichlorophenol	*	0.284		0.328	0.331	0.329			*
Naphthalene	*	1.071		1.096	1.062	1.068			*
4-Chloroaniline	*	0.516		0.228	0.196	0.121			*
bis(2-Chloroethoxy)methane	*	0.452		0.450	0.438	0.427			*
Hexachlorobutadiene	*	0.197		0.213	0.212	0.207			*
4-Chloro-3-Methylphenol	*	0.296		0.328	0.317	0.316			*
2-Methylnaphthalene	*	0.846		0.900	0.864	0.860			*
Hexachlorocyclopentadiene	*	0.153		0.280	0.316	0.335			*
2,4,6-Trichlorophenol	*	0.339		0.404	0.394	0.404			*
2,4,5-Trichlorophenol	*		0.400	0.435	0.427	0.437			*
2-Chloronaphthalene	*	1.157		1.237	1.163	1.122			*
2-Nitroaniline	*		0.508	0.544	0.480	0.477			*
Dimethylphthalate	*	1.353		1.368	1.280	1.278			*
Acenaphthylene	*	1.824		1.914	1.803	1.818			*
2,6-Dinitrotoluene	*	0.322		0.338	0.325	0.322			*
3-Nitroaniline	*		0.466	0.503	0.452	0.421			*
Acenaphthene	*	1.068		1.102	1.032	1.090			*
2,4-Dinitrophenol	*		0.138	0.151	0.180	0.203			*
4-Nitrophenol	*		0.092	0.134	0.142	0.154			*
Dibenzofuran	*	2.125		2.171	2.100	2.068			*
2,4-Dinitrotoluene	*	0.417		0.443	0.408	0.412			*
Diethylphthalate	*	1.342		1.366	1.273	1.269			*
4-Chlorophenyl-phenylether	*	0.596		0.668	0.637	0.633			*
Fluorene	*	1.276		1.356	1.227	1.223			*
4-Nitroaniline	*		0.426	0.450	0.328	0.345			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF10 =S2D2721 RRF20 =S2D2723
RRF50 =S2D2719 RRF80 =S2D2724 RRF120=S2D2722

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.147	0.181	0.176	0.189			*
N-Nitrosodiphenylamine (1)	*	0.460		0.366	0.322	0.308			*
4-Bromophenyl-phenylether	*	0.230		0.242	0.244	0.248			*
Hexachlorobenzene	*	0.294		0.300	0.296	0.300			*
Pentachlorophenol	*		0.057	0.103	0.118	0.129			*
Phenanthrene	*	1.060		1.137	1.094	1.114			*
Anthracene	*	1.082		1.065	1.051	1.103			*
Di-n-butylphthalate	*	1.364		1.428	1.394	1.377			*
Fluoranthene	*	1.128		1.173	1.180	1.195			*
Pyrene	*	1.081		1.136	1.098	1.101			*
Butylbenzylphthalate	*	0.554		0.580	0.557	0.567			*
3,3'-Dichlorobenzidine		0.470		0.453	0.407	0.373			
Benzo(a)anthracene	*	1.070		1.082	1.034	1.011			*
Chrysene	*	0.934		0.959	0.962	0.967			*
bis(2-Ethylhexyl)phthalate	*	0.772		0.811	0.787	0.783			*
Di-n-octylphthalate	*	1.871		2.176	2.059	2.044			*
Benzo(b)fluoranthene	*	1.385		1.650	1.603	1.651			*
Benzo(k)fluoranthene	*	1.450		1.597	1.577	1.597			*
Benzo(a)pyrene	*	1.275		1.364	1.328	1.335			*
Indeno(1,2,3-cd)pyrene	*	1.454		1.687	1.645	1.638			*
Dibenzo(a,h)anthracene	*	1.208		1.413	1.390	1.386			*
Benzo(g,h,i)perylene	*	1.214		1.395	1.284	1.310			*
Nitrobenzene-d5		0.424		0.444	0.426	0.422			*
2-Fluorobiphenyl	*	1.395		1.543	1.443	1.449			*
Terphenyl-d14	*	0.811		0.848	0.836	0.821			*
Phenol-d5	*	1.494		1.540	1.483	1.426			*
2-Fluorophenol	*	1.052		1.208	1.210	1.185			*
2,4,6-Tribromophenol	*	0.140		0.154	0.152	0.152			*
2-Chlorophenol-d4	*	1.322		1.350	1.321	1.270			*
1,2-Dichlorobenzene-d4	*	0.926		0.927	0.891	0.863			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND		RRF160						$\overline{RRF}$	% RSD
Phenol	*	1.475						1.492	3.6*
bis(2-Chloroethyl)Ether	*	1.158						1.238	6.6*
2-Chlorophenol	*	1.301						1.320	2.2*
2-Methylphenol	*	1.122						1.138	3.3*
2,2'-oxybis(1-Chloropropane)	*	1.363						1.551	13.8*
4-Methylphenol	*	1.166						1.189	2.5*
N-Nitroso-di-n-propylamine	*	0.678						0.827	13.9*
Hexachloroethane	*	0.593						0.614	4.6*
Nitrobenzene	*	0.400						0.401	3.5*
Isophorone	*	0.557						0.570	4.6*
2-Nitrophenol	*	0.233						0.222	4.0*
2,4-Dimethylphenol	*	0.335						0.308	5.6*
2,4-Dichlorophenol	*	0.325						0.319	6.2*
Naphthalene	*	1.104						1.080	1.7*
4-Chloroaniline	*	0.111						0.234	70.3*
bis(2-Chloroethoxy)methane	*	0.443						0.442	2.3*
Hexachlorobutadiene	*	0.214						0.209	3.3*
4-Chloro-3-Methylphenol	*	0.312						0.314	3.7*
2-Methylnaphthalene	*	0.884						0.871	2.4*
Hexachlorocyclopentadiene	*	0.374						0.292	28.9*
2,4,6-Trichlorophenol	*	0.439						0.396	9.2*
2,4,5-Trichlorophenol	*	0.474						0.435	6.1*
2-Chloronaphthalene	*	1.245						1.185	4.5*
2-Nitroaniline	*	0.547						0.511	6.6*
Dimethylphthalate	*	1.358						1.327	3.4*
Acenaphthylene	*	1.864						1.845	2.4*
2,6-Dinitrotoluene	*	0.343						0.330	3.0*
3-Nitroaniline	*	0.442						0.457	6.7*
Acenaphthene	*	1.120						1.082	3.1*
2,4-Dinitrophenol	*	0.225						0.179	19.9*
4-Nitrophenol	*	0.167						0.138	20.7*
Dibenzofuran	*	2.106						2.114	1.8*
2,4-Dinitrotoluene	*	0.459						0.428	5.2*
Diethylphthalate	*	1.374						1.325	3.8*
4-Chlorophenyl-phenylether	*	0.679						0.643	5.1*
Fluorene	*	1.310						1.278	4.4*
4-Nitroaniline	*	0.370						0.384	13.6*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date(s): 03/21/03 03/21/03

Calibration Time(s): 1036 1354

LAB FILE ID: RRF160=S2D2720

COMPOUND	RRF160					RRF	% RSD
4,6-Dinitro-2-methylphenol	* 0.196					0.178	10.5*
N-Nitrosodiphenylamine (1)	* 0.312					0.354	18.1*
4-Bromophenyl-phenylether	* 0.252					0.243	3.3*
Hexachlorobenzene	* 0.305					0.299	1.5*
Pentachlorophenol	* 0.140					0.109	29.3*
Phenanthrene	* 1.155					1.112	3.3*
Anthracene	* 1.138					1.088	3.1*
Di-n-butylphthalate	* 1.442					1.401	2.4*
Fluoranthene	* 1.235					1.182	3.3*
Pyrene	* 1.123					1.108	2.0*
Butylbenzylphthalate	* 0.585					0.569	2.4*
3,3'-Dichlorobenzidine	0.396					0.420	9.6
Benzo(a)anthracene	* 1.038					1.047	2.7*
Chrysene	* 1.002					0.965	2.5*
bis(2-Ethylhexyl)phthalate	* 0.798					0.790	1.9*
Di-n-octylphthalate	* 2.135					2.057	5.7*
Benzo(b)fluoranthene	* 1.903					1.638	11.2*
Benzo(k)fluoranthene	* 1.435					1.531	5.3*
Benzo(a)pyrene	* 1.425					1.345	4.1*
Indeno(1,2,3-cd)pyrene	* 1.687					1.622	6.0*
Dibenzo(a,h)anthracene	* 1.408					1.361	6.3*
Benzo(g,h,i)perylene	* 1.355					1.312	5.3*
Nitrobenzene-d5	0.445					0.432	2.7*
2-Fluorobiphenyl	* 1.582					1.482	5.2*
Terphenyl-d14	* 0.839					0.831	1.8*
Phenol-d5	* 1.447					1.478	3.0*
2-Fluorophenol	* 1.246					1.180	6.4*
2,4,6-Tribromophenol	* 0.156					0.151	4.1*
2-Chlorophenol-d4	* 1.303					1.313	2.2*
1,2-Dichlorobenzene-d4	* 0.883					0.898	3.1*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: S2D2812 DFTPP Injection Date: 03/26/03

Instrument ID: S2 DFTPP Injection Time: 1023

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	51.8
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	57.2
70	Less than 2.0% of mass 69	0.4 (0.8)1
127	40.0 - 60.0% of mass 198	50.5
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	22.6
365	Greater than 1.0% of mass 198	4.15
441	Present, but less than mass 443	10.8
442	40.0 - 99.9% of mass 198	67.6
443	17.0 - 23.0% of mass 442	13.3 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502I	SS0326A	S2D2813	03/26/03	1045
02	FTAMW-55S	B0412-02E	S2D2818	03/26/03	1401
03	FTAMW103I	B0412-04E	S2D2820	03/26/03	1519
04	FTAMW103S	B0412-06E	S2D2822	03/26/03	1637
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/26/03 Time: 1045

Lab File ID: S2D2813 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.492	1.460	0.05	2.1	20.0
bis(2-Chloroethyl)Ether	1.238	1.096	0.05	11.5	100
2-Chlorophenol	1.320	1.258	0.05	4.7	100
2-Methylphenol	1.138	1.024	0.05	10.0	100
2,2'-oxybis(1-Chloropropane)	1.551	1.133	0.05	27.0	100
4-Methylphenol	1.189	1.124	0.05	5.5	100
N-Nitroso-di-n-propylamine	0.827	0.697	0.05	15.7	100
Hexachloroethane	0.614	0.582	0.05	5.2	100
Nitrobenzene	0.401	0.373	0.05	7.0	100
Isophorone	0.570	0.554	0.05	2.8	100
2-Nitrophenol	0.222	0.236	0.05	6.3	20.0
2,4-Dimethylphenol	0.308	0.319	0.05	3.6	100
2,4-Dichlorophenol	0.319	0.340	0.05	6.6	20.0
Naphthalene	1.080	0.966	0.05	10.6	100
4-Chloroaniline	0.234	0.152	0.05	35.0	100
bis(2-Chloroethoxy)methane	0.442	0.393	0.05	11.1	100
Hexachlorobutadiene	0.209	0.213	0.05	1.9	20.0
4-Chloro-3-Methylphenol	0.314	0.338	0.05	7.6	20.0
2-Methylnaphthalene	0.871	0.818	0.05	6.1	100
Hexachlorocyclopentadiene	0.292	0.172	0.05	41.1	100
2,4,6-Trichlorophenol	0.396	0.432	0.05	9.1	100
2,4,5-Trichlorophenol	0.435	0.490	0.05	12.6	100
2-Chloronaphthalene	1.185	1.150	0.05	3.0	100
2-Nitroaniline	0.511	0.495	0.05	3.1	100
Dimethylphthalate	1.327	1.561	0.05	17.6	100
Acenaphthylene	1.845	1.921	0.05	4.1	100
2,6-Dinitrotoluene	0.330	0.373	0.05	13.0	100
3-Nitroaniline	0.457	0.437	0.05	4.4	100
Acenaphthene	1.082	1.144	0.05	5.7	20.0
2,4-Dinitrophenol	0.179	0.232	0.05	29.6	100
4-Nitrophenol	0.138	0.182	0.05	31.9	100
Dibenzofuran	2.114	2.267	0.05	7.2	100
2,4-Dinitrotoluene	0.428	0.518	0.05	21.0	100
Diethylphthalate	1.325	1.594	0.05	20.3	100
4-Chlorophenyl-phenylether	0.643	0.685	0.05	6.5	100
Fluorene	1.278	1.419	0.05	11.0	100
4-Nitroaniline	0.384	0.467	0.05	21.6	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/26/03 Time: 1045

Lab File ID: S2D2813 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.178	0.186	0.05	4.5	100
N-Nitrosodiphenylamine	0.354	0.324	0.05	8.5	20.0
4-Bromophenyl-phenylether	0.243	0.247	0.05	1.6	100
Hexachlorobenzene	0.299	0.293	0.05	2.0	100
Pentachlorophenol	0.109	0.118	0.05	8.2	20.0
Phenanthrene	1.112	1.071	0.05	3.7	100
Anthracene	1.088	1.017	0.05	6.5	100
Di-n-butylphthalate	1.401	1.393	0.05	0.6	100
Fluoranthene	1.182	1.089	0.05	7.9	20.0
Pyrene	1.108	1.207	0.05	8.9	100
Butylbenzylphthalate	0.569	0.663	0.05	16.5	100
3,3'-Dichlorobenzidine	0.420	0.420	0.05	0.0	100
Benzo(a)anthracene	1.047	1.093	0.05	4.4	100
Chrysene	0.965	0.960	0.05	0.5	100
bis(2-Ethylhexyl)phthalate	0.790	0.840	0.05	6.3	100
Di-n-octylphthalate	2.057	2.238	0.05	8.8	20.0
Benzo(b)fluoranthene	1.638	1.611	0.05	1.6	100
Benzo(k)fluoranthene	1.531	1.543	0.05	0.8	100
Benzo(a)pyrene	1.345	1.347	0.05	0.1	20.0
Indeno(1,2,3-cd)pyrene	1.622	1.562	0.05	3.7	100
Dibenzo(a,h)anthracene	1.361	1.283	0.05	5.7	100
Benzo(g,h,i)perylene	1.312	1.260	0.05	4.0	100
Nitrobenzene-d5	0.432	0.419	0.05	3.0	100
2-Fluorobiphenyl	1.482	1.480	0.05	0.1	100
Terphenyl-d14	0.831	0.924	0.05	11.2	100
Phenol-d5	1.478	1.431	0.05	3.2	100
2-Fluorophenol	1.180	1.133	0.05	4.0	100
2,4,6-Tribromophenol	0.151	0.163	0.05	7.9	100
2-Chlorophenol-d4	1.313	1.272	0.05	3.1	100
1,2-Dichlorobenzene-d4	0.898	0.889	0.05	1.0	100

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: S2D2832 DFTPP Injection Date: 03/27/03

Instrument ID: S2 DFTPP Injection Time: 1252

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	48.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	50.6
70	Less than 2.0% of mass 69	0.5 (1.1)1
127	40.0 - 60.0% of mass 198	46.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	25.0
365	Greater than 1.0% of mass 198	4.55
441	Present, but less than mass 443	14.9
442	40.0 - 99.9% of mass 198	94.2
443	17.0 - 23.0% of mass 442	18.4 (19.5)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502J	SS0327A	S2D2833	03/27/03	1310
02	SBLK2K	MB-6081	S2D2836	03/27/03	1508
03	S2KLCS	LCS-6081	S2D2837	03/27/03	1548
04	S2KLCSD	LCSD-6081	S2D2838	03/27/03	1629
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/27/03 Time: 1310

Lab File ID: S2D2833 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.492	1.391	0.05	6.8	20.0
bis(2-Chloroethyl)Ether	1.238	1.073	0.05	13.3	100
2-Chlorophenol	1.320	1.252	0.05	5.2	100
2-Methylphenol	1.138	1.031	0.05	9.4	100
2,2'-oxybis(1-Chloropropane)	1.551	1.128	0.05	27.3	100
4-Methylphenol	1.189	1.115	0.05	6.2	100
N-Nitroso-di-n-propylamine	0.827	0.699	0.05	15.5	100
Hexachloroethane	0.614	0.607	0.05	1.1	100
Nitrobenzene	0.401	0.376	0.05	6.2	100
Isophorone	0.570	0.532	0.05	6.7	100
2-Nitrophenol	0.222	0.236	0.05	6.3	20.0
2,4-Dimethylphenol	0.308	0.318	0.05	3.2	100
2,4-Dichlorophenol	0.319	0.339	0.05	6.3	20.0
Naphthalene	1.080	0.967	0.05	10.5	100
4-Chloroaniline	0.234	0.120	0.05	48.7	100
bis(2-Chloroethoxy)methane	0.442	0.388	0.05	12.2	100
Hexachlorobutadiene	0.209	0.217	0.05	3.8	20.0
4-Chloro-3-Methylphenol	0.314	0.325	0.05	3.5	20.0
2-Methylnaphthalene	0.871	0.820	0.05	5.8	100
Hexachlorocyclopentadiene	0.292	0.180	0.05	38.4	100
2,4,6-Trichlorophenol	0.396	0.409	0.05	3.3	100
2,4,5-Trichlorophenol	0.435	0.477	0.05	9.6	100
2-Chloronaphthalene	1.185	1.164	0.05	1.8	100
2-Nitroaniline	0.511	0.510	0.05	0.2	100
Dimethylphthalate	1.327	1.517	0.05	14.3	100
Acenaphthylene	1.845	1.904	0.05	3.2	100
2,6-Dinitrotoluene	0.330	0.361	0.05	9.4	100
3-Nitroaniline	0.457	0.442	0.05	3.3	100
Acenaphthene	1.082	1.124	0.05	3.9	20.0
2,4-Dinitrophenol	0.179	0.235	0.05	31.3	100
4-Nitrophenol	0.138	0.196	0.05	42.0	100
Dibenzofuran	2.114	2.274	0.05	7.6	100
2,4-Dinitrotoluene	0.428	0.501	0.05	17.0	100
Diethylphthalate	1.325	1.585	0.05	19.6	100
4-Chlorophenyl-phenylether	0.643	0.675	0.05	5.0	100
Fluorene	1.278	1.410	0.05	10.3	100
4-Nitroaniline	0.384	0.448	0.05	16.7	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/27/03 Time: 1310

Lab File ID: S2D2833 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.178	0.182	0.05	2.2	100
N-Nitrosodiphenylamine	0.354	0.323	0.05	8.8	20.0
4-Bromophenyl-phenylether	0.243	0.247	0.05	1.6	100
Hexachlorobenzene	0.299	0.302	0.05	1.0	100
Pentachlorophenol	0.109	0.099	0.05	9.2	20.0
Phenanthrene	1.112	1.063	0.05	4.4	100
Anthracene	1.088	1.073	0.05	1.4	100
Di-n-butylphthalate	1.401	1.385	0.05	1.1	100
Fluoranthene	1.182	1.096	0.05	7.3	20.0
Pyrene	1.108	1.144	0.05	3.2	100
Butylbenzylphthalate	0.569	0.638	0.05	12.1	100
3,3'-Dichlorobenzidine	0.420	0.388	0.05	7.6	100
Benzo(a)anthracene	1.047	1.035	0.05	1.1	100
Chrysene	0.965	1.012	0.05	4.9	100
bis(2-Ethylhexyl)phthalate	0.790	0.812	0.05	2.8	100
Di-n-octylphthalate	2.057	2.273	0.05	10.5	20.0
Benzo(b)fluoranthene	1.638	1.638	0.05	0.0	100
Benzo(k)fluoranthene	1.531	1.752	0.05	14.4	100
Benzo(a)pyrene	1.345	1.365	0.05	1.5	20.0
Indeno(1,2,3-cd)pyrene	1.622	1.686	0.05	3.9	100
Dibenzo(a,h)anthracene	1.361	1.425	0.05	4.7	100
Benzo(g,h,i)perylene	1.312	1.334	0.05	1.7	100
Nitrobenzene-d5	0.432	0.423	0.05	2.1	100
2-Fluorobiphenyl	1.482	1.483	0.05	0.1	100
Terphenyl-d14	0.831	0.862	0.05	3.7	100
Phenol-d5	1.478	1.406	0.05	4.9	100
2-Fluorophenol	1.180	1.123	0.05	4.8	100
2,4,6-Tribromophenol	0.151	0.164	0.05	8.6	100
2-Chlorophenol-d4	1.313	1.283	0.05	2.3	100
1,2-Dichlorobenzene-d4	0.898	0.922	0.05	2.7	100

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID: S2D2861 DFTPP Injection Date: 03/28/03

Instrument ID: S2 DFTPP Injection Time: 1043

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	55.7
68	Less than 2.0% of mass 69	0.6 (1.0)1
69	Mass 69 relative abundance	57.5
70	Less than 2.0% of mass 69	0.2 (0.3)1
127	40.0 - 60.0% of mass 198	47.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	24.2
365	Greater than 1.0% of mass 198	4.77
441	Present, but less than mass 443	14.3
442	40.0 - 99.9% of mass 198	88.1
443	17.0 - 23.0% of mass 442	16.6 (18.9)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502L	SS0328A	S2D2862	03/28/03	1102
02	FTAMW103D	B0412-03E	S2D2866	03/28/03	1513
03	FTAMW103IRE	B0412-04ERE	S2D2867	03/28/03	1552
04	FTAMW104S	B0412-05E	S2D2868	03/28/03	1631
05	FTAMW103SRE	B0412-06ERE	S2D2869	03/28/03	1711
06	FTAMDUP13	B0412-07E	S2D2870	03/28/03	1751
07	FTAMW-55SDL	B0412-02EDL	S2D2871	03/28/03	1831
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FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/28/03 Time: 1102

Lab File ID: S2D2862 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.492	1.327	0.05	11.0	20.0
bis(2-Chloroethyl)Ether	1.238	0.957	0.05	22.7	100
2-Chlorophenol	1.320	1.216	0.05	7.9	100
2-Methylphenol	1.138	0.991	0.05	12.9	100
2,2'-oxybis(1-Chloropropane)	1.551	1.009	0.05	34.9	100
4-Methylphenol	1.189	1.061	0.05	10.8	100
N-Nitroso-di-n-propylamine	0.827	0.664	0.05	19.7	100
Hexachloroethane	0.614	0.608	0.05	1.0	100
Nitrobenzene	0.401	0.388	0.05	3.2	100
Isophorone	0.570	0.550	0.05	3.5	100
2-Nitrophenol	0.222	0.240	0.05	8.1	20.0
2,4-Dimethylphenol	0.308	0.327	0.05	6.2	100
2,4-Dichlorophenol	0.319	0.354	0.05	11.0	20.0
Naphthalene	1.080	1.008	0.05	6.7	100
4-Chloroaniline	0.234	0.151	0.05	35.5	100
bis(2-Chloroethoxy)methane	0.442	0.398	0.05	10.0	100
Hexachlorobutadiene	0.209	0.237	0.05	13.4	20.0
4-Chloro-3-Methylphenol	0.314	0.349	0.05	11.1	20.0
2-Methylnaphthalene	0.871	0.878	0.05	0.8	100
Hexachlorocyclopentadiene	0.292	0.149	0.05	49.0	100
2,4,6-Trichlorophenol	0.396	0.402	0.05	1.5	100
2,4,5-Trichlorophenol	0.435	0.435	0.05	0.0	100
2-Chloronaphthalene	1.185	1.111	0.05	6.2	100
2-Nitroaniline	0.511	0.484	0.05	5.3	100
Dimethylphthalate	1.327	1.496	0.05	12.7	100
Acenaphthylene	1.845	1.815	0.05	1.6	100
2,6-Dinitrotoluene	0.330	0.342	0.05	3.6	100
3-Nitroaniline	0.457	0.455	0.05	0.4	100
Acenaphthene	1.082	1.110	0.05	2.6	20.0
2,4-Dinitrophenol	0.179	0.212	0.05	18.4	100
4-Nitrophenol	0.138	0.189	0.05	37.0	100
Dibenzofuran	2.114	2.185	0.05	3.4	100
2,4-Dinitrotoluene	0.428	0.490	0.05	14.5	100
Diethylphthalate	1.325	1.552	0.05	17.1	100
4-Chlorophenyl-phenylether	0.643	0.686	0.05	6.7	100
Fluorene	1.278	1.388	0.05	8.6	100
4-Nitroaniline	0.384	0.485	0.05	26.3	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: S2 Calibration Date: 03/28/03 Time: 1102

Lab File ID: S2D2862 Init. Calib. Date(s): 03/21/03 03/21/03

Init. Calib. Times: 1036 1354

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	RRF	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.178	0.179	0.05	0.6	100
N-Nitrosodiphenylamine	0.354	0.329	0.05	7.1	20.0
4-Bromophenyl-phenylether	0.243	0.244	0.05	0.4	100
Hexachlorobenzene	0.299	0.310	0.05	3.7	100
Pentachlorophenol	0.109	0.096	0.05	11.9	20.0
Phenanthrene	1.112	1.052	0.05	5.4	100
Anthracene	1.088	1.118	0.05	2.8	100
Di-n-butylphthalate	1.401	1.423	0.05	1.6	100
Fluoranthene	1.182	1.168	0.05	1.2	20.0
Pyrene	1.108	1.153	0.05	4.1	100
Butylbenzylphthalate	0.569	0.639	0.05	12.3	100
3,3'-Dichlorobenzidine	0.420	0.415	0.05	1.2	100
Benzo(a)anthracene	1.047	1.037	0.05	1.0	100
Chrysene	0.965	1.059	0.05	9.7	100
bis(2-Ethylhexyl)phthalate	0.790	0.759	0.05	3.9	100
Di-n-octylphthalate	2.057	2.282	0.05	10.9	20.0
Benzo(b)fluoranthene	1.638	1.512	0.05	7.7	100
Benzo(k)fluoranthene	1.531	2.020	0.05	31.9	100
Benzo(a)pyrene	1.345	1.437	0.05	6.8	20.0
Indeno(1,2,3-cd)pyrene	1.622	1.572	0.05	3.1	100
Dibenzo(a,h)anthracene	1.361	1.392	0.05	2.3	100
Benzo(g,h,i)perylene	1.312	1.175	0.05	10.4	100
Nitrobenzene-d5	0.432	0.423	0.05	2.1	100
2-Fluorobiphenyl	1.482	1.453	0.05	2.0	100
Terphenyl-d14	0.831	0.887	0.05	6.7	100
Phenol-d5	1.478	1.330	0.05	10.0	100
2-Fluorophenol	1.180	1.059	0.05	10.2	100
2,4,6-Tribromophenol	0.151	0.166	0.05	9.9	100
2-Chlorophenol-d4	1.313	1.234	0.05	6.0	100
1,2-Dichlorobenzene-d4	0.898	0.905	0.05	0.8	100

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		22	88	0-127
bis(2-Chloroethyl)Ether	25		25	100	46-109
2-Chlorophenol	25		22	88	22-117
2-Methylphenol	25		23	92	40-104
2,2'-oxybis(1-Chloropro	25		22	88	10-134
4-Methylphenol	25		25	100	35-106
N-Nitroso-di-n-prop.(1)	25		22	88	44-122
Hexachloroethane	25		19	76	24-104
Nitrobenzene	25		24	96	47-112
Isophorone	25		33	132*	48-118
2-Nitrophenol	25		26	104	29-122
2,4-Dimethylphenol	25		19	76	14-109
2,4-Dichlorophenol	25		26	104	31-122
Naphthalene	25		22	88	38-117
4-Chloroaniline	25		43	172*	0-152
bis(2-Chloroethoxy)meth	25		25	100	49-112
Hexachlorobutadiene	25		22	88	28-109
4-Chloro-3-Methylphenol	25		28	112	48-117
2-Methylnaphthalene	25		20	80	43-113
Hexachlorocyclopentadie	25		3	12*	34-103
2,4,6-Trichlorophenol	25		23	92	34-127
2,4,5-Trichlorophenol	25		26	104	32-131
2-Chloronaphthalene	25		26	104	47-116
2-Nitroaniline	25		20	80	51-120
Dimethylphthalate	25		31	124	53-124
Acenaphthylene	25		26	104	50-119
2,6-Dinitrotoluene	25		30	120	52-122
3-Nitroaniline	25		20	80	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		28	112	50-121
2,4-Dinitrophenol					0-144
4-Nitrophenol	25		12	48	0-160
Dibenzofuran	25		21	84	51-122
2,4-Dinitrotoluene	25		30	120	52-126
Diethylphthalate	25		33	132*	53-126
4-Chlorophenyl-phenylet	25		28	112	50-124
Fluorene	25		28	112	52-125
4-Nitroaniline	25		23	92	47-117
4,6-Dinitro-2-methylphe	25		1	4*	3-151
N-Nitrosodiphenylamine	25		52	208*	50-150
4-Bromophenyl-phenyleth	25		28	112	51-124
Hexachlorobenzene	25		28	112	52-124
Pentachlorophenol	25		11	44	5-125
Phenanthrene	25		26	104	52-128
Anthracene	25		28	112	52-127
Di-n-butylphthalate	25		30	120	56-132
Fluoranthene	25		26	104	53-130
Pyrene	25		31	124	53-131
Butylbenzylphthalate	25		32	128	54-128
3,3'-Dichlorobenzidine	25		24	96	41-117
Benzo(a)anthracene	25		28	112	56-124
Chrysene	25		28	112	53-123
bis(2-Ethylhexyl)phthal	25		38	152*	56-127
Di-n-octylphthalate	25		28	112	59-138
Benzo(b)fluoranthene	25		27	108	58-126
Benzo(k)fluoranthene	25		29	116	60-124
Benzo(a)pyrene	25		27	108	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		28	112	23-152
Dibenzo(a,h)anthracene	25		27	108	60-122
Benzo(g,h,i)perylene	25		27	108	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	23	92	4	40	0-127
bis(2-Chloroethyl)Ether	25	22	88	13	40	46-109
2-Chlorophenol	25	21	84	5	40	22-117
2-Methylphenol	25	20	80	14	40	40-104
2,2'-oxybis(1-Chloropro	25	21	84	5	40	10-134
4-Methylphenol	25	24	96	4	40	35-106
N-Nitroso-di-n-prop.(1)	25	22	88	0	40	44-122
Hexachloroethane	25	19	76	0	40	24-104
Nitrobenzene	25	24	96	0	40	47-112
Isophorone	25	32	128*	3	40	48-118
2-Nitrophenol	25	25	100	4	40	29-122
2,4-Dimethylphenol	25	10	40	62*	40	14-109
2,4-Dichlorophenol	25	25	100	4	40	31-122
Naphthalene	25	22	88	0	40	38-117
4-Chloroaniline	25	37	148	15	40	0-152
bis(2-Chloroethoxy)meth	25	24	96	4	40	49-112
Hexachlorobutadiene	25	21	84	5	40	28-109
4-Chloro-3-Methylphenol	25	26	104	7	40	48-117
2-Methylnaphthalene	25	18	72	10	40	43-113
Hexachlorocyclopentadie	25	3	12*	0	40	34-103
2,4,6-Trichlorophenol	25	23	92	0	40	34-127
2,4,5-Trichlorophenol	25	26	104	0	40	32-131
2-Chloronaphthalene	25	24	96	8	40	47-116
2-Nitroaniline	25	18	72	10	40	51-120
Dimethylphthalate	25	30	120	3	40	53-124
Acenaphthylene	25	26	104	0	40	50-119
2,6-Dinitrotoluene	25	28	112	7	40	52-122
3-Nitroaniline	25	18	72	10	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	27	108	4	40	50-121
2,4-Dinitrophenol	25	9	36		40	0-144
4-Nitrophenol	25	23	92	63*	40	0-160
Dibenzofuran	25	20	80	5	40	51-122
2,4-Dinitrotoluene	25	29	116	3	40	52-126
Diethylphthalate	25	31	124	6	40	53-126
4-Chlorophenyl-phenylet	25	27	108	4	40	50-124
Fluorene	25	27	108	4	40	52-125
4-Nitroaniline	25	21	84	9	40	47-117
4,6-Dinitro-2-methylphe	25	14	56	173*	40	3-151
N-Nitrosodiphenylamine	25	49	196*	6	40	50-150
4-Bromophenyl-phenyleth	25	28	112	0	40	51-124
Hexachlorobenzene	25	27	108	4	40	52-124
Pentachlorophenol	25	15	60	31	40	5-125
Phenanthrene	25	26	104	0	40	52-128
Anthracene	25	27	108	4	40	52-127
Di-n-butylphthalate	25	29	116	3	40	56-132
Fluoranthene	25	26	104	0	40	53-130
Pyrene	25	30	120	3	40	53-131
Butylbenzylphthalate	25	32	128	0	40	54-128
3,3'-Dichlorobenzidine	25	21	84	13	40	41-117
Benzo(a)anthracene	25	27	108	4	40	56-124
Chrysene	25	28	112	0	40	53-123
bis(2-Ethylhexyl)phthal	25	28	112	30	40	56-127
Di-n-octylphthalate	25	27	108	4	40	59-138
Benzo(b)fluoranthene	25	24	96	12	40	58-126
Benzo(k)fluoranthene	25	31	124	7	40	60-124
Benzo(a)pyrene	25	26	104	4	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: S2KLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	26	104	7	40	23-152
Dibenzo(a,h)anthracene	25	26	104	4	40	60-122
Benzo(g,h,i)perylene	25	26	104	4	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 3 out of 59 outside limits
Spike Recovery: 9 out of 118 outside limits

COMMENTS: _____

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	FTAMW-55S	97	84	182*	108	86	137*	101	90	2
02	FTAMW103I	89	89	148*	90	78	126*	91	88	2
03	FTAMW103S	90	89	167*	92	79	123*	93	86	2
04	SBLK2K	95	97	124	79	52	101	76	94	0
05	S2KLCS	92	93	116	84	63	109	84	88	0
06	S2KLCSD	91	93	115	85	60	111	84	90	0
07	FTAMW103D	89	88	130	88	72	113	92	89	0
08	FTAMW103IRE	90	92	114	90	78	132*	92	90	1
09	FTAMW104S	82	83	103	83	73	113	84	80	0
10	FTAMW103SRE	90	89	115	89	79	127*	90	88	1
11	FTAMDUP13	77	80	112	77	64	110	80	76	0
12	FTAMW-55SDL	95	95	94	103	78	138D	101	94	0
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2813 Date Analyzed: 03/26/03

Instrument ID: S2 Time Analyzed: 1045

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	181733	6.80	598251	9.17	323380	12.63
	UPPER LIMIT	363466	7.30	1196502	9.67	646760	13.13
	LOWER LIMIT	90867	6.30	299126	8.67	161690	12.13
	EPA SAMPLE NO.						
01	FTAMW-55S	92509	6.81	299918	9.18	179254	12.66
02	FTAMW103I	138109	6.80	472068	9.17	262765	12.63
03	FTAMW103S	110581	6.80	382609	9.16	218291	12.63
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2813 Date Analyzed: 03/26/03

Instrument ID: S2 Time Analyzed: 1045

		IS4 (PHN) AREA	#	RT	#	IS5 (CRY) AREA	#	RT	#	IS6 (PRY) AREA	#	RT	#
	12 HOUR STD	584385		15.61		526566		20.93		348320		23.59	
	UPPER LIMIT	1168770		16.11		1053132		21.43		696640		24.09	
	LOWER LIMIT	292193		15.11		263283		20.43		174160		23.09	
	EPA SAMPLE NO.												
01	FTAMW-55S	269533*		15.64		141420*		20.95		32387*		23.61	
02	FTAMW103I	377253		15.61		254460*		20.93		69974*		23.59	
03	FTAMW103S	337616		15.61		203478*		20.93		49326*		23.59	
04													
05													
06													
07													
08													
09													
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11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2833 Date Analyzed: 03/27/03

Instrument ID: S2 Time Analyzed: 1310

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	135780	6.71	455756	9.08	254045	12.55
	UPPER LIMIT	271560	7.21	911512	9.58	508090	13.05
	LOWER LIMIT	67890	6.21	227878	8.58	127023	12.05
	EPA SAMPLE NO.						
01	SBLK2K	90434	6.71	311744	9.08	179650	12.54
02	S2KLCS	104362	6.71	347915	9.08	204103	12.55
03	S2KLCSD	93319	6.72	323045	9.07	189402	12.54
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2833 Date Analyzed: 03/27/03

Instrument ID: S2 Time Analyzed: 1310

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	457856	15.52	431759	20.86	275690	23.52
	UPPER LIMIT	915712	16.02	863518	21.36	551380	24.02
	LOWER LIMIT	228928	15.02	215880	20.36	137845	23.02
	EPA SAMPLE NO.						
01	SBLK2K	294651	15.52	291816	20.85	200504	23.52
02	S2KLCS	339390	15.52	319959	20.85	213629	23.51
03	S2KLCSD	314622	15.51	302576	20.85	208190	23.51
04							
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2862 Date Analyzed: 03/28/03

Instrument ID: S2 Time Analyzed: 1102

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	90995	6.63	292575	8.98	176095	12.45
	UPPER LIMIT	181990	7.13	585150	9.48	352190	12.95
	LOWER LIMIT	45498	6.13	146288	8.48	88048	11.95
	EPA SAMPLE NO.						
01	FTAMW103D	70624	6.62	240186	8.97	142376	12.44
02	FTAMW103IRE	74036	6.62	254556	8.98	146942	12.44
03	FTAMW104S	89069	6.63	301309	8.99	178483	12.44
04	FTAMW103SRE	82574	6.63	277787	8.99	167961	12.44
05	FTAMDUP13	84361	6.63	289161	8.99	173096	12.44
06	FTAMW-55SDL	75043	6.63	249322	8.99	137384	12.45
07							
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22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab File ID (Standard): S2D2862 Date Analyzed: 03/28/03

Instrument ID: S2 Time Analyzed: 1102

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	313187	15.42	304411	20.76	185011	23.42
	UPPER LIMIT	626374	15.92	608822	21.26	370022	23.92
	LOWER LIMIT	156594	14.92	152206	20.26	92506	22.92
	EPA SAMPLE NO.						
01	FTAMW103D	233919	15.41	191279	20.74	86548*	23.41
02	FTAMW103IRE	219003	15.42	206924	20.74	105901	23.41
03	FTAMW104S	296103	15.41	289759	20.74	157196	23.41
04	FTAMW103SRE	263187	15.42	258477	20.75	132646	23.42
05	FTAMDUP13	289593	15.41	271597	20.74	153716	23.41
06	FTAMW-55SDL	201754	15.43	191984	20.74	110963	23.41
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22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT		JOB NUMBER	
NASA Wallops Island		B0412	
SUBJECT			
SVOA (AQ)			
BASED ON		DRAWING NUMBER	
8270C			
BY	CHECKED BY	APPROVED BY	DATE
SCS			

FTAMW-555DL

4-methyl phenol 300 ug/L

$$\frac{(169916\ \text{area})(40\ \text{ng})(1000\ \text{ml})(4)}{(75043\ \text{area})(1.189)(1000\ \text{ml})(1\ \text{ml})} = 304.69\ \text{ng/mL}$$

≃ 305 ug/L

Data File: S2D2871.D
Report Date: 16-Apr-2003 15:06

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030328.B\S2D2871.D
Lab Smp Id: B0412-02EDL Client Smp ID: FTAMW-55SDL
Inj Date : 28-MAR-2003 18:31
Operator : JC Inst ID: s2.i
Smp Info : B0412-02EDL,FTAMW-55SDL,6081,JC,4,B0412
Misc Info : 0,,,1,,,,,,,13-MAR-03,12-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030328.B\S2_8270C.m
Meth Date : 16-Apr-2003 15:01 mtl Quant Type: ISTD
Cal Date : 21-MAR-2003 10:36 Cal File: S2D2719.D ✓
Als bottle: 36
Dil Factor: 4.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub
Target Version: 4.03
Processing Host: TARGET3

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	4.000	Dilution Factor ✓
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	3 2-Fluorophenol	112	4.486	4.473	(0.677)	32404	14.6349	15
$	5 Phenol-d5	99	6.101	6.088	(0.920)	53350	19.2390	19
	6 Phenol	94	6.123	6.109	(0.924)	23770	8.49246	34
$	9 2-Chlorophenol-d4	132	6.241	6.239	(0.942)	46721	18.9619	19(R)
*	12 1,4-Dichlorobenzene-d4	152	6.629	6.626	(1.000)	75043	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	6.887	6.885	(1.039)	19833	11.7734	12(R)
	17 2-Methylphenol	108	7.189	7.175	(1.084)	12629	5.91471	24
	20 4-Methylphenol	108	7.490	7.477	(1.130)	169916	76.1384	300
$	22 Nitrobenzene-d5	82	7.652	7.660	(0.851)	32070	11.9118	12(R)
*	31 Naphthalene-d8	136	8.987	8.984	(1.000)	249322	40.0000	
	32 Naphthalene	128	9.019	9.027	(1.004)	37975	5.64025	22
	36 2-Methylnaphthalene	142	10.397	10.395	(1.157)	6394	1.17757	5(a)
$	41 2-Fluorobiphenyl	172	11.162	11.159	(0.896)	60292	11.8420	12(R)
*	48 Acenaphthene-d10	164	12.454	12.451	(1.000)	137384	40.0000	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	34	D
111-44-4	bis(2-Chloroethyl)Ether	20	U
95-57-8	2-Chlorophenol	20	U
95-48-7	2-Methylphenol	24	D
108-60-1	2,2'-oxybis(1-Chloropropane)	20	U
106-44-5	4-Methylphenol	300	D
621-64-7	N-Nitroso-di-n-propylamine	20	U
67-72-1	Hexachloroethane	20	U
98-95-3	Nitrobenzene	20	U
78-59-1	Isophorone	20	U
88-75-5	2-Nitrophenol	20	U
105-67-9	2,4-Dimethylphenol	20	U
120-83-2	2,4-Dichlorophenol	20	U
91-20-3	Naphthalene	22	D
106-47-8	4-Chloroaniline	20	U
111-91-1	bis(2-Chloroethoxy)methane	20	U
87-68-3	Hexachlorobutadiene	20	U
59-50-7	4-Chloro-3-Methylphenol	20	U
91-57-6	2-Methylnaphthalene	5	DJ
77-47-4	Hexachlorocyclopentadiene	20	U
88-06-2	2,4,6-Trichlorophenol	20	U
95-95-4	2,4,5-Trichlorophenol	80	U
91-58-7	2-Chloronaphthalene	20	U
88-74-4	2-Nitroaniline	80	U
131-11-3	Dimethylphthalate	20	U
208-96-8	Acenaphthylene	20	U
606-20-2	2,6-Dinitrotoluene	20	U
99-09-2	3-Nitroaniline	80	U
83-32-9	Acenaphthene	20	U
51-28-5	2,4-Dinitrophenol	80	U
100-02-7	4-Nitrophenol	80	U
132-64-9	Dibenzofuran	20	U
121-14-2	2,4-Dinitrotoluene	20	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	20	U
7005-72-3	4-Chlorophenyl-phenylether	20	U
86-73-7	Fluorene	20	U
100-01-6	4-Nitroaniline	80	U
534-52-1	4,6-Dinitro-2-methylphenol	80	U
86-30-6	N-Nitrosodiphenylamine (1)	20	U
101-55-3	4-Bromophenyl-phenylether	20	U
118-74-1	Hexachlorobenzene	20	U
87-86-5	Pentachlorophenol	80	U
85-01-8	Phenanthrene	20	U
120-12-7	Anthracene	20	U
84-74-2	Di-n-butylphthalate	20	U
206-44-0	Fluoranthene	20	U
129-00-0	Pyrene	20	U
85-68-7	Butylbenzylphthalate	20	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	20	U
218-01-9	Chrysene	20	U
117-81-7	bis(2-Ethylhexyl)phthalate	20	U
117-84-0	Di-n-octylphthalate	20	U
205-99-2	Benzo(b)fluoranthene	20	U
207-08-9	Benzo(k)fluoranthene	20	U
50-32-8	Benzo(a)pyrene	20	U
193-39-5	Indeno(1,2,3-cd)pyrene	20	U
53-70-3	Dibenzo(a,h)anthracene	20	U
191-24-2	Benzo(g,h,i)perylene	20	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAMW-55SDL

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: B0412-02EDL

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D2871

Level: (low/med) LOW Date Received: 03/12/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/12/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 03/28/03

Injection Volume: 1.0(uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	104-87-0	BENZALDEHYDE, 4-METHYL-	7.41	180	NJD
2.		UNKNOWN	8.06	260	JD
3.		UNKNOWN	8.10	110	JD
4.	118-90-1	BENZOIC ACID, 2-METHYL-	9.81	100	NJD
5.		UNKNOWN	9.85	110	JD
6.		UNKNOWN	10.03	92	JD
7.	87-41-2	1(3H)-ISOBENZOFURANONE	10.98	160	NJD
8.		UNKNOWN	11.81	84	JD
9.	54120-64-8	1(3H)-ISOBENZOFURANONE, 5-ME	12.29	80	NJD
10.		UNKNOWN	12.62	160	JD
11.		UNKNOWN	12.95	140	JD
12.		UNKNOWN	13.01	62	JD
13.		UNKNOWN	13.25	110	JD
14.		UNKNOWN	13.40	87	JD
15.		UNKNOWN	13.46	86	JD
16.		UNKNOWN	13.82	63	JD
17.		UNKNOWN	13.92	80	JD
18.		UNKNOWN	14.63	100	JD
19.	93-09-4	2-NAPHTHALENECARBOXYLIC ACID	14.69	140	NJD
20.		UNKNOWN	14.82	130	JD
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 4
PCB METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

BBLK1B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Lab Sample ID: MB-6111 Lab File ID: E1E0122F

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc) SEPF

Sulfur Cleanup (Y/N) Y Date Extracted: 03/14/03

Date Analyzed (1): 03/26/03 Date Analyzed (2): 03/26/03

Time Analyzed (1): 0129 Time Analyzed (2): 0129

Instrument ID (1): E1 Instrument ID (2): E1

GC Column (1): RTXCLPPEST 2 ID: 0.53(mm) GC Column (2): RTXCLPPEST ID: 0.53(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	B1BLCS	LCS-6112	03/26/03	03/26/03
02	B1BLCSD	LCSD-6112	03/26/03	03/26/03
03	FTAMW-55S	B0412-02E	03/26/03	03/26/03
04	FTAMW103D	B0412-03E	03/26/03	03/26/03
05	FTAMW103I	B0412-04E	03/26/03	03/26/03
06	FTAMW104S	B0412-05E	03/26/03	03/26/03
07	FTAMW103S	B0412-06E	03/26/03	03/26/03
08	FTAMDUP13	B0412-07E	03/26/03	03/26/03
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26				

COMMENTS: _____

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1B

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: MB-6111

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0122F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1B	77	85	62	82			0
02	B1BLCS	82	87	52	66			0
03	B1BLCSD	77	82	65	82			0
04	FTAMW-55S	79	85	42	52			0
05	FTAMW103D	76	86	48	64			0
06	FTAMW103I	76	86	47	61			0
07	FTAMW104S	76	87	59	77			0
08	FTAMW103S	65	74	50	66			0
09	FTAMDUP13	77	87	64	77			0
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11								
12								
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30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix Spike - Sample No.: B1BLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		7.9	79	45-162
Aroclor-1260	10		6.9	69	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	8.3	83	5	40	45-162
Aroclor-1260	10	8.0	80	15	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/25/03 Time: 2122

Lab File ID: E1E0115F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10086.000	0.01	15.5	15.0	<-
(2)	24115.960	19392.000	0.01	19.6	15.0	<-
(3)	14202.320	11250.000	0.01	20.8	15.0	<-
Aroclor-1260	29455.240	21537.000	0.01	26.9	15.0	<-
(2)	40190.280	33133.000	0.01	17.6	15.0	<-
(3)	23147.960	16369.000	0.01	29.3	15.0	<-
Tetrachloro-m-xylene	503358.00	475400.00	0.01	5.6	15.0	
Decachlorobiphenyl	581298.00	468450.00	0.01	19.4	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/25/03 Time: 2122

Lab File ID: E1E0115R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	42161.000	0.01	10.2	15.0	≤15%
(2)	24183.600	21413.000	0.01	11.4	15.0	
(3)	20737.640	25444.000	0.01	22.7	15.0	<-
Aroclor-1260	45409.320	40141.000	0.01	11.6	15.0	
(2)	46248.440	41982.000	0.01	9.2	15.0	
(3)	64584.960	60581.000	0.01	6.2	15.0	
Tetrachloro-m-xylene	741526.00	747100.00	0.01	0.8	15.0	
Decachlorobiphenyl	711418.00	733150.00	0.01	3.0	15.0	

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/26/03 Time: 0501

Lab File ID: E1E0128F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	9876.000	0.01	17.2	15.0	<-
(2)	24115.960	18450.000	0.01	23.5	15.0	<-
(3)	14202.320	10759.000	0.01	24.2	15.0	<-
Aroclor-1260	29455.240	21339.000	0.01	27.6	15.0	<-
(2)	40190.280	32261.000	0.01	19.7	15.0	<-
(3)	23147.960	15503.000	0.01	33.0	15.0	<-
Tetrachloro-m-xylene	503358.00	472350.00	0.01	6.2	15.0	
Decachlorobiphenyl	581298.00	461350.00	0.01	20.6	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/26/03 Time: 0501

Lab File ID: E1E0128R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	41402.000	0.01	11.8	15.0	
(2)	24183.600	21152.000	0.01	12.5	15.0	
(3)	20737.640	25218.000	0.01	21.6	15.0	<-
Aroclor-1260	45409.320	40351.000	0.01	11.1	15.0	
(2)	46248.440	42070.000	0.01	9.0	15.0	
(3)	64584.960	60388.000	0.01	6.5	15.0	
Tetrachloro-m-xylene	741526.00	755800.00	0.01	1.9	15.0	
Decachlorobiphenyl	711418.00	742550.00	0.01	4.4	15.0	

c 15%

FORM VII PCB

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/26/03 Time: 1130

Lab File ID: E1E0139F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10045.000	0.01	15.8	15.0	<-
(2)	24115.960	19423.000	0.01	19.4	15.0	<-
(3)	14202.320	11293.000	0.01	20.5	15.0	<-
Aroclor-1260	29455.240	22579.000	0.01	23.3	15.0	<-
(2)	40190.280	33999.000	0.01	15.4	15.0	<-
(3)	23147.960	16495.000	0.01	28.7	15.0	<-
Tetrachloro-m-xylene	503358.00	494450.00	0.01	1.8	15.0	
Decachlorobiphenyl	581298.00	486150.00	0.01	16.4	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID: E1 Calibration Date: 03/26/03 Time: 1130

Lab File ID: E1E0139R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	43006.000	0.01	8.4	15.0	15%
(2)	24183.600	21968.000	0.01	9.2	15.0	
(3)	20737.640	26085.000	0.01	25.8	15.0	<-
Aroclor-1260	45409.320	41597.000	0.01	8.4	15.0	
(2)	46248.440	43559.000	0.01	5.8	15.0	
(3)	64584.960	62747.000	0.01	2.8	15.0	
Tetrachloro-m-xylene	741526.00	789150.00	0.01	6.4	15.0	
Decachlorobiphenyl	711418.00	774700.00	0.01	8.9	15.0	

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BC	AR1660BC	03/25/03	2122	8.44	25.34
23	BBLK1B	MB-6111	03/26/03	0129	8.44	25.34
24	B1BLCS	LCS-6112	03/26/03	0204	8.44	25.34
25	B1BLCSD	LCSD-6112	03/26/03	0240	8.44	25.34
26	FTAMW-55S	B0412-02E	03/26/03	0315	8.44	25.33
27	FTAMW103D	B0412-03E	03/26/03	0350	8.44	25.34
28	AR1660BD	AR1660BD	03/26/03	0501	8.44	25.34
29	FTAMW103I	B0412-04E	03/26/03	0612	8.44	25.34
30	FTAMW104S	B0412-05E	03/26/03	0647	8.44	25.34
31	FTAMW103S	B0412-06E	03/26/03	0722	8.44	25.34
32	FTAMDUP13	B0412-07E	03/26/03	0757	8.44	25.33

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1660BE	AR1660BE	03/26/03	1130	8.44	25.34
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BC	AR1660BC	03/25/03	2122	6.76	22.11
23	BBLK1B	MB-6111	03/26/03	0129	6.76	22.12
24	B1BLCS	LCS-6112	03/26/03	0204	6.76	22.12
25	B1BLCSD	LCSD-6112	03/26/03	0240	6.76	22.11
26	FTAMW-55S	B0412-02E	03/26/03	0315	6.76	22.11
27	FTAMW103D	B0412-03E	03/26/03	0350	6.76	22.12
28	AR1660BD	AR1660BD	03/26/03	0501	6.76	22.11
29	FTAMW103I	B0412-04E	03/26/03	0612	6.76	22.12
30	FTAMW104S	B0412-05E	03/26/03	0647	6.76	22.12
31	FTAMW103S	B0412-06E	03/26/03	0722	6.76	22.12
32	FTAMDUP13	B0412-07E	03/26/03	0757	6.76	22.11

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1660BE	AR1660BE	03/26/03	1130	6.76	22.11
02						
03						
04						
05						
06						
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE 1 OF 1

CLIENT	NASA Wallop Island	JOB NUMBER	B0412
SUBJECT	PCBs (AW)		
BASED ON	8082	DRAWING NUMBER	
BY	SCS	CHECKED BY	APPROVED BY	DATE

BZBLCS

Aroclor - 1016 7.9 µg/L

$$\frac{(24/23.3 \text{ area})(1000 \text{ ml})(1)}{(30627.85 \text{ area/µg})(1000 \text{ ml})(1 \text{ ml})} = 7.87 \text{ µg/mL}$$

≃ 7.9 µg/L

Data File: E1E0123F.D
Report Date: 26-Mar-2003 16:30

Mitkem Corporation

Sample #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030325F.B\E1E0123F.D
Sample #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030325R.B\E1E0123R.D
Inj Date : 26-MAR-2003 02:04
Sample Info: LCS-6112,B1BLCS,MB-6111,pcb.sub,,
Misc Info : 3,,LCS,1,,,,,,,14-MAR-03,,B0412
Cal Date : 26-MAR-2003 12:40
Operator : PETER
Inst ID : E1.i
Dil Factor : 1.000000

Method #1 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030325F.B\E1_PCB_F.m
Method #2 : \\AVOGADRO\USERDATA\Organic\svoa\E1.I\030325R.B\E1_PCB_R.m
Sub List #1 : pcb.sub
Sub List #2 : pcb.sub
Col #1 Phase : RtxCLPPest 2
Col #2 Phase : RtxCLPPest

Concentration Formula: Amt * DF * Uf * Vt/(Vo * Vi)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Correction factor
Vt	10000.000	Volume of final extract (uL)
Vo	1000.000	Volume of sample extracted (ml)
Vi	1.000	Volume injected (uL)

Compound	RT#1	RT#2	Resp#1	Resp#2	Conc#1 (ug/L)	Conc#2 (ug/L)	Target Range	Ratio
Tetrachloro-m-xylene	6.760	8.440	8221	12944	0.16	0.17		100.00
Decachlorobiphenyl	22.117	25.337	6054	9455	0.10	0.13		100.00
Aroclor-1016	11.973	12.777	8682	36782	7.3	7.8	80.00- 120.00	100.00
	10.430	13.163	16340	18718	6.8	7.7	173.36- 213.36	188.21
	10.807	14.510	9508	16870	6.7	8.1	92.42- 132.42	109.51
			Average of Peak Amounts =		6.9	7.9 *		
Aroclor-1260	16.777	18.567	16455	31762	5.6	7.0	80.00- 120.00	100.00
	18.550	19.500	23330	32645	5.8	7.0	130.58- 170.58	141.78
	19.270	21.200	11359	43013	4.9	6.6	53.05- 93.05	69.03
			Average of Peak Amounts =		5.4	6.9 *		

* reported off rear column as ~~QC~~ CCV
front column exceeded QC criteria (KL)

BMF
3/26/03

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

B1BLCS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix: (soil/water) WATER Lab Sample ID: LCS-6112

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0123F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/14/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	7.9	
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	6.9	

	Sample		Duplicate			
	FTAMW-104S		**FTAMW-DUP13**			
	UG/L		UG/L			
Bis(2-ethylhexyl)phthalate	6.0	B	13.0	B	73.7	7

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 9, 2003**
FROM:	**ERIN M. FAUST**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION –TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO 848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0412

SAMPLES: 6/Aqueous/

FTAMW-103D	FTAWM-103I	FTAMW-103S
FTAMW-104S	FTAMW-55S	FTAMW-DUP13

Overview

The sample set for CTO 848, SDG B0412, NASA Wallops Island, consists of six (6) aqueous environmental samples. One (1) field duplicate pair (FTAMW-DUP13 / FTAMW-104S) is included within this SDG.

The samples were analyzed for chloride, nitrate, nitrite, sulfate, total organic carbon (TOC) and total and dissolved target analyte list (TAL) metals. Samples analyzed for dissolved metals are designated "-F". The samples were collected by Tetra Tech NUS on March 11, 2003 and analyzed by Mitkem Corporation. Metals analyses, with the exception of mercury, were conducted using SW-846 method 6010B. Mercury analyses were conducted using SW-846 method 7470A. Analyses for TOC were conducted using EPA method 415.1. Analyses for chloride, nitrate, nitrite and sulfate were conducted using EPA method 300.0.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, laboratory duplicate results, matrix spike (MS) results, ICP serial dilution results, interference check sample (ICS) results, laboratory control sample (LCS) results, field duplicate results, detection limits and analyte quantitation.

Metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) instrumentation. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) instrumentation.

Areas of concern with respect to data quality are listed below.

Minor Problems

- The 48-hour holding time for nitrate and nitrite was exceeded by approximately 1-6 hours for all samples except FTAMW-DUP13. The positive results reported for nitrate in the affected samples were qualified as estimated, "J". The nondetected results reported for nitrite in the affected samples were qualified as estimated, "UJ".

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Sample Affected: All

Analyte	Maximum Concentration	Action Level
Aluminum	216.2 µg/L	1081 µg/L
Antimony	7.6 µg/L	38 µg/L
Barium[(1)]	9.42 µg/L	47.1 µg/L
Beryllium	0.60 µg/L	3.0 µg/L
Chromium[(1)]	0.73 µg/L	3.65 µg/L
Cobalt	1.5 µg/L	7.5 µg/L
Copper	6.7 µg/L	33.5 µg/L
Iron	102.3 µg/L	511.5 µg/L
Magnesium	210.5 µg/L	1052.5 µg/L
Manganese[(1)]	1.866 µg/L	9.3 µg/L
Nickel[(1)]	2.182 µg/L	10.91 µg/L
Potassium	202.3 µg/L	1011.5 µg/L
Silver[(1)]	2.69 µg/L	13.45 µg/L
Sodium	175.5 µg/L	877.5 µg/L
Thallium	3.6 µg/L	18.0 µg/L
Vanadium	1.6 µg/L	8.0 µg/L
Zinc[(1)]	7.26 µg/L	36.3 µg/L
Sulfate	0.306 mg/L	1.53 mg/L

[(1)] Maximum contamination present in an aqueous preparation blank.

An action level of five times the maximum contaminant level has been established to evaluate sample data for blank contamination. Sample aliquot, percent solids and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results < the action level reported for all of the above analytes with the exception of beryllium, magnesium, manganese, sodium and sulfate were qualified, "B", as a result of blank contamination. No validation action was required for beryllium, magnesium, manganese, sodium and sulfate because the results were either greater than the action level or were nondetected.

- Laboratory Control Sample (LCS) percent recovery for mercury was < 80% quality control limit. The nondetected results reported for mercury were qualified as biased low, "UL".

Notes

Contract Required Detection Limit (CRDL) percent recoveries could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the Interference Check Standard A (ICSA) on the Form 4; however, these results did not need to be evaluated because the interfering analytes were not present in the environmental samples at significant levels.

The nondetected results for nitrite and sulfate were reported as "0 U" in the electronic database. The data reviewer corrected the results by replacing the zero with the laboratory's listed reporting limit (RL).

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks. Nitrate and nitrite results were qualified due to holding time noncompliance. Mercury was qualified due to LCS noncompliance.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Data Validation", April 1993 as amended for use within USEPA Region III.

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Erin M. Faust
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

UL - Nondetected result is considered biased low, "UL", as a result of technical noncompliances.

J - Positive result is considered estimated, "J", as a result of technical noncompliances.

UJ - Nondetected result is considered estimated, "UJ", as a result of technical noncompliances.

APPENDIX A
QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: M

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	B0412-03C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	652	B	A
ANTIMONY	4.3	B	A
ARSENIC	3.0	U	
BARIUM	33.7	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3790		
CHROMIUM	2.0	B	A
COBALT	7.6		
COPPER	7.1	B	A
IRON	884		
LEAD	4.0	U	
MAGNESIUM	4030		
MANGANESE	286		
MERCURY	0.13	UL	E
NICKEL	4.2	B	A
POTASSIUM	1650		
SELENIUM	9.0	U	
SILVER	2.2	B	A
SODIUM	10400		
THALLIUM	3.0	U	
VANADIUM	3.8	B	A
ZINC	11.1	B	A

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	B0412-04C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	126	B	A
ANTIMONY	4.9	B	A
ARSENIC	3.0	U	
BARIUM	20.8	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	9400		
CHROMIUM	1.1	B	A
COBALT	2.6	B	A
COPPER	4.0	B	A
IRON	209	B	A
LEAD	4.0	U	
MAGNESIUM	7370		
MANGANESE	361		
MERCURY	0.13	UL	E
NICKEL	2.2	B	A
POTASSIUM	1720		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	9240		
THALLIUM	3.0	U	
VANADIUM	3.7	B	A
ZINC	7.5	B	A

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	B0412-06C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	26.4	B	A
ANTIMONY	3.6	B	A
ARSENIC	3.0	U	
BARIUM	16.6	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3110		
CHROMIUM	0.91	B	A
COBALT	5.4	B	A
COPPER	4.7	B	A
IRON	54.5	B	A
LEAD	4.0	U	
MAGNESIUM	4370		
MANGANESE	183		
MERCURY	0.14	UL	E
NICKEL	4.8	B	A
POTASSIUM	1000	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5220		
THALLIUM	3.0	U	
VANADIUM	2.4	B	A
ZINC	8.6	B	A

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: M

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	B0412-05C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	175	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	32.8	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2410		
CHROMIUM	3.9		
COBALT	1.9	B	A
COPPER	4.0	U	
IRON	104	B	A
LEAD	4.0	U	
MAGNESIUM	2430		
MANGANESE	21.5		
MERCURY	0.13	UL	E
NICKEL	4.9	B	A
POTASSIUM	1360		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	9920		
THALLIUM	3.0	U	
VANADIUM	1.8	B	A
ZINC	9.9	B	A

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	B0412-02C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	274	B	A
ANTIMONY	3.5	B	A
ARSENIC	25.4		
BARIUM	33.8	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2340		
CHROMIUM	3.3	B	A
COBALT	6.1	B	A
COPPER	10.8	B	A
IRON	44200		
LEAD	73.2		
MAGNESIUM	2760		
MANGANESE	417		
MERCURY	0.13	UL	E
NICKEL	6.8	B	A
POTASSIUM	1140		
SELENIUM	9.0	U	
SILVER	4.9	B	A
SODIUM	5380		
THALLIUM	4.3	B	A
VANADIUM	6.4	B	A
ZINC	50.8		

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	B0412-07C
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	Result	Val Qual	Qual Code
ALUMINUM	161	B	A
ANTIMONY	6.2	B	A
ARSENIC	3.0	U	
BARIUM	32.6	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2450		
CHROMIUM	0.95	B	A
COBALT	1.6	B	A
COPPER	4.0	U	
IRON	74.7	B	A
LEAD	4.0	U	
MAGNESIUM	2370		
MANGANESE	21.0		
MERCURY	0.13	UL	E
NICKEL	3.0	B	A
POTASSIUM	1370		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	9890		
THALLIUM	3.0	U	
VANADIUM	1.6	B	A
ZINC	11.2	B	A

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: MF

nsample	FTAMW-103D-F	nsample	FTAMW-103I-F	nsample	FTAMW-103S-F
samp_date	3/11/2003	samp_date	3/11/2003	samp_date	3/11/2003
lab_id	B0412-09A	lab_id	B0412-10A	lab_id	B0412-12A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	24.6	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3860		
CHROMIUM	0.70	B	A
COBALT	5.5	B	A
COPPER	4.0	U	
IRON	37.9	B	A
LEAD	4.0	U	
MAGNESIUM	4050		
MANGANESE	240		
MERCURY	0.14	UL	E
NICKEL	2.3	B	A
POTASSIUM	1600		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	10600		
THALLIUM	3.0	U	
VANADIUM	1.6	B	A
ZINC	7.0	U	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	31.2	B	A
ANTIMONY	3.5	B	A
ARSENIC	3.0	U	
BARIUM	14.7	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	9700		
CHROMIUM	0.90	B	A
COBALT	2.4	B	A
COPPER	4.0	U	
IRON	128	B	A
LEAD	4.0	U	
MAGNESIUM	7740		
MANGANESE	388		
MERCURY	0.14	UL	E
NICKEL	1.6	B	A
POTASSIUM	1750		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	9430		
THALLIUM	3.0	U	
VANADIUM	2.9	B	A
ZINC	8.1	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	15.5	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3190		
CHROMIUM	1.1	B	A
COBALT	4.9	B	A
COPPER	4.0	U	
IRON	42.8	B	A
LEAD	4.0	U	
MAGNESIUM	4340		
MANGANESE	191		
MERCURY	0.14	UL	E
NICKEL	4.6	B	A
POTASSIUM	1000	B	A
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5170		
THALLIUM	3.0	U	
VANADIUM	1.2	B	A
ZINC	7.1	B	A

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: MF

nsample	FTAMW-104S-F
samp_date	3/11/2003
lab_id	B0412-11A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	29.8	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2480		
CHROMIUM	0.73	B	A
COBALT	1.3	B	A
COPPER	4.0	U	
IRON	41.4	B	A
LEAD	4.0	U	
MAGNESIUM	2450		
MANGANESE	22.1		
MERCURY	0.13	UL	E
NICKEL	3.2	B	A
POTASSIUM	1380		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	10100		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	9.5	B	A

nsample	FTAMW-55S-F
samp_date	3/11/2003
lab_id	B0412-08A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	26.9	B	A
ANTIMONY	4.6	B	A
ARSENIC	25.6		
BARIUM	29.8	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2390		
CHROMIUM	1.7	B	A
COBALT	5.3	B	A
COPPER	4.1	B	A
IRON	44600		
LEAD	59.6		
MAGNESIUM	2730		
MANGANESE	428		
MERCURY	0.13	UL	E
NICKEL	6.1	B	A
POTASSIUM	1190		
SELENIUM	9.0	U	
SILVER	3.4	B	A
SODIUM	5510		
THALLIUM	3.6	B	A
VANADIUM	4.7	B	A
ZINC	8.2	B	A

nsample	FTAMW-DUP13-F
samp_date	3/11/2003
lab_id	B0412-13A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTAMW-104S-F

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	4.8	B	A
ARSENIC	3.0	U	
BARIUM	28.4	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	2450		
CHROMIUM	0.60	U	
COBALT	1.3	B	A
COPPER	4.0	U	
IRON	46.1	B	A
LEAD	4.0	U	
MAGNESIUM	2320		
MANGANESE	21.0		
MERCURY	0.13	UL	E
NICKEL	2.8	B	A
POTASSIUM	1300		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	9810		
THALLIUM	3.0	U	
VANADIUM	1.1	B	A
ZINC	8.7	B	A

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: MISC

nsample	FTAMW-103D
samp_date	3/11/2003
lab_id	203210-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	11		
NITRATE	MG/L	0.85	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-103I
samp_date	3/11/2003
lab_id	203210-003
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	12		
NITRATE	MG/L	0.60	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	15		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-103S
samp_date	3/11/2003
lab_id	203210-005
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	8.6		
NITRATE	MG/L	0.082	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	6.9		
TOTAL ORGANIC CARBON	MG/L	6.7		

PROJ_NO: 4740

SDG: B0412 MEDIA: WATER DATA FRACTION: MISC

nsample	FTAMW-104S
samp_date	3/11/2003
lab_id	203210-004
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	11		
NITRATE	MG/L	0.26	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTAMW-55S
samp_date	3/11/2003
lab_id	203210-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	4.3		
NITRATE	MG/L	0.45	J	H
NITRITE	MG/L	0.10	UJ	H
SULFATE	MG/L	4		
TOTAL ORGANIC CARBON	MG/L	27		

nsample	FTAMW-DUP13
samp_date	3/11/2003
lab_id	203210-006
qc_type	NM
Pct_Solids	0
DUP_OF:	FTAMW-104S

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	11		
NITRATE	MG/L	0.24		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

APPENDIX B
RESULTS AS REPORTED BY THE LABORATORY

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103D

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0412___

Matrix (soil/water): WATER Lab Sample ID: B0412-03C_____

Level (low/med): MED____ Date Received: 03/12/03____

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	652			P
7440-36-0	Antimony	4.3	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	33.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3790			P
7440-47-3	Chromium	2.0	B		P
7440-48-4	Cobalt	7.6	B		P
7440-50-8	Copper	7.1	B	*	P
7439-89-6	Iron	884			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4030			P
7439-96-5	Manganese	286			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	4.2	B		P
7440-09-7	Potassium	1650			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.2	B		P
7440-23-5	Sodium	10400		RC 3/24/03	P
7440-28-0	Thallium	3.0	U	*	P
7440-62-2	Vanadium	3.8	B		P
7440-66-6	Zinc	11.1	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW1031

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-04C

Level (low/med): MED Date Received: 03/12/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	126	B		P
7440-36-0	Antimony	4.9	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	20.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9400			P
7440-47-3	Chromium	1.1	B		P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	4.0	B	*	P
7439-89-6	Iron	209			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	7370			P
7439-96-5	Manganese	361			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	1720			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	9240			P
7440-28-0	Thallium	3.0	U	* SEAC 3/24/03	P
7440-62-2	Vanadium	3.7	B		P
7440-66-6	Zinc	7.5	B	*	P
	Cyanide				NR

Color Before: Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW103S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-06C

Level (low/med): MED Date Received: 03/12/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.4	B		P
7440-36-0	Antimony	3.6	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3110			P
7440-47-3	Chromium	0.91	B		P
7440-48-4	Cobalt	5.4	B		P
7440-50-8	Copper	4.7	B	*	P
7439-89-6	Iron	54.5	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4370			P
7439-96-5	Manganese	183			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	4.8	B		P
7440-09-7	Potassium	1000			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5220			P
7440-28-0	Thallium	3.0	U	* 3/24/03	P
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	8.6	B	*	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW104S

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412___

Matrix (soil/water): WATER Lab Sample ID: B0412-05C_____

Level (low/med): MED____ Date Received: 03/12/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	175	B		P
7440-36-0	Antimony	3.0	U	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	32.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2410			P
7440-47-3	Chromium	3.9	B		P
7440-48-4	Cobalt	1.9	B		P
7440-50-8	Copper	4.0	U	*	P
7439-89-6	Iron	104	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2430			P
7439-96-5	Manganese	21.5	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	4.9	B		P
7440-09-7	Potassium	1360			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	9920			P
7440-28-0	Thallium	3.0	U	* 3/24/03	P
7440-62-2	Vanadium	1.8	B		P
7440-66-6	Zinc	9.9	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW-55S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-02C

Level (low/med): MED Date Received: 03/12/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	274			P
7440-36-0	Antimony	3.5	B	*	P
7440-38-2	Arsenic	25.4			P
7440-39-3	Barium	33.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2340			P
7440-47-3	Chromium	3.3	B		P
7440-48-4	Cobalt	6.1	B		P
7440-50-8	Copper	10.8	B	*	P
7439-89-6	Iron	44200			P
7439-92-1	Lead	73.2			P
7439-95-4	Magnesium	2760			P
7439-96-5	Manganese	417			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	6.8	B		P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	4.9	B		P
7440-23-5	Sodium	5380		PK 3/24/03	P
7440-28-0	Thallium	4.3	B	*	P
7440-62-2	Vanadium	6.4	B		P
7440-66-6	Zinc	50.8		*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture:

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
FTAMDUP13

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412___

Matrix (soil/water): WATER_ Lab Sample ID: B0412-07C_____

Level (low/med): MED____ Date Received: 03/12/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	161	B		P
7440-36-0	Antimony	6.2	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	32.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2450			P
7440-47-3	Chromium	0.95	B		P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	4.0	U	*	P
7439-89-6	Iron	74.7	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2370			P
7439-96-5	Manganese	21.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	1370			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	9890		PM 3/12/03	P
7440-28-0	Thallium	3.0	U	*	P
7440-62-2	Vanadium	1.6	B		P
7440-66-6	Zinc	11.2	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAM103DF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Matrix (soil/water): WATER_ Lab Sample ID: B0412-09A_____

Level (low/med): MED____ Date Received: 03/12/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	24.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3860			P
7440-47-3	Chromium	0.70	B		P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	37.9	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4050			P
7439-96-5	Manganese	240			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.3	B		P
7440-09-7	Potassium	1600			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.6	B		P
7440-66-6	Zinc	7.0	U	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAM103IF

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-10A

Level (low/med): MED Date Received: 03/12/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	31.2	B		P
7440-36-0	Antimony	3.5	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	14.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9700			P
7440-47-3	Chromium	0.90	B		P
7440-48-4	Cobalt	2.4	B		P
7440-50-8	Copper	4.0	U	*	P
7439-89-6	Iron	128	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	7740			P
7439-96-5	Manganese	388			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.6	B		P
7440-09-7	Potassium	1750			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U	pm 312413	P
7440-23-5	Sodium	9430			P
7440-28-0	Thallium	3.0	U	*	P
7440-62-2	Vanadium	2.9	B		P
7440-66-6	Zinc	8.1	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAM103SF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-12A

Level (low/med): MED Date Received: 03/12/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	15.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3190			P
7440-47-3	Chromium	1.1	B		P
7440-48-4	Cobalt	4.9	B		P
7440-50-8	Copper	4.0	U	*	P
7439-89-6	Iron	42.8	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4340.			P
7439-96-5	Manganese	191			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	4.6	B		P
7440-09-7	Potassium	1000			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5170			P
7440-28-0	Thallium	3.0	U	*	P
7440-62-2	Vanadium	1.2	B		P
7440-66-6	Zinc	7.1	B	*	P
	Cyanide				NR

3/24/03

Color Before: _____ Clarity Before: Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAM104SF

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-11A

Level (low/med): MED Date Received: 03/12/03

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	29.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2480			P
7440-47-3	Chromium	0.73	B		P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	4.0	U		P
7439-89-6	Iron	41.4	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2450			P
7439-96-5	Manganese	22.1	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	1380			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	10100			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	9.5	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMW55SF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix (soil/water): WATER Lab Sample ID: B0412-08A

Level (low/med): MED Date Received: 03/12/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	26.9	B		P
7440-36-0	Antimony	4.6	B	*	P
7440-38-2	Arsenic	25.6			P
7440-39-3	Barium	29.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2390			P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	5.3	B		P
7440-50-8	Copper	4.1	B	*	P
7439-89-6	Iron	44600			P
7439-92-1	Lead	59.6			P
7439-95-4	Magnesium	2730			P
7439-96-5	Manganese	428			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	6.1	B		P
7440-09-7	Potassium	1190			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.4	B		P
7440-23-5	Sodium	5510			P
7440-28-0	Thallium	3.6	B	* 3/24/03	P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	8.2	B	*	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

FORM I - IN SW846

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAMDP13F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0412__

Matrix (soil/water): WATER_ Lab Sample ID: B0412-13A_____

Level (low/med): MED Date Received: 03/12/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	4.8	B	*	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	28.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	2450			P
7440-47-3	Chromium	0.60	U		P
7440-48-4	Cobalt	1.3	B		P
7440-50-8	Copper	4.0	U	*	P
7439-89-6	Iron	46.1	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2320			P
7439-96-5	Manganese	21.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	1300			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	9810			P
7440-28-0	Thallium	3.0	U	* TM 3/24/03	P
7440-62-2	Vanadium	1.1	B		P
7440-66-6	Zinc	8.7	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

_____

_____

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LABORATORY TEST RESULTS

Job Number: 203210

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0412-03D
Date Sampled.....: 03/11/2003
Time Sampled.....: 09:55
Sample Matrix.....: Water

Laboratory Sample ID: 203210-2
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	11			0.15	1.0	1	mg/L	15179		03/13/03 1451	ddm
	Nitrate as N (NO3-N)	0.85			0.002	0.10	1	mg/L	15179		03/13/03 1451	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1451	ddm
	Sulfate	11			0.012	1.0	1	mg/L	15179		03/13/03 1451	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW103D
Lab ID: B0412-03

Project: Wallops Island
Collection Date: 03/11/03 9:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203210

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0412-04D
Date Sampled.....: 03/11/2003
Time Sampled.....: 12:15
Sample Matrix.....: Water

Laboratory Sample ID: 203210-3
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	12			0.15	1.0	1	mg/L	15179		03/13/03 1504	ddm
	Nitrate as N (NO3-N)	0.60			0.002	0.10	1	mg/L	15179		03/13/03 1504	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1504	ddm
	Sulfate	15			0.012	1.0	1	mg/L	15179		03/13/03 1504	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW103I
Lab ID: B0412-04

Project: Wallops Island
Collection Date: 03/11/03 12:15

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203210

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0412-06D
Date Sampled.....: 03/11/2003
Time Sampled.....: 14:45
Sample Matrix.....: Water

Laboratory Sample ID: 203210-5
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	8.6			0.15	1.0	1	mg/L	15179		03/13/03 1531	ddm
	Nitrate as N (NO3-N)	0.082	B		0.002	0.10	1	mg/L	15179		03/13/03 1531	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1531	ddm
	Sulfate	6.9			0.012	1.0	1	mg/L	15179		03/13/03 1531	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW103S
Lab ID: B0412-06

Project: Wallops Island
Collection Date: 03/11/03 14:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	6.7		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Job Number: 203210

LABORATORY TEST RESULTS

Date:03/21/2003

CUSTOMER: MITKEM | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Customer Sample ID: B0412-05D
Date Sampled.....: 03/11/2003
Time Sampled.....: 13:55
Sample Matrix.....: Water

Laboratory Sample ID: 203210-4
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	11			0.15	1.0	1	mg/L	15179		03/13/03 1518	ddm
	Nitrate as N (NO3-N)	0.26			0.002	0.10	1	mg/L	15179		03/13/03 1518	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1518	ddm
	Sulfate	11			0.012	1.0	1	mg/L	15179		03/13/03 1518	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW104S
Lab ID: B0412-05

Project: Wallops Island
Collection Date: 03/11/03 13:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203210

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0412-02D
Date Sampled.....: 03/11/2003
Time Sampled.....: 09:35
Sample Matrix.....: Water

Laboratory Sample ID: 203210-1
Date Receiv d.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.3			0.15	1.0	1	mg/L	15179		03/13/03 1411	ddm
	Nitrate as N (NO3-N)	0.45			0.002	0.10	1	mg/L	15179		03/13/03 1411	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1411	ddm
	Sulfate	4.0			0.012	1.0	1	mg/L	15179		03/13/03 1411	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMW-55S
Lab ID: B0412-02

Project: Wallops Island
Collection Date: 03/11/03 9:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	27		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203210

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0412-07D
Date Sampled.....: 03/11/2003
Time Sampled.....: 16:55
Sample Matrix.....: Water

Laboratory Sample ID: 203210-6
Date Received.....: 03/13/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	11			0.15	1.0	1	mg/L	15179		03/13/03 1545	dcm
	Nitrate as N (NO3-N)	0.24			0.002	0.10	1	mg/L	15179		03/13/03 1545	dcm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15179		03/13/03 1545	dcm
	Sulfate	11			0.012	1.0	1	mg/L	15179		03/13/03 1545	dcm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FTAMDUP13
Lab ID: B0412-07

Project: Wallops Island
Collection Date: 03/11/03 16:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C
SUPPORT DOCUMENTATION

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page ____ of ____

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0412
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl low conc. 1,3,5 TMB 40 ml VOA vial HCl	1 Liter Amber bottle MTBE TCL VOA list HCl	TCL SVOA 1 Liter Amber bottles	TCL PCB 500 ml poly bottles	TAL Metals 500 ml poly bottles	500 ml poly bottle unpres Cyanide, Sulfide, Nitrate	500 ml poly bottle H2SO4 Diesel/Gasoline/Jet Fuels	COMMENTS
TB - 031103	3/11/03 / 0720		X	X			01	2	2							Trip Blank
FTA MW - 55S	3/11/03 / 0935		X	X			02		2	2	1	1	1	1		
FTA MW - 103D	3/11/03 / 0955		X	X			03		2	2	1	1	1	1		
FTA MW - 103I	3/11/03 / 1215		X	X			04		2	2	1	1	1	1		
FTA MW - 104S	3/11/03 / 1355		X	X			05		2	2	1	1	1	1		
FTA MW - 103S	3/11/03 / 1445		X	X			06		2	2	1	1	1	1		
FTA MW - Dup 13	3/11/03 / 1655		X	X			07		2	2	1	1	1	1		
FTA MW - 55S F	3/11/03 / 0935		X	X			08	1							1	
FTA MW - 103D F	3/11/03 / 0955		X	X			09	1							1	
FTA MW - 103I F	3/11/03 / 1215		X	X			10	1							1	
FTA MW - 104S F	3/11/03 / 1355		X	X			11	1							1	
FTA MW - 103S F	3/11/03 / 1445		X	X			12	1							1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	3/11/03 / 1700	Patricia Fitzgerald	3-12-03 / 0900	Trip Blanks provided By Lab Shipped via Federal Express Airbill NO 8286 8464 5142	3°
		/		/		
		/		/		

00001

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0412
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	500 ml poly HNO3 Dissolved Metals	COMMENTS
FTAMW-Dup 13F	3/11/03 / 1655		X	X			13	1	1	
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

REQUESTED ANALYSES

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/11/03 / 1700	[signature]	3-12-03 / 0900
		/		/
		/		/

ADDITIONAL REMARKS: Shipped Via Federal Express Airbill No 8286 8464 5142

COOLER TEMP: 5

00011

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION

1 / 1

Sample Condition Form

Page __ of __

Received By:	Reviewed By:	Date: 3-12-03	MITKEM Project: B0412
Client Project:			
Client: TETRA TECH			

1) Cooler Sealed YES / NO*
*

2)Custody Seal(s) Present / Absent
Coolers / Bottles
Intact / Broken

Custody Seal Numbers

3)Chain -of- Custody Present / Absent

4)Airbill(s) Present / Absent

Airbill Number(s) FED-EX

5)Cooler Temperature 3c

Coolant Condition ICE

6)Sample Bottles Intact/Broken/Leaking

7)Date Received 3-12-03

8)Time Received 0900

VOA Matrix Key:
US = Unpreserved Soil
UA = Unpreserved Aqueous
M/N = MeOH& NaHSO4
N = NaHSO4 M = MeOH
A = Air
H = HCl
E=Encore

Lab Sample ID	HNO3	H2SO4	HCl	NaOH	VOA MATRIX
B0412 01	<2				H
02	<2				H
03	<2				H
04	<2				H
05	<2				H
06	<2				H
07	<2				H
08	<2	DISSOLVED + FILTERED			
09	<2				
10	<2				
11	<2				
12	<2				
B0412 13	<2	↓	↓	↓	↓

See Sample Condition Notification / Corrective Action Form yes / no

Comments / r/ Remarks

Rad Ok yes / no

FORM ID 30.QUAPPSAMPLECOND.FORM

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 203210 Location.: 57207 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.:
Project Number.: 20000646 Project Description.: Nitrate/Sulfate
Customer.....: MITKEM Contact.: Paul Senecal

Date of the Report..: 03/13/2003
Project Manager.....: jld

Questions ?	(Y/N)	Comments
Chain-of-Custody Present?	Y	
...If "yes", completed properly?	Y	
Custody seal on shipping container?	Y	
...If "yes", custody seal intact?	Y	
Custody seals on sample containers?	N	
...If "yes", custody seal intact?		
Samples iced?	Y	BAGGED ICE, LOOSE ICE
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	0 C
Samples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		
Correct containers used?	Y	
Adequate sample volume provided?	Y	
Samples preserved correctly?		
Samples received within holding-time?	Y	
Agreement between COC and sample labels?	Y	
Radioactivity at or below background levels?	Y	
A Sample Discrepancy Report (SDR) was needed?	N	
Comments	Y	SHORT HOLDS (NITRATE, NITRITE)
If samples were shipped was there an air bill #?	Y	FE 7915 5128 0089
Sample Custodian Signature/Date	Y	Alex C. Yanowski 03/13/03

0000007

B0412

HOLDING TIME
05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	CL	03/11/03	/ /	03/13/03	0	0	2
UG/L	FTAMW-103D	B0412-03C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103I	B0412-04C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103S	B0412-06C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-104S	B0412-05C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55S	B0412-02C	NORMAL	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55SDUP	B0412-02CDUP	DUPLICATE	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
%	FTAMW-55SMS	B0412-02CMS	MS	B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-DUP13	B0412-07C		B0412	HG	03/11/03	03/13/03	03/14/03	2	1	3
%	LCSW	0313LCSW	LCS	B0412	HG	/ /	03/13/03	03/14/03	0	1	0
UG/L	PBW	0313PBW	M_BLANK	B0412	HG	/ /	03/13/03	03/14/03	0	1	0
UG/L	FTAMW-103DF	B0412-09A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103IF	B0412-10A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103SF	B0412-12A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-104SF	B0412-11A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-55SF	B0412-08A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-DUP13F	B0412-13A	NORMAL	B0412	HGF	03/11/03	03/13/03	03/14/03	2	1	3
UG/L	FTAMW-103D	B0412-03C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103I	B0412-04C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTAMW-103S	B0412-06C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-104S	B0412-05C	NORMAL	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55S	B0412-02C		B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55SDUP	B0412-02CDUP	DUPLICATE	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
%	FTAMW-55SMS	B0412-02CMS	MS	B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-DUP13	B0412-07C		B0412	M	03/11/03	03/13/03	03/15/03	2	2	4
%	LCSW	0313LCSW	LCS	B0412	M	/ /	03/13/03	03/15/03	0	2	0
UG/L	PBW	0313PBW	M_BLANK	B0412	M	/ /	03/13/03	03/15/03	0	2	0
UG/L	FTAMW-103DF	B0412-09A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103IF	B0412-10A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-103SF	B0412-12A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-104SF	B0412-11A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-55SF	B0412-08A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
UG/L	FTAMW-DUP13F	B0412-13A	NORMAL	B0412	MF	03/11/03	03/13/03	03/15/03	2	2	4
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001		B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006		B0412	NTA	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103D	203210-002	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	NTI	03/11/03	/ /	03/13/03	0	0	2
%	FTAMW-103D	B0412-03E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-103I	B0412-04E		B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
%	FTAMW-103IRE	B0412-04ERE	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-103S	B0412-06E	NORMAL	B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
UG/L	FTAMW-103SRE	B0412-06ERE	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-104S	B0412-05E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	FTAMW-55S	B0412-02E	NORMAL	B0412	OS	03/11/03	03/13/03	03/26/03	2	13	15
%	FTAMW-55SDL	B0412-02EDL	NORMAL	B0412	OS	03/11/03	03/12/03	03/28/03	1	16	17
%	FTAMW-DUP13	B0412-07E	NORMAL	B0412	OS	03/11/03	03/13/03	03/28/03	2	15	17
%	SBLK2K	MB-6081	M_BLANK	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	SBLK2KLCS	LCS-6081	LCS	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	SBLK2KLCSD	LCSD-6081	LCSD	B0412	OS	/ /	03/13/03	03/27/03	0	14	0
%	FTAMW-103D	B0412-03A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-103I	B0412-04A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-103S	B0412-06A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
UG/L	FTAMW-104S	B0412-05A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-55S	B0412-02A		B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	FTAMW-DUP13	B0412-07A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	TB-031103	B0412-01A	NORMAL	B0412	OV	03/11/03	03/25/03	03/25/03	14	0	14
%	VBLK5T	V5B0324B	M_BLANK	B0412	OV	/ /	03/24/03	03/24/03	0	0	0
%	VBLK5TLCS	V5L0324B	LCS	B0412	OV	/ /	03/24/03	03/24/03	0	0	0
%	BBLK1B	MB-6111	M_BLANK	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	BBLK1BLCS	LCS-6112	LCS	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	BBLK1BLCSD	LCSD-6112	LCSD	B0412	PCB	/ /	03/14/03	03/26/03	0	12	0
%	FTAMW-103D	B0412-03E		B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-103I	B0412-04E		B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-103S	B0412-06E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-104S	B0412-05E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	FTAMW-55S	B0412-02E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
%	FTAMW-DUP13	B0412-07E	NORMAL	B0412	PCB	03/11/03	03/14/03	03/26/03	3	12	15
MG/L	FTAMW-103D	203210-002		B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103I	203210-003	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103S	203210-005	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-104S	203210-004	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-55S	203210-001	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-DUP13	203210-006	NORMAL	B0412	SO4	03/11/03	/ /	03/13/03	0	0	2
MG/L	FTAMW-103D	B0412-03B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-103I	B0412-04B		B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-103S	B0412-06B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-104S	B0412-05B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-55S	B0412-02B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
MG/L	FTAMW-DUP13	B0412-07B	NORMAL	B0412	TOC	03/11/03	03/19/03	03/19/03	8	0	8
%	LCS-6217	LCS-6217	LCS	B0412	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	MB-6217	MB-6217	M_BLANK	B0412	TOC	/ /	03/19/03	03/19/03	0	0	0

LABORATORY CHRONICLE

Job Number: 203210 — Date: 03/21/2003

CUSTOMER: MITKEM — PROJECT: NITRATE SULFATE — ATTN: Paul Benecal

Lab ID: 203210-1	Client ID: B0412-02D FTAMW-55S	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 09:35
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1411	
Lab ID: 203210-2	Client ID: B0412-03D FTAMW-103D	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 09:55
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1451	
Lab ID: 203210-3	Client ID: B0412-04D FTAMW-103I	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 12:15
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1504	
Lab ID: 203210-4	Client ID: B0412-05D FTAMW-104S	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 13:55
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1518	
Lab ID: 203210-5	Client ID: B0412-06D FTAMW-103S	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 14:45
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1531	
Lab ID: 203210-6	Client ID: B0412-07D FTAMW-DUP13	Date Recvd: 03/13/2003	Sample Date: 03/11/2003	Sample time: 16:55
METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT #(S)	DATE/TIME ANALYZED	DILUTION
300.0	Ion Chromatography Analysis	1	15179		03/13/2003 1545	

48-hour holding time exceeded by

0000015

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for nine aqueous samples that were collected on March 4, 2003, and received at Mitkem on March 5, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of high recovery of chloromethane and vinyl chloride and low recovery of 1,2-dibromo-3-chloropropane.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery isophorone and low recovery of 2,4-dimethylphenol and hexachlorocyclopentadiene in the lab control sample and high recovery isophorone and low recovery of hexachlorocyclopentadiene in the lab control sample duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
03/25/03

SEVERN TRENT STL

STL Report : 203210
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Sample B0412-02D and B0412-03D were received out of hold for nitrate and nitrite analysis. The remainder of the samples were close to hold for those analyses. Client was contacted and authorized STL to continue with the analysis.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A. Cascera for
Jeffrey C. Curran
Laboratory Manager

March 21, 2003
Date

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412___

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
__FTAM103DF_____	__B0412-09A_____
FTAM103IF	B0412-10A_____
__FTAM103SF_____	__B0412-12A_____
__FTAM104SF_____	__B0412-11A_____
__FTAMDP13F_____	__B0412-13A_____
FTAMDUP13	B0412-07C
__FTAMW-55S_____	__B0412-02C_____
__FTAMW-55SD_____	__B0412-02CD_____
__FTAMW-55SS_____	__B0412-02CS_____
__FTAMW103D_____	__B0412-03C_____
FTAMW103I	__B0412-04C_____
FTAMW103S	__B0412-06C_____
__FTAMW104S_____	__B0412-05C_____
__FTAMW55SF_____	__B0412-08A_____
_____	_____
_____	_____
_____	_____

Were ICP interelement corrections applied ? Yes/No YES_

Were ICP background corrections applied ? Yes/No YES_

If yes - were raw data generated before application of background corrections ? Yes/No NO__

Comments:

_____

_____

_____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Jennifer A. Campbell

Date: 3/24/03 Title: Chemist

SAMPLE INFORMATION

Date: 03/21/2003

Job Number.: 203210
Customer...: MITKEM
Attn.....: Paul Sanecal

Project Number.....: 20000646
Customer Project ID....: NITRATE SULFATE
Project Description....: Nitrate/Sulfate

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
203210-1	B0412-02D	Water	03/11/2003	09:35	03/13/2003	09:05
203210-2	B0412-03D	Water	03/11/2003	09:55	03/13/2003	09:05
203210-3	B0412-04D	Water	03/11/2003	12:15	03/13/2003	09:05
203210-4	B0412-05D	Water	03/11/2003	13:55	03/13/2003	09:05
203210-5	B0412-06D	Water	03/11/2003	14:45	03/13/2003	09:05
203210-6	B0412-07D	Water	03/11/2003	16:55	03/13/2003	09:05

0000002

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Initial Calibration Source: INORG_VENTURES

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum	10000.0	9947.55	99.5	10000.0	9757.21	97.6	10078.62	100.8	P
Antimony	500.0	526.68	105.3	500.0	522.29	104.5	524.26	104.9	P
Arsenic	500.0	502.62	100.5	500.0	502.65	100.5	502.85	100.6	P
Barium	10000.0	10383.54	103.8	10000.0	10359.96	103.6	10400.03	104.0	P
Beryllium	250.0	253.20	101.3	250.0	252.10	100.8	252.84	101.1	P
Cadmium	250.0	254.18	101.7	250.0	256.33	102.5	255.04	102.0	P
Calcium	25000.0	24360.48	97.4	25000.0	24726.27	98.9	24788.90	99.2	P
Chromium	1000.0	1038.55	103.9	1000.0	1023.72	102.4	1028.21	102.8	P
Cobalt	2500.0	2600.51	104.0	2500.0	2571.88	102.9	2580.49	103.2	P
Copper	1250.0	1292.25	103.4	1250.0	1272.84	101.8	1282.41	102.6	P
Iron	5000.0	5177.00	103.5	5000.0	5106.87	102.1	5247.65	105.0	P
Lead	500.0	493.32	98.7	500.0	500.65	100.1	495.70	99.1	P
Magnesium	25000.0	25074.52	100.3	25000.0	24900.12	99.6	25212.54	100.9	P
Manganese	2500.0	2547.97	101.9	2500.0	2537.18	101.5	2547.79	101.9	P
Mercury	5.0	5.05	101.0	5.0	5.07	101.4	4.64	92.8	CV
Nickel	2500.0	2612.15	104.5	2500.0	2588.40	103.5	2591.67	103.7	P
Potassium	25000.0	24797.69	99.2	25000.0	24629.81	98.5	24664.93	98.7	P
Selenium	500.0	504.97	101.0	500.0	514.72	102.9	506.16	101.2	P
Silver	1250.0	1230.99	98.5	1250.0	1214.04	97.1	1214.80	97.2	P
Sodium	25000.0	25017.01	100.1	25000.0	25405.73	101.6	24637.58	98.6	P
Thallium	500.0	487.09	97.4	500.0	493.72	98.7	489.48	97.9	P
Vanadium	2500.0	2583.54	103.3	2500.0	2545.82	101.8	2551.21	102.0	P
Zinc	2500.0	2578.13	103.1	2500.0	2569.08	102.8	2565.87	102.6	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Initial Calibration Source:

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	10299.90	103.0	9913.91	99.1	P
Antimony				500.0	533.10	106.6	527.44	105.5	P
Arsenic				500.0	511.31	102.3	505.36	101.1	P
Barium				10000.0	10386.66	103.9	10446.73	104.5	P
Beryllium				250.0	253.40	101.4	255.09	102.0	P
Cadmium				250.0	258.33	103.3	255.76	102.3	P
Calcium				25000.0	25138.18	100.6	24538.44	98.2	P
Chromium				1000.0	1046.70	104.7	1039.94	104.0	P
Cobalt				2500.0	2611.47	104.5	2603.27	104.1	P
Copper				1250.0	1277.50	102.2	1291.13	103.3	P
Iron				5000.0	5339.37	106.8	5169.81	103.4	P
Lead				500.0	502.64	100.5	498.46	99.7	P
Magnesium				25000.0	25590.31	102.4	25093.66	100.4	P
Manganese				2500.0	2541.86	101.7	2561.10	102.4	P
Mercury				5.0	4.60	92.0	4.60	92.0	CV
Nickel				2500.0	2638.80	105.6	2625.81	105.0	P
Potassium				25000.0	24210.72	96.8	24859.88	99.4	P
Selenium				500.0	512.51	102.5	508.06	101.6	P
Silver				1250.0	1239.40	99.2	1230.46	98.4	P
Sodium				25000.0	24717.92	98.9	24507.24	98.0	P
Thallium				500.0	499.11	99.8	491.84	98.4	P
Vanadium				2500.0	2599.72	104.0	2583.38	103.3	P
Zinc				2500.0	2609.52	104.4	2596.92	103.9	P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Initial Calibration Source: _____

Continuing Calibration Source: INORG_VENTURES

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Aluminum				10000.0	10449.28	104.5			P
Antimony				500.0	535.55	107.1			P
Arsenic				500.0	506.52	101.3			P
Barium				10000.0	10418.02	104.2			P
Beryllium				250.0	253.83	101.5			P
Cadmium				250.0	259.73	103.9			P
Calcium				25000.0	25184.78	100.7			P
Chromium				1000.0	1059.39	105.9			P
Cobalt				2500.0	2650.71	106.0			P
Copper				1250.0	1276.86	102.1			P
Iron				5000.0	5390.80	107.8			P
Lead				500.0	502.35	100.5			P
Magnesium				25000.0	25927.82	103.7			P
Manganese				2500.0	2543.73	101.7			P
Mercury				5.0	4.60	92.0			CV
Nickel				2500.0	2674.81	107.0			P
Potassium				25000.0	24965.36	99.9			P
Selenium				500.0	519.51	103.9			P
Silver				1250.0	1259.07	100.7			P
Sodium				25000.0	24729.66	98.9			P
Thallium				500.0	498.77	99.8			P
Vanadium				2500.0	2638.56	105.5			P
Zinc				2500.0	2651.15	106.0			P
Cyanide									

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: ____ SAS No.: _____ SDG No.: B0412

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	17.0	U	193.1	B	216.2		138.708	B	P
Antimony	4.9	B	3.5	B	4.8	B	6.7	B	4.870	B	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	5.0	B	4.3	B	4.9	B	4.0	U	9.420	B	P
Beryllium	0.6	B	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.7	B	0.6	U	0.6	U	0.6	U	0.730	B	P
Cobalt	1.5	B	1.2	B	1.3	B	1.1	B	0.908	B	P
Copper	6.7	B	4.0	U	4.2	B	4.0	U	6.606	B	P
Iron	26.0	U	26.0	U	84.3	B	102.3	B	87.086	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	8.7	B	8.0	U	195.0	B	210.5	B	174.682	B	P
Manganese	1.4	B	1.1	B	1.7	B	1.7	B	1.866	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	1.8	B	1.8	B	1.9	B	1.7	B	2.182	B	P
Potassium	202.3	B	115.4	B	78.0	U	78.0	U	78.000	U	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.4	B	2.0	U	2.0	U	2.0	U	2.690	B	P
Sodium	83.0	U	175.5	B	83.0	U	83.0	U	83.000	U	P
Thallium	3.6	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	1.4	B	1.2	B	1.6	B	1.2	B	0.836	B	P
Zinc	7.0	U	7.0	U	7.0	U	7.0	U	7.260	B	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: ____ SAS No.: SDG No.: B0412___

Preparation Blank Matrix (soil/water):

Preparation Blank Concentration Units (ug/L or mg/kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			17.0	U	183.5	B					P
Antimony			7.3	B	7.6	B					P
Arsenic			3.0	U	3.0	U					P
Barium			4.8	B	4.0	U					P
Beryllium			0.5	U	0.5	U					P
Cadmium			0.7	U	0.7	U					P
Calcium			-252.0	B	240.0	U					P
Chromium			0.6	U	0.6	U					P
Cobalt			1.4	B	1.2	B					P
Copper			4.0	U	4.0	U					P
Iron			26.0	U	71.2	B					P
Lead			4.0	U	4.0	U					P
Magnesium			-20.6	B	169.8	B					P
Manganese			1.3	B	0.8	B					P
Mercury			0.1	U	0.1	U					CV
Nickel			1.7	B	1.5	B					P
Potassium			78.0	U	78.0	U					P
Selenium			9.0	U	9.0	U					P
Silver			2.0	U	2.0	U					P
Sodium			83.0	U	83.0	U					P
Thallium			3.0	U	3.0	U					P
Vanadium			1.3	B	1.0	B					P
Zinc			7.0	U	7.0	U					P
Cyanide											

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412_

ICP ID Number: OPTIMA_1A Initial Calibration Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000	508393	513532.3	102.7	527718	533553.6	106.7
Antimony		600		631.0	105.2		652.5	108.8
Arsenic		100		91.0	91.0		97.7	97.7
Barium		500		497.2	99.4		507.7	101.5
Beryllium		500		478.0	95.6		493.1	98.6
Cadmium		1000		887.6	88.8		913.0	91.3
Calcium	500000	500000	525269	520496.0	104.1	541915	543282.7	108.7
Chromium		500		475.8	95.2		490.4	98.1
Cobalt		500		477.3	95.5		488.9	97.8
Copper		500		531.8	106.4		533.6	106.7
Iron	200000	200000	181404	182799.2	91.4	187130	188747.5	94.4
Lead		500		425.8	85.2		435.3	87.1
Magnesium	500000	500000	499012	501820.0	100.4	515100	518646.6	103.7
Manganese		500		487.7	97.5		503.6	100.7
Mercury								
Nickel		1000		931.3	93.1		951.8	95.2
Potassium		25000		26311.8	105.2		25484.5	101.9
Selenium		500		508.6	101.7		521.8	104.4
Silver		200		215.2	107.6		216.8	108.4
Sodium		25000		26011.9	104.0		26181.6	104.7
Thallium		100		108.7	108.7		113.6	113.6
Vanadium		500		485.2	97.0		497.8	99.6
Zinc		1000		919.3	91.9		937.9	93.8

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ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

ICP ID Number: OPTIMA_1A ICS Source: HIGH_PURITY

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000				526890	534702.3	106.9
Antimony		600					650.1	108.4
Arsenic		100					94.5	94.5
Barium		500					506.9	101.4
Beryllium		500					497.9	99.6
Cadmium		1000					912.7	91.3
Calcium	500000	500000				532853	551660.8	110.3
Chromium		500					493.0	98.6
Cobalt		500					487.2	97.4
Copper		500					537.1	107.4
Iron	200000	200000				186058	188482.4	94.2
Lead		500					435.4	87.1
Magnesium	500000	500000				512221	517905.5	103.6
Manganese		500					505.9	101.2
Mercury								
Nickel		1000					950.6	95.1
Potassium		25000					25736.1	102.9
Selenium		500					518.8	103.8
Silver		200					217.5	108.8
Sodium		25000					25905.5	103.6
Thallium		100					111.5	111.5
Vanadium		500					502.9	100.6
Zinc		1000					938.5	93.8

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5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

FTAMW-55SS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	9865.8650		273.9770		9100.00	105.4		P
Antimony	75-125	520.8625		3.5130	B	455.00	113.7		P
Arsenic	75-125	491.3080		25.4455		455.00	102.4		P
Barium	75-125	9815.7085		33.8485	B	9100.00	107.5		P
Beryllium	75-125	242.4500		0.5000	U	227.00	106.8		P
Cadmium	75-125	237.8680		0.7000	U	227.00	104.8		P
Calcium									NR
Chromium	75-125	987.7390		3.2665	B	910.00	108.2		P
Cobalt	75-125	2501.2765		6.0720	B	2270.00	109.9		P
Copper	75-125	1256.5060		10.7640	B	1130.00	110.2		P
Iron		49231.7825		44218.5565		4550.00	110.2		P
Lead	75-125	536.1200		73.1930		455.00	101.7		P
Magnesium									NR
Manganese	75-125	2853.8930		416.9255		2270.00	107.4		P
Mercury	75-125	3.9554		0.1300	U	4.55	86.9		CV
Nickel	75-125	2490.7975		6.8140	B	2200.00	112.9		P
Potassium									NR
Selenium	75-125	471.5335		9.0000	U	455.00	103.6		P
Silver	75-125	1220.5710		4.9405	B	1130.00	107.6		P
Sodium									NR
Thallium	75-125	460.8225		4.2800	B	420.00	108.7		P
Vanadium	75-125	2431.4010		6.4385	B	2270.00	106.8		P
Zinc	75-125	2478.1100		50.7990		2270.00	106.9		P
Cyanide									NR

Comments:

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6
DUPLICATES

EPA SAMPLE NO.

FTAMW-55SD

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	273.9770		279.6925		2.1		P
Antimony		3.5130	B	4.5640	B	26.0	*	P
Arsenic	20.0	25.4455		27.2005		6.7		P
Barium		33.8485	B	32.8925	B	2.9		P
Beryllium		0.5000	U	0.5000	U			P
Cadmium		0.7000	U	0.7000	U			P
Calcium	800.0	2339.9840		2393.8125		2.3		P
Chromium		3.2665	B	3.1775	B	2.8		P
Cobalt		6.0720	B	6.0140	B	1.0		P
Copper		10.7640	B	7.8370	B	31.5	*	P
Iron		44218.5565		45453.0760		2.8		P
Lead		73.1930		73.8570		0.9		P
Magnesium		2755.7135		2869.0530		4.0		P
Manganese		416.9255		428.9365		2.8		P
Mercury		0.1300	U	0.1320	U			CV
Nickel		6.8140	B	6.4740	B	5.1		P
Potassium	1000.0	1144.7890		1175.1885		2.6		P
Selenium		9.0000	U	9.0000	U			P
Silver		4.9405	B	4.5165	B	9.0		P
Sodium		5384.7040		5442.2475		1.1		P
Thallium		4.2800	B	3.0000	U	200.0	*	P
Vanadium		6.4385	B	6.3365	B	1.6		P
Zinc		50.7990		10.0465	B	134.0	*	P
Cyanide								NR

7

LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412___

Solid LCS Source: _____

Aqueous LCS Source: HIGH_PURITY_#802115

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	9100.0	9356.0	102.8						
Antimony	455.0	496.4	109.1						
Arsenic	455.0	463.8	101.9						
Barium	9100.0	9687.2	106.5						
Beryllium	227.0	242.1	106.7						
Cadmium	227.0	237.3	104.5						
Calcium	22700.0	23155.0	102.0						
Chromium	910.0	964.2	106.0						
Cobalt	2270.0	2421.1	106.7						
Copper	1130.0	1180.8	104.5						
Iron	4550.0	4867.5	107.0						
Lead	455.0	461.9	101.5						
Magnesium	22700.0	23534.1	103.7						
Manganese	2270.0	2422.4	106.7						
Mercury	4.6	3.6	78.3						
Nickel	2270.0	2418.8	106.6						
Potassium	22700.0	23300.4	102.6						
Selenium	455.0	468.5	103.0						
Silver	1130.0	1185.4	104.9						
Sodium	22700.0	23343.3	102.8						
Thallium	455.0	450.8	99.1						
Vanadium	2270.0	2364.4	104.2						
Zinc	2270.0	2430.2	107.1						
Cyanide									

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.54		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium	589.59		1000	83.0	P
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

ICP ID Number: _____ Date: 02/01/03

Flame AA ID Number: COMM_FIMS___

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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13
PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTAM103DF	03/13/03		50
FTAM103IF	03/13/03		50
FTAM103SF	03/13/03		50
FTAM104SF	03/13/03		50
FTAMDP13F	03/13/03		50
FTAMDUP13	03/13/03		50
FTAMW-55S	03/13/03		50
FTAMW-55SD	03/13/03		50
FTAMW-55SS	03/13/03		50
FTAMW103D	03/13/03		50
FTAMW103I	03/13/03		50
FTAMW103S	03/13/03		50
FTAMW104S	03/13/03		50
FTAMW55SF	03/13/03		50
LCSW	03/13/03		50
PBW	03/13/03		50

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Method: CV

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
FTAM103DF	03/13/03		136
FTAM103IF	03/13/03		136
FTAM103SF	03/13/03		136
FTAM104SF	03/13/03		134
FTAMDP13F	03/13/03		132
FTAMDUP13	03/13/03		134
FTAMW-55S	03/13/03		130
FTAMW-55SD	03/13/03		132
FTAMW-55SS	03/13/03		130
FTAMW103D	03/13/03		128
FTAMW103I	03/13/03		130
FTAMW103S	03/13/03		136
FTAMW104S	03/13/03		134
FTAMW55SF	03/13/03		130
LCSW	03/13/03		100
PBW	03/13/03		100

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412__

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/15/03 End Date: 03/15/03

EPA Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1358		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1405		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1409		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1413		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1417																									
ZZZZZZ	1.00	1421																									
ZZZZZZ	1.00	1423																									
ZZZZZZ	1.00	1427																									
ZZZZZZ	1.00	1431																									
ZZZZZZ	1.00	1436																									
ICV	1.00	1446		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1454		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1458		X						X				X		X											
ICSAB	1.00	1503		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1507																									
ZZZZZZ	1.00	1513																									
ZZZZZZ	1.00	1517																									
ZZZZZZ	1.00	1521																									
ZZZZZZ	1.00	1525																									
ZZZZZZ	1.00	1529																									
CCV	1.00	1533		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1537		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1541																									
ZZZZZZ	1.00	1545																									
ZZZZZZ	1.00	1550																									
ZZZZZZ	1.00	1554																									
ZZZZZZ	1.00	1558																									
ZZZZZZ	1.00	1602																									
ZZZZZZ	1.00	1606																									
ZZZZZZ	1.00	1610																									
CCV	1.00	1615		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1619		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/15/03 End Date: 03/15/03

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1623																									
ZZZZZZ	1.00	1627																									
ZZZZZZ	1.00	1631																									
ZZZZZZ	1.00	1635																									
ZZZZZZ	1.00	1639																									
ZZZZZZ	1.00	1643																									
ICSA	1.00	1647		X						X				X		X											
ICSAB	1.00	1652		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCV	1.00	1656		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1700		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
PBW	1.00	1704		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
LCSW	1.00	1708		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW-55S	1.00	1712		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW-55SD	1.00	1716		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW-55SS	1.00	1720		X	X	X	X	X	X		X	X	X	X	X		X			X		X	X		X	X	X
ZZZZZZ	1.00	1725																									
FTAMW103D	1.00	1729		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW103I	1.00	1733		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW104S	1.00	1737		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCV	1.00	1741		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCB	1.00	1745		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW103S	1.00	1749		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMDUP13	1.00	1753		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMW55SF	1.00	1757		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAM103DF	1.00	1801		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAM103IF	1.00	1806		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAM104SF	1.00	1810		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAM103SF	1.00	1814		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
FTAMDP13F	1.00	1818		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
ICSA	1.00	1822		X						X				X		X											
ICSAB	1.00	1826		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X
CCV	1.00	1830		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/15/03 End Date: 03/15/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
CCB	1.00	1834		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/16/03 End Date: 03/16/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0942																				X				
S1	1.00	0945																				X				
S2	1.00	0947																				X				
S3	1.00	0949																				X				
ZZZZZZ	1.00	0951																								
ZZZZZZ	1.00	0954																								
ICV	1.00	0956																				X				
ICB	1.00	0958																				X				
ICSA	1.00	1001																								
ICSAB	1.00	1003																				X				
ZZZZZZ	1.00	1005																								
ZZZZZZ	1.00	1008																								
ZZZZZZ	1.00	1010																								
ZZZZZZ	1.00	1012																								
CCV	1.00	1015																				X				
CCB	1.00	1017																				X				
ZZZZZZ	1.00	1019																								
ZZZZZZ	1.00	1022																								
ZZZZZZ	1.00	1024																								
ZZZZZZ	1.00	1026																								
ZZZZZZ	1.00	1029																								
ZZZZZZ	1.00	1031																								
CCV	1.00	1033																				X				
CCB	1.00	1036																				X				
ZZZZZZ	1.00	1038																								
ZZZZZZ	1.00	1040																								
ZZZZZZ	1.00	1043																								
ZZZZZZ	1.00	1045																								
ZZZZZZ	1.00	1047																								
ZZZZZZ	1.00	1049																								
ICSA	1.00	1052																								
ICSAB	1.00	1054																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0412

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/16/03 End Date: 03/16/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV	1.00	1056																				X				
CCB	1.00	1059																				X				
PBW	1.00	1101																				X				
LCSW	1.00	1103																				X				
FTAMW-55S	1.00	1106																				X				
FTAMW-55SD	1.00	1108																				X				
FTAMW103D	1.00	1110																				X				
FTAMW103I	1.00	1112																				X				
FTAMW104S	1.00	1115																				X				
CCV	1.00	1117																				X				
CCB	1.00	1119																				X				
FTAMW103S	1.00	1122																				X				
FTAMDUP13	1.00	1124																				X				
FTAMW55SF	1.00	1126																				X				
FTAM103DF	1.00	1129																				X				
FTAM103IF	1.00	1131																				X				
FTAM104SF	1.00	1133																				X				
FTAM103SF	1.00	1136																				X				
FTAMDP13F	1.00	1138																				X				
ICSA	1.00	1140																								
ICSAB	1.00	1143																				X				
CCV	1.00	1145																				X				
CCB	1.00	1147																				X				

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/16/03___ End Date: 03/16/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1220																	X							
S1	1.00	1222																	X							
S2	1.00	1225																	X							
S3	1.00	1227																	X							
ZZZZZZ	1.00	1229																								
ZZZZZZ	1.00	1231																								
ICV	1.00	1234																	X							
ICB	1.00	1236																	X							
ICSA	1.00	1238																								
ICSAB	1.00	1241																	X							
ZZZZZZ	1.00	1243																								
ZZZZZZ	1.00	1245																								
ZZZZZZ	1.00	1248																								
ZZZZZZ	1.00	1250																								
CCV	1.00	1252																	X							
CCB	1.00	1255																	X							
ZZZZZZ	1.00	1257																								
ZZZZZZ	1.00	1259																								
ZZZZZZ	1.00	1301																								
ZZZZZZ	1.00	1304																								
ZZZZZZ	1.00	1306																								
ZZZZZZ	1.00	1308																								
CCV	1.00	1311																	X							
CCB	1.00	1313																	X							
ZZZZZZ	1.00	1315																								
ZZZZZZ	1.00	1318																								
ZZZZZZ	1.00	1320																								
ZZZZZZ	1.00	1322																								
ZZZZZZ	1.00	1325																								
ZZZZZZ	1.00	1327																								
ICSA	1.00	1329																								
ICSAB	1.00	1332																	X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/16/03 End Date: 03/16/03__

EPA Sample No.	D/F	Time	% R	Analytes																									
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
CCV	1.00	1334																	X							
CCB	1.00	1336																	X							
PBW	1.00	1338																	X							
LCSW	1.00	1341																	X							
FTAMW-55S	1.00	1343																	X							
FTAMW-55SD	1.00	1345																	X							
FTAMW103D	1.00	1348																	X							
FTAMW103I	1.00	1350																	X							
FTAMW104S	1.00	1352																	X							
CCV	1.00	1355																	X							
CCB	1.00	1357																	X							
FTAMW103S	1.00	1359																	X							
FTAMDUP13	1.00	1401																	X							
FTAMW55SF	1.00	1404																	X							
FTAM103DF	1.00	1406																	X							
FTAM103IF	1.00	1408																	X							
FTAM104SF	1.00	1411																	X							
FTAM103SF	1.00	1413																	X							
FTAMDP13F	1.00	1415																	X							
ICSA	1.00	1418																	X							
ICSAB	1.00	1420																	X							
CCV	1.00	1422																	X							
CCB	1.00	1424																	X							

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Instrument ID Number: COMM_FIMS_____ Method: CV_

Start Date: 03/14/03___ End Date: 03/14/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1509																X								
S0.2	1.00	1511																X								
S1	1.00	1512																X								
S2	1.00	1514																X								
S5	1.00	1515																X								
S10	1.00	1516																X								
ICV	1.00	1517																X								
ICB	1.00	1519																X								
ZZZZZZ	1.00	1520																								
ZZZZZZ	1.00	1521																								
ZZZZZZ	1.00	1523																								
ZZZZZZ	1.00	1524																								
ZZZZZZ	1.00	1525																								
ZZZZZZ	1.00	1527																								
ZZZZZZ	1.00	1528																								
ZZZZZZ	1.00	1529																								
CCV	1.00	1531																X								
CCB	1.00	1532																X								
ZZZZZZ	1.00	1533																								
ZZZZZZ	1.00	1535																								
ZZZZZZ	1.00	1536																								
ZZZZZZ	1.00	1537																								
ZZZZZZ	1.00	1539																								
ZZZZZZ	1.00	1540																								
ZZZZZZ	1.00	1541																								
ZZZZZZ	1.00	1543																								
CCV	1.00	1544																X								
CCB	1.00	1545																X								
ZZZZZZ	1.00	1547																								
PBW	1.00	1548																X								
LCSW	1.00	1549																X								
FTAMW-55S	1.00	1551																X								

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0412__

Instrument ID Number: COMM_FIMS_____ Method: CV_

Start Date: 03/14/03 End Date: 03/14/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
FTAMW-55SD	1.00	1552																X								
FTAMW-55SS	1.00	1553																X								
FTAMW103D	1.00	1555																X								
FTAMW103I	1.00	1556																X								
CCV	1.00	1557																X								
CCB	1.00	1559																X								
FTAMW104S	1.00	1600																X								
FTAMW103S	1.00	1601																X								
FTAMDUP13	1.00	1603																X								
FTAMW55SF	1.00	1604																X								
FTAM103DF	1.00	1605																X								
FTAM103IF	1.00	1607																X								
FTAM104SF	1.00	1608																X								
FTAM103SF	1.00	1609																X								
CCV	1.00	1611																X								
CCB	1.00	1612																X								
FTAMDP13F	1.00	1613																X								
ZZZZZZ	1.00	1615																								
CCV	1.00	1616																X								
CCB	1.00	1617																X								

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Mitkem Corporation

Date: *10-Apr-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0412
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6217**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **3/19/03**			Run ID: **TOC1_030319A**		
Client ID: **MB-6217**	Batch ID: **6217**	Units: **mg/L**			Analysis Date: **3/19/03**			SeqNo: **88231**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6217**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/19/03**			Run ID: **TOC1_030319A**		
Client ID: **LCS-6217**	Batch ID: **6217**	Units: **mg/L**			Analysis Date: **3/19/03**			SeqNo: **88232**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	54.9	6.0	54.1	0	101	80	120	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

000671

QUALITY CONTROL RESULTS

Job Number.: 203210

Report Date.: 03/21/2003

CUSTOMER: NITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Test Method.....: 300.0
Method Description.: Ion Chromatography Analysis
Parameter.....: Chloride

Batch.....: 15179
Equipment Code....: LACHET 3

Analyst...: ddm
Test Code.: CHL

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15179-002	W03CWRK009	mg/L	50.00000		50.00000						03/11/2003	1747
STD	15179-003	W03CWRK010	mg/L	30.00000		30.00000						03/11/2003	1800
STD	15179-004	W03CWRK011	mg/L	10.00000		10.00000						03/11/2003	1813
STD	15179-005	W03CWRK012	mg/L	4.00000		4.00000						03/11/2003	1827
STD	15179-006	W03CWRK013	mg/L	1.00000		1.00000						03/11/2003	1840
STD	15179-007	W03CWRK014	mg/L	0.50000 B		0.50000						03/11/2003	1854
ICV	15179-009	W03AWRK035	mg/L	24.75700		25.00000		99			90-110	03/11/2003	1921
ICB	15179-010		mg/L	0.14700 U								03/11/2003	1934
CCV	15179-011	W03AWRK035	mg/L	24.87000		25.00000		99		%	90-110	03/11/2003	1947
CCB	15179-012		mg/L	0.14700 U								03/11/2003	2001
MS	15179-013	W03ASPK001	mg/L	23.93900		24.00000	0.14700 U	100			75-125	03/11/2003	2014
LCS	15179-014	W03ALCS004	mg/L	10.21500		11.4000		90		%	85-115	03/11/2003	2028
LCS	15179-015	W03ALCS004	mg/L	9.88000		11.40000		87		%	85-115	03/11/2003	2041
MB	15179-016		mg/L	0.14700 U								03/11/2003	2054
MD	203195-1		mg/L	12.99700			12.94300	0.4			20.0	03/11/2003	2121
MS	203195-1	W03ASPK001	mg/L	37.49800		24.00000	12.94300	102			75-125	03/11/2003	2135
CCV	15179-022	W03AWRK035	mg/L	25.15000		25.00000		101		%	90-110	03/11/2003	2215
CCB	15179-023		mg/L	0.14700 U								03/11/2003	2228
CCV	15179-024	W03AWRK035	mg/L	24.79600		25.00000		99		%	90-110	03/12/2003	1507
CCB	15179-025		mg/L	0.14700 U								03/12/2003	1520
CCV	15179-028	W03AWRK035	mg/L	24.65000		25.00000		99		%	90-110	03/12/2003	1600
CCB	15179-029		mg/L	0.14700 U								03/12/2003	1614
CCV	15179-030	W03CWRK018	mg/L	24.55100		25.00000		98		%	90-110	03/13/2003	1143
CCB	15179-031		mg/L	0.14700 U								03/13/2003	1156
LCS	15179-032	W03ALCS004	mg/L	10.05100		11.40000		88		%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	9.85300		11.40000		86		%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.14700 U								03/13/2003	1237
MD	203209-1		mg/L	5.25700			5.28700	0.6			20.0	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	28.97400		24.00000	5.28700	99			75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	24.39200		25.00000		98		%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.14700 U								03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	24.90700		25.00000		100		%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.14700 U								03/13/2003	1652

Test Method.....: 300.0
Method Description.: Ion Chromatography Analysis
Parameter.....: Nitrate as N (NO3-N)

Batch.....: 15179
Equipment Code....: LACHET 3

Analyst...: ddm
Test Code.: NO3

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15179-002	W03CWRK009	mg/L	5.00000		5.00000						03/11/2003	1747
STD	15179-003	W03CWRK010	mg/L	3.00000		3.00000						03/11/2003	1800
STD	15179-004	W03CWRK011	mg/L	1.00000		1.00000						03/11/2003	1813
STD	15179-005	W03CWRK012	mg/L	0.40000		0.40000						03/11/2003	1827
STD	15179-006	W03CWRK013	mg/L	0.10000		0.10000						03/11/2003	1840
STD	15179-007	W03CWRK014	mg/L	0.05000 B		0.05000						03/11/2003	1854
ICV	15179-009	W03AWRK035	mg/L	2.50000		2.50000		100			90-110	03/11/2003	1921
ICB	15179-010		mg/L	0.00200 U								03/11/2003	1934
CCV	15179-011	W03AWRK035	mg/L	2.50500		2.50000		100		%	90-110	03/11/2003	1947
CCB	15179-012		mg/L	0.00200 U								03/11/2003	2001
MS	15179-013	W03ASPK001	mg/L	1.98900		2.00000	0.00200 U	99			75-125	03/11/2003	2014
LCS	15179-014	W03ALCS004	mg/L	11.04400		9.71000		114		%	85-115	03/11/2003	2028

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203210 Report Date.: 03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15179 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
LCS	15179-015	W03ALCS004	mg/L	8.68100		9.71000		89	%	85-115	03/11/2003	2041
MB	15179-016		mg/L	0.00200 U							03/11/2003	2054
MD	203195-1		mg/L	0.57300			0.56200	1.9		20.0	03/11/2003	2121
MS	203195-1	W03ASPK001	mg/L	2.54000		2.00000	0.56200	99		75-125	03/11/2003	2135
CCV	15179-022	W03AWRK035	mg/L	2.51900		2.50000		101	%	90-110	03/11/2003	2215
CCB	15179-023		mg/L	0.00200 U							03/11/2003	2228
CCV	15179-024	W03AWRK035	mg/L	2.47300		2.50000		99	%	90-110	03/12/2003	1507
CCB	15179-025		mg/L	0.00200 U							03/12/2003	1520
CCV	15179-028	W03AWRK035	mg/L	2.48000		2.50000		99	%	90-110	03/12/2003	1600
CCB	15179-029		mg/L	0.00200 U							03/12/2003	1614
CCV	15179-030	W03CWRK018	mg/L	2.47700		2.50000		99	%	90-110	03/13/2003	1143
CCB	15179-03[illegible]		mg/L	0.00200 U							03/13/2003	1156
LCS	15179-032	W03ALCS004	mg/L	10.84400		9.71000		112	%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	8.80900		9.71000		91	%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.00200 U							03/13/2003	1237
MD	203209-1		mg/L	0.04000 B			0.04100 B	0.0010		0.1000	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	1.93400		2.00000	0.04100 B	95		75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	2.48000		2.50000		99	%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.00200 U							03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	2.49500		2.50000		100	%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.00200 U							03/13/2003	1652

Test Method.....: 300.0 Batch.....: 15179 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15179-002	W03CWRK009	mg/L	5.00000		5.00000					03/11/2003	1747
STD	15179-003	W03CWRK010	mg/L	3.00000		3.00000					03/11/2003	1800
STD	15179-004	W03CWRK011	mg/L	1.00000		1.00000					03/11/2003	1813
STD	15179-005	W03CWRK012	mg/L	0.40000		0.40000					03/11/2003	1827
STD	15179-006	W03CWRK013	mg/L	0.10000		0.10000					03/11/2003	1840
STD	15179-007	W03CWRK014	mg/L	0.05000 B		0.05000					03/11/2003	1854
ICV	15179-009	W03AWRK035	mg/L	2.46300		2.50000		99		90-110	03/11/2003	1921
ICB	15179-010		mg/L	0.00300 U							03/11/2003	1934
CCV	15179-011	W03AWRK035	mg/L	2.47900		2.50000		99	%	90-110	03/11/2003	1947
CCB	15179-012		mg/L	0.00300 U							03/11/2003	2001
MS	15179-013	W03ASPK001	mg/L	1.93600		2.00000	0.00300 U	97		75-125	03/11/2003	2014
LCS	15179-014	W03ALCS004	mg/L	5.35300		5.00000		107	%	85-115	03/11/2003	2028
LCS	15179-015	W03ALCS004	mg/L	4.82600		5.00000		97	%	85-115	03/11/2003	2041
MB	15179-016		mg/L	0.00300 U							03/11/2003	2054
MD	203195-1		mg/L	0.00300 U			0.00300 U	0.0000		0.1000	03/11/2003	2121
MS	203195-1	W03ASPK001	mg/L	1.84600		2.00000	0.00300 U	92		75-125	03/11/2003	2135
CCV	15179-022	W03AWRK035	mg/L	2.47300		2.50000		99	%	90-110	03/11/2003	2215
CCB	15179-023		mg/L	0.00300 U							03/11/2003	2228
CCV	15179-024	W03AWRK035	mg/L	2.48300		2.50000		99	%	90-110	03/12/2003	1507
CCB	15179-025		mg/L	0.00300 U							03/12/2003	1520
CCV	15179-028	W03AWRK035	mg/L	2.47500		2.50000		99	%	90-110	03/12/2003	1600
CCB	15179-029		mg/L	0.00300 U							03/12/2003	1614
CCV	15179-030	W03CWRK018	mg/L	2.40700		2.50000		96	%	90-110	03/13/2003	1143
CCB	15179-031		mg/L	0.00300 U							03/13/2003	1156

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000017

QUALITY CONTROL RESULTS

Job Number.: 203210 — Report Date.: 03/21/2003

CUSTOMER: MITKEM — PROJECT: NITRATE SULFATE — ATTN: Paul Senecal

Test Method.....: 300.0 — Batch.....: 15179 — Analyst...: ddm
Method Description.: Ion Chromatography Analysis — Equipment Code....: LACHET 3 — Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
LCS	15179-032	W03ALCS004	mg/L	5.27300		5.00000		105	%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	4.80900		5.00000		96	%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.00300 U							03/13/2003	1237
MD	203209-1		mg/L	0.00300 U			0.00300 U	0.0000		0.1000	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	1.82600		2.00000	0.00300 U	91		75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	2.31700		2.50000		93	%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.00300 U							03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	2.49900		2.50000		100	%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.00300 U							03/13/2003	1652

Test Method.....: 300.0 — Batch.....: 15179 — Analyst...: ddm
Method Description.: Ion Chromatography Analysis — Equipment Code....: LACHET 3 — Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15179-002	W03CWRK009	mg/L	100.00000		100.00000					03/11/2003	1747
STD	15179-003	W03CWRK010	mg/L	60.00000		60.00000					03/11/2003	1800
STD	15179-004	W03CWRK011	mg/L	20.00000		20.00000					03/11/2003	1813
STD	15179-005	W03CWRK012	mg/L	8.00000		8.00000					03/11/2003	1827
STD	15179-006	W03CWRK013	mg/L	2.00000		2.00000					03/11/2003	1840
STD	15179-007	W03CWRK014	mg/L	1.00000		1.00000					03/11/2003	1854
ICV	15179-009	W03AWRK035	mg/L	51.70900		50.00000		103		90-110	03/11/2003	1921
ICB	15179-010		mg/L	0.01200 U							03/11/2003	1934
CCV	15179-011	W03AWRK035	mg/L	51.16400		50.00000		102	%	90-110	03/11/2003	1947
CCB	15179-012		mg/L	0.30600 B							03/11/2003	2001
MS	15179-013	W03ASPK001	mg/L	19.43900		20.00000	0.01200 U	97		75-125	03/11/2003	2014
LCS	15179-014	W03ALCS004	mg/L	8.47200		9.21000		92	%	85-115	03/11/2003	2028
LCS	15179-015	W03ALCS004	mg/L	8.86800		9.21000		96	%	85-115	03/11/2003	2041
MB	15179-016		mg/L	0.01200 U							03/11/2003	2054
MD	203195-1		mg/L	8.41800			8.46100	0.5		20.0	03/11/2003	2121
MS	203195-1	W03ASPK001	mg/L	28.07900		20.00000	8.46100	98		75-125	03/11/2003	2135
CCV	15179-022	W03AWRK035	mg/L	51.71000		50.00000		103	%	90-110	03/11/2003	2215
CCB	15179-023		mg/L	0.01200 U							03/11/2003	2228
CCV	15179-024	W03AWRK035	mg/L	50.93600		50.00000		102	%	90-110	03/12/2003	1507
CCB	15179-025		mg/L	0.01200 U							03/12/2003	1520
CCV	15179-028	W03AWRK035	mg/L	50.41600		50.00000		101	%	90-110	03/12/2003	1600
CCB	15179-029		mg/L	0.01200 U							03/12/2003	1614
CCV	15179-030	W03CWRK018	mg/L	50.14300		50.00000		100	%	90-110	03/13/2003	1143
CCB	15179-031		mg/L	0.01200 U							03/13/2003	1156
LCS	15179-032	W03ALCS004	mg/L	8.16700		9.21000		89	%	85-115	03/13/2003	1210
LCS	15179-033	W03ALCS004	mg/L	8.49600		9.21000		92	%	85-115	03/13/2003	1223
MB	15179-034		mg/L	0.27600 B							03/13/2003	1237
MD	203209-1		mg/L	7.57800			7.64300	0.9		20.0	03/13/2003	1304
MS	203209-1	W03ASPK001	mg/L	26.64400		20.00000	7.64300	95		75-125	03/13/2003	1317
CCV	15179-042	W03CWRK018	mg/L	49.89600		50.00000		100	%	90-110	03/13/2003	1424
CCB	15179-043		mg/L	0.01200 U							03/13/2003	1438
CCV	15179-052	W03CWRK018	mg/L	49.89000		50.00000		100	%	90-110	03/13/2003	1638
CCB	15179-053		mg/L	0.01200 U							03/13/2003	1652

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Batch #: 030311 runlog	Calibration used: 03/11/2003	Instrument: Lachat 8000 IC					
Reviewer:		Date: 3/17/03					
Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/11/03	17:33:39	BLANK	030311.001	epa300a.met	1	dave	
03/11/03	17:47:04	STDW03CWRK009	030311.002	epa300a.met	1	dave	Calibration Std. 1
03/11/03	18:00:30	STDW03CWRK010	030311.003	epa300a.met	1	dave	Calibration Std. 2
03/11/03	18:13:57	STDW03CWRK011	030311.004	epa300a.met	1	dave	Calibration Std. 3
03/11/03	18:27:22	STDW03CWRK012	030311.005	epa300a.met	1	dave	Calibration Std. 4
03/11/03	18:40:48	STDW03CWRK013	030311.006	epa300a.met	1	dave	Calibration Std. 5
03/11/03	18:54:13	STDW03CWRK014	030311.007	epa300a.met	1	dave	Calibration Std. 6
03/11/03	19:07:38	BLANK STD	030311.008	epa300a.met	1	dave	Calibration Std. 7
03/11/03	19:21:02	ICVW03AWRK035	030311.009	epa300a.met	1	dave	
03/11/03	19:34:27	ICB	030311.010	epa300a.met	1	dave	
03/11/03	19:47:52	CCVW03AWRK035	030311.011	epa300a.met	1	dave	
03/11/03	20:01:18	CCB	030311.012	epa300a.met	1	dave	
03/11/03	20:14:43	MS W03ASPK001	030311.013	epa300a.met	1	dave	
03/11/03	20:28:06	LCSW03ALCS004	030311.014	epa300a.met	1	dave	
03/11/03	20:41:31	LCSW03ALCS004	030311.015	epa300a.met	5	dave	
03/11/03	20:54:58	MB	030311.016	epa300a.met	1	dave	
03/11/03	21:08:24	203195-1	030311.017	epa300a.met	1	dave	
03/11/03	21:21:50	203195-1 -MD	030311.018	epa300a.met	1	dave	
03/11/03	21:35:16	203195-1 -MS	030311.019	epa300a.met	1	dave	
03/11/03	21:48:42	203195-2	030311.020	epa300a.met	1	dave	
03/11/03	22:02:07	203195-3	030311.021	epa300a.met	1	dave	
03/11/03	22:15:33	CCVW03AWRK035	030311.022	epa300a.met	1	dave	
03/11/03	22:28:59	CCB	030311.023	epa300a.met	1	dave	
03/12/03	15:07:11	CCVW03AWRK035	030311.024	epa300a.met	1	dave	
03/12/03	15:20:36	CCB	030311.025	epa300a.met	1	dave	
03/12/03	15:34:01	203205-1	030311.026	epa300a.met	1	dave	
03/12/03	15:47:27	203205-2	030311.027	epa300a.met	1	dave	
03/12/03	16:00:54	CCVW03AWRK035	030311.028	epa300a.met	1	dave	
03/12/03	16:14:20	CCB	030311.029	epa300a.met	1	dave	
03/13/03	11:43:22	CCVW03CWRK018	030311.030	epa300a.met	1	dave	
03/13/03	11:56:48	CCB	030311.031	epa300a.met	1	dave	
03/13/03	12:10:16	LCSW03ALCS004	030311.032	epa300a.met	1	dave	
03/13/03	12:23:42	LCSW03ALCS004	030311.033	epa300a.met	5	dave	
03/13/03	12:37:09	MB	030311.034	epa300a.met	1	dave	
03/13/03	12:50:35	203209-1	030311.035	epa300a.met	1	dave	
03/13/03	13:04:01	203209-1 -MD	030311.036	epa300a.met	1	dave	
03/13/03	13:17:25	203209-1 -MS	030311.037	epa300a.met	1	dave	
03/13/03	13:30:50	203209-2	030311.038	epa300a.met	1	dave	
03/13/03	13:44:15	203209-3	030311.039	epa300a.met	1	dave	
03/13/03	13:57:40	203209-4	030311.040	epa300a.met	1	dave	
03/13/03	14:11:06	203210-1	030311.041	epa300a.met	1	dave	
03/13/03	14:24:32	CCVW03CWRK018	030311.042	epa300a.met	1	dave	
03/13/03	14:38:03	CCB	030311.043	epa300a.met	1	dave	
03/13/03	14:51:30	203210-2	030311.044	epa300a.met	1	dave	
03/13/03	15:04:57	203210-3	030311.045	epa300a.met	1	dave	
03/13/03	15:18:24	203210-4	030311.046	epa300a.met	1	dave	
03/13/03	15:31:48	203210-5	030311.047	epa300a.met	1	dave	

Batch #: 030311 runlog	Calibration used: 03/11/2003	Instrument: Lachat 8000 IC					
Reviewer:		Date: 3/17/03					
Date	Time	Sample Id	File Name	Method Name	Dilutions	Analyst	Remarks
03/13/03	15:45:15	203210-6	030311.048	epa300a.met	1	dave	
03/13/03	15:58:41	203211-1	030311.049	epa300a.met	1	dave	
03/13/03	16:12:07	203211-3	030311.050	epa300a.met	1	dave	
03/13/03	16:25:31	203211-1	030311.051	epa300a.met	10	dave	Rerun with dilution
03/13/03	16:38:56	CCVW03CWRK018	030311.052	epa300a.met	1	dave	
03/13/03	16:52:22	CCB	030311.053	epa300a.met	1	dave	

FIELD DUPLICATE PRECISION

ANALYTE	FTAMW-DUP13	FTAMW-104S	RPD	DIFFERENCE
Aluminum	161B	175B	#VALUE!	#VALUE!
Antimony	6.2B	3.0U	#VALUE!	#VALUE!
Arsenic	3.0U	3.0U	#VALUE!	#VALUE!
Barium	32.6B	32.8B	#VALUE!	#VALUE!
Beryllium	0.50U	0.50U	#VALUE!	#VALUE!
Cadmium	0.70U	0.70U	#VALUE!	#VALUE!
Calcium	2450	2410	1.65	40
Chromium	0.95B	3.9	#VALUE!	~~#VALUE!~~ 3.9
Cobalt	1.6B	1.9B	#VALUE!	#VALUE!
Copper	4.0U	4.0U	#VALUE!	#VALUE!
Iron	74.7B	104B	#VALUE!	#VALUE!
Lead	4.0U	4.0U	#VALUE!	#VALUE!
Magnesium	2370	2430	2.50	60
Manganese	21	21.5	2.35	0.5
Mercury	0.13U	0.13U	#VALUE!	#VALUE!
Nickel	3.0B	4.9B	#VALUE!	#VALUE!
Potassium	1370	1360	0.73	10
Selenium	9.0U	9.0U	#VALUE!	#VALUE!
Silver	2.0U	2.0U	#VALUE!	#VALUE!
Sodium	9890	9920	0.30	30
Thallium	3.0U	3.0U	#VALUE!	#VALUE!
Vanadium	1.6B	1.8B	#VALUE!	#VALUE!
Zinc	11.2B	9.9B	#VALUE!	#VALUE!
Chloride	11	11	0.00	0
Nitrate	0.24	0.26	8.00	0.02
Nitrite	0.10U	0.10U	#VALUE!	#VALUE!
Sulfate	11	11	0.00	0
TOC	6U	6U	#VALUE!	#VALUE!

ANALYTE	FTAMW-DUP13-F	FTAMW-104S-F	RPD	DIFFERENCE
Aluminum	17.0U	17.0U	#VALUE!	#VALUE!
Antimony	4.8B	3.0U	#VALUE!	#VALUE!
Arsenic	3.0U	3.0U	#VALUE!	#VALUE!
Barium	28.4B	29.8B	#VALUE!	#VALUE!
Beryllium	0.50U	0.50U	#VALUE!	#VALUE!
Cadmium	0.70U	0.70U	#VALUE!	#VALUE!
Calcium	2450	2480	1.22	30
Chromium	0.60U	0.73B	#VALUE!	#VALUE!
Cobalt	1.3B	1.3B	#VALUE!	#VALUE!
Copper	4.0U	4.0U	#VALUE!	#VALUE!
Iron	46.1B	41.4B	#VALUE!	#VALUE!
Lead	4.0U	4.0U	#VALUE!	#VALUE!
Magnesium	2320	2450	5.45	130
Manganese	21	22.1	5.10	1.1
Mercury	0.13U	0.13U	#VALUE!	#VALUE!
Nickel	2.8B	3.2B	#VALUE!	#VALUE!
Potassium	1300	1380	5.97	80
Selenium	9.0U	9.0U	#VALUE!	#VALUE!
Silver	2.0U	2.0U	#VALUE!	#VALUE!
Sodium	9810	10100	2.91	290
Thallium	3.0U	3.0U	#VALUE!	#VALUE!
Vanadium	1.1B	0.70U	#VALUE!	#VALUE!
Zinc	8.7B	9.5B	#VALUE!	#VALUE!

Ag 328.068	249.0	0.0013 mg/L	0.00029	0.0013 mg/L	0.00029	21.62%
Al 308.215	692.5	0.0264 mg/L	0.00605	0.0264 mg/L	0.00605	22.96%
As 188.979	2.4	0.0017 mg/L	0.00049	0.0017 mg/L	0.00049	28.24%
Ba 233.527	575.6	0.0166 mg/L	0.00022	0.0166 mg/L	0.00022	1.34%
Be 313.107	301.0	0.0002 mg/L	0.00001	0.0002 mg/L	0.00001	6.95%
Co 228.616	63.6	0.0054 mg/L	0.00004	0.0054 mg/L	0.00004	0.83%
Cr 267.716	43.6	0.0009 mg/L	0.00000	0.0009 mg/L	0.00000	0.20%
Cu 324.752	955.5	0.0047 mg/L	0.00012	0.0047 mg/L	0.00012	2.61%
Fe 273.955	1303.3	0.0545 mg/L	0.00129	0.0545 mg/L	0.00129	2.37%
Mg 279.077	57523.5	4.3661 mg/L	0.02668	4.3661 mg/L	0.02668	0.61%
Mn 257.610	60289.1	0.1829 mg/L	0.00106	0.1829 mg/L	0.00106	0.58%
Ni 231.604	43.2	0.0048 mg/L	0.00027	0.0048 mg/L	0.00027	5.75%
Pb 220.353	3.3	0.0022 mg/L	0.00049	0.0022 mg/L	0.00049	22.30%
Sb 206.836	2.3	0.0036 mg/L	0.00229	0.0036 mg/L	0.00229	62.91%
Se 196.026	-2.3	-0.0039 mg/L	0.00214	-0.0039 mg/L	0.00214	54.35%
Tl 190.801	3.7	0.0025 mg/L	0.00000	0.0025 mg/L	0.00000	0.13%
V 292.402	298.6	0.0024 mg/L	0.00031	0.0024 mg/L	0.00031	13.15%
Zn 206.200	88.1	0.0086 mg/L	0.00090	0.0086 mg/L	0.00090	10.40%
Na 330.237	4250.3	4.4426 mg/L	0.11098	4.4426 mg/L	0.11098	2.50%
Cd 226.502	1.2	0.0001 mg/L	0.00017	0.0001 mg/L	0.00017	267.06%
Ti 334.940	926.0	0.0018 mg/L	0.00038	0.0018 mg/L	0.00038	21.75%
Ca 227.546	269.9	3.1126 mg/L	0.01922	3.1126 mg/L	0.01922	0.62%

Sequence No.: 54
Sample ID: B0412-07C,6096
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 3/15/03 5:52:33 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0412-07C,6096

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	200.5	0.0011	mg/L	0.00022	0.0011	mg/L	0.00022	19.96%
Al 308.215	4169.8	0.1607	mg/L	0.00641	0.1607	mg/L	0.00641	3.99%
As 188.979	-0.7	-0.0005	mg/L	0.00128	-0.0005	mg/L	0.00128	239.35%
Ba 233.527	1129.3	0.0326	mg/L	0.00009	0.0326	mg/L	0.00009	0.26%
Be 313.107	266.3	0.0001	mg/L	0.00002	0.0001	mg/L	0.00002	11.42%
Co 228.616	19.4	0.0016	mg/L	0.00020	0.0016	mg/L	0.00020	12.21%
Cr 267.716	44.7	0.0009	mg/L	0.00005	0.0009	mg/L	0.00005	5.56%
Cu 324.752	745.6	0.0037	mg/L	0.00034	0.0037	mg/L	0.00034	9.05%
Fe 273.955	1845.0	0.0747	mg/L	0.00001	0.0747	mg/L	0.00001	0.01%
Mg 279.077	31267.9	2.3726	mg/L	0.00758	2.3726	mg/L	0.00758	0.32%
Mn 257.610	6955.3	0.0210	mg/L	0.00015	0.0210	mg/L	0.00015	0.69%
Ni 231.604	27.2	0.0030	mg/L	0.00032	0.0030	mg/L	0.00032	10.44%
Pb 220.353	1.9	0.0011	mg/L	0.00048	0.0011	mg/L	0.00048	41.76%
Sb 206.836	4.0	0.0062	mg/L	0.00014	0.0062	mg/L	0.00014	2.18%
Se 196.026	-3.0	-0.0050	mg/L	0.00066	-0.0050	mg/L	0.00066	13.06%
Tl 190.801	1.3	0.0009	mg/L	0.00203	0.0009	mg/L	0.00203	233.34%
V 292.402	190.5	0.0016	mg/L	0.00031	0.0016	mg/L	0.00031	19.75%
Zn 206.200	112.7	0.0112	mg/L	0.00003	0.0112	mg/L	0.00003	0.29%
Na 330.237	8127.0	8.4948	mg/L	0.02243	8.4948	mg/L	0.02243	0.26%
Cd 226.502	-0.7	0.0000	mg/L	0.00006	0.0000	mg/L	0.00006	154.92%
Ti 334.940	1517.3	0.0029	mg/L	0.00002	0.0029	mg/L	0.00002	0.60%
Ca 227.546	212.8	2.4546	mg/L	0.02750	2.4546	mg/L	0.02750	1.12%

Sequence No.: 55
Sample ID: B0412-08C,6096 FTAMW-555F
Analyst: EMF 5/9/03
Sample Wt:
Dilution:

Autosampler Location: 46
Date Collected: 3/15/03 5:56:39 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0412-08C,6096

Analyte	Mean Corrected Intensity	Calib Conc.	Calib Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Ag 328.068	-594.4	0.0034	mg/L	0.00016	0.0034	mg/L	0.00016	4.91%
Al 308.215	706.4	~~0.0269~~	~~mg/L~~	0.00190	0.0269	mg/L	0.00190	7.05%
As 188.979	32.9	0.0256	mg/L	0.00040	0.0256	mg/L	0.00040	1.56%

As = 0.0256 mg/L x 1000 ug/1 mg = 25.6 ug/L

Ba 233.527	982.1	0.0298 mg/L	0.00003	0.0298 mg/L	0.00003	0.10%
Be 313.107	313.2	0.0002 mg/L	0.00001	0.0002 mg/L	0.00001	4.28%
Co 228.616	54.0	0.0053 mg/L	0.00022	0.0053 mg/L	0.00022	4.09%
Cr 267.716	33.7	0.0017 mg/L	0.00002	0.0017 mg/L	0.00002	1.21%
Cu 324.752	-106.7	0.0041 mg/L	0.00003	0.0041 mg/L	0.00003	0.84%
Fe 273.955	1109400.5	44.604 mg/L	0.4550	44.604 mg/L	0.4550	1.02%
Mg 279.077	36187.3	2.7292 mg/L	0.02026	2.7292 mg/L	0.02026	0.74%
Mn 257.610	140626.1	0.4283 mg/L	0.00466	0.4283 mg/L	0.00466	1.09%
Ni 231.604	-138.9	0.0061 mg/L	0.00000	0.0061 mg/L	0.00000	0.00%
Pb 220.353	93.5	0.0596 mg/L	0.00259	0.0596 mg/L	0.00259	4.34%
Sb 206.836	3.1	0.0046 mg/L	0.00291	0.0046 mg/L	0.00291	62.99%
Se 196.026	-7.6	-0.0020 mg/L	0.00254	-0.0020 mg/L	0.00254	126.18%
Tl 190.801	2.7	0.0036 mg/L	0.00278	0.0036 mg/L	0.00278	77.80%
V 292.402	467.7	0.0047 mg/L	0.00002	0.0047 mg/L	0.00002	0.32%
Zn 206.200	83.3	0.0082 mg/L	0.00008	0.0082 mg/L	0.00008	0.91%
Na 330.237	4438.9	4.7074 mg/L	0.09020	4.7074 mg/L	0.09020	1.92%
Cd 226.502	23.2	-0.0009 mg/L	0.00009	-0.0009 mg/L	0.00009	10.03%
Ti 334.940	750.1	0.0014 mg/L	0.00005	0.0014 mg/L	0.00005	3.41%
Ca 227.546	226.7	2.3909 mg/L	0.03621	2.3909 mg/L	0.03621	1.51%

Sequence No.: 56 **Autosampler Location: 47**
Sample ID: B0412-09C,6096 **Date Collected: 3/15/03 6:00:47 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0412-09C,6096

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	188.4	0.0010	mg/L	0.00036	0.0010	mg/L	0.00036	36.68%
Al 308.215	222.3	0.0081	mg/L	0.00153	0.0081	mg/L	0.00153	18.88%
As 188.979	-0.3	-0.0002	mg/L	0.00135	-0.0002	mg/L	0.00135	590.91%
Ba 233.527	849.8	0.0246	mg/L	0.00009	0.0246	mg/L	0.00009	0.37%
Be 313.107	213.9	0.0001	mg/L	0.00000	0.0001	mg/L	0.00000	3.58%
Co 228.616	64.7	0.0055	mg/L	0.00023	0.0055	mg/L	0.00023	4.27%
Cr 267.716	34.1	0.0007	mg/L	0.00006	0.0007	mg/L	0.00006	8.84%
Cu 324.752	554.4	0.0026	mg/L	0.00009	0.0026	mg/L	0.00009	3.47%
Fe 273.955	880.3	0.0379	mg/L	0.00258	0.0379	mg/L	0.00258	6.80%
Mg 279.077	53416.2	4.0550	mg/L	0.00317	4.0550	mg/L	0.00317	0.08%
Mn 257.610	78985.0	0.2397	mg/L	0.00020	0.2397	mg/L	0.00020	0.08%
Ni 231.604	20.6	0.0023	mg/L	0.00030	0.0023	mg/L	0.00030	12.96%
Pb 220.353	0.0	0.0000	mg/L	0.00072	0.0000	mg/L	0.00072	>999.9%
Sb 206.836	0.9	0.0014	mg/L	0.00376	0.0014	mg/L	0.00376	274.97%
Se 196.026	-0.9	-0.0015	mg/L	0.00034	-0.0015	mg/L	0.00034	22.91%
Tl 190.801	2.1	0.0014	mg/L	0.00241	0.0014	mg/L	0.00241	168.31%
V 292.402	217.0	0.0016	mg/L	0.00032	0.0016	mg/L	0.00032	20.19%
Zn 206.200	55.6	0.0054	mg/L	0.00001	0.0054	mg/L	0.00001	0.21%
Na 330.237	8701.9	9.0955	mg/L	0.17546	9.0955	mg/L	0.17546	1.93%
Cd 226.502	-1.7	-0.0001	mg/L	0.00015	-0.0001	mg/L	0.00015	158.49%
Ti 334.940	518.0	0.0010	mg/L	0.00004	0.0010	mg/L	0.00004	3.75%
Ca 227.546	334.8	3.8611	mg/L	0.00978	3.8611	mg/L	0.00978	0.25%

Sequence No.: 57 **Autosampler Location: 48**
Sample ID: B0412-10C,6096 **Date Collected: 3/15/03 6:04:54 PM**
Analyst:
Sample Wt: **Sample Prep Volume:**
Dilution: **Data Type: Original**

Mean Data: B0412-10C,6096

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	175.1	0.0008	mg/L	0.00005	0.0008	mg/L	0.00005	5.72%
Al 308.215	838.6	0.0312	mg/L	0.00125	0.0312	mg/L	0.00125	4.01%
As 188.979	-1.0	-0.0008	mg/L	0.00003	-0.0008	mg/L	0.00003	3.66%
Ba 233.527	510.5	0.0147	mg/L	0.00002	0.0147	mg/L	0.00002	0.16%
Be 313.107	109.2	0.0001	mg/L	0.00001	0.0001	mg/L	0.00001	19.22%
Co 228.616	27.8	0.0024	mg/L	0.00009	0.0024	mg/L	0.00009	3.89%

TETRA TECH NUS

PHIL-17141

TO: G. GLENN **DATE:** MAY 14, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
FIRE TRAINING AREA/WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0420

SAMPLES: **1/Soil/**

FTA-SS-111

6/Aqueous/

WOD-MW3	WOD-WFF15-GW1
WOD-WFF15-GW2	WOD-WFF16-GW2S
WOD-WFF16-GW2D	TB-031203

OVERVIEW

The sample set for the Fire Training Area and Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0420, consists of one soil environmental sample (designated FTA-), five aqueous environmental samples (designated WOD-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles, the aqueous environmental samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). The soil sample was analyzed for TCL volatiles and PCBs. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 12, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MAJOR PROBLEMS

- Due to limited sample volume for sample WOD-WFF16-GW2D, the PCB extract was analyzed to evaluate the semivolatile compounds. The sample was extracted at a neutral pH, therefore, the

non-detected results for acidic phenolic target analytes and basic anilines and amine-substituted analytes were rejected (UR). The neutral analytes were qualified as estimated (UJ). No semivolatile surrogate standards were present in the extract, but the GC analysis that was also performed on the same extract revealed PCB fraction surrogate recoveries within control limits. Internal standards recoveries were within QC limits.

- The semivolatile LCS exhibited recoveries less than 10% for 2,4-dimethylphenol. Non-detected reuslts were qualified rejected (UR).

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (aqueous)	Action Level (soil)
Acetone*	2 ug/L	20 ug/L	NA
Acetone	7 ug/kg	NA	70 ug/kg
Methylene Chloride*	8 ug/L	80 ug/L	80 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The action levels apply to the aqueous and soil environmental samples. It should be noted that field QC blanks do not receive qualification based on laboratory blank contamination.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone and methylene chloride in the soil and aqueous samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The soil LCS/LCSD recoveries were less than the lower QC limit for dichlorodifluoromethane. The non-detected result for this compound in soil sample FTA-SS-111 was qualified as biased low (UL).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

SEMIVOLATILE FRACTION

- The LCS exhibited recoveries less than the lower QC limits but greater than 10% for hexachlorocyclopentadiene and 3,3'-dichlorobenzidine. The associated non-detected results for these compounds were qualified biased low (UL).
- The internal standard compound perylene-d12 exhibited a recovery less than the QC limit of 50% for sample WOD-MW3. The non-detected results for the compounds quantified from this internal standard compound were qualified as estimated (UJ).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

NOTES

Bromomethane, chloroethane, trichlorofluoromethane, and MTBE, exhibited recoveries outside the QC limits for the aqueous MS/MSD sample in the volatile fraction. No action was taken on this data alone.

The aqueous LCS recoveries for 4-chloroaniline and N-nitrosodiphenylamine exceeded the upper QC limits for the semivolatile fraction. No action was taken because there were no positive results for these compounds.

Isophorone, 2,4-dimethylphenol, 4-chloroaniline, 4-nitroaniline, N-nitrosodiphenylamine, and 3,3-dichlorobenzidine, were outside the QC limits for the aqueous MS/MSD sample in the semivolatile fraction. No action was taken on this data alone. However, the 2,4-dimethylphenol and 3,3'-dichlorobenzidine recoveries were also low in the LCS which was used as the basis for qualifications.

No contaminants were detected in the laboratory blanks for the semivolatile or PCB fractions.

EXECUTIVE SUMMARY

Laboratory Performance: Two compounds were detected in the volatile method blank. Three compound recoveries were less than the QC limits for the semivolatile LCS. The laboratory used the PCB extract to analyze for semivolatile compounds for one sample. The acidic and basic target analytes were rejected and the neutral analytes were qualified as estimated.

Other Factors Affecting Data Quality: Two compounds were detected in the trip blank. One sample exhibited a low internal standard recovery.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12B			B0420-01A			B0420-04A			B0420-02A			B0420-03A		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture:	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethene	11	U		1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	11	U		1	U		1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	11	U		1	U		1	U		1	U		1	U	
1,2-Dibromoethane	11	U		1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethane	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	11	U		1	U		3			1	U		2		
1,2-Dichloroethene (trans)	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloropropane	11	U		1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	11	U		1	U		1	U		1	U		1	U	
1,3-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
2-Butanone	11	U		5	U		5	U		6			5	U	
2-Hexanone	11	U		5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	11	U		5	U		5	U		5	U		5	U	
Acetone	20	B	A	5	U		5	B	B	4	B	B	5	U	
Benzene	11	U		1	U		1	U		1	U		8		
Bromodichloromethane	11	U		1	U		1	U		1	U		1	U	
Bromoform	11	U		1	U		1	U		1	U		1	U	
Bromomethane	11	U		1	U		1	U		1	U		1	U	
Carbon Disulfide	11	U		1	U		1	U		1	U		1	U	
Carbon Tetrachloride	11	U		1	U		1	U		1	U		1	U	
Chlorobenzene	11	U		1	U		1	U		1	U		1	U	
Chloroethane	11	U		1	U		1	U		1	U		1	U	
Chloroform	11	U		1	U		1	U		1	U		1	U	
Chloromethane	11	U		1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	11	U		1	U		1	U		1	U		1	U	
Cyclohexane	11	U		1	U		1	U		1	U		1	U	
Dibromochloromethane	11	U		1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	11	UL	E	1	U		1	U		1	U		1	U	
Ethylbenzene	11	U		1	U		1	U		1	U		8		
Isopropylbenzene	11	U		1	U		1	U		1	U		1		
Methyl Acetate	11	U		1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	11	U		1	U		1	U		1	U		1	U	
Methylcyclohexane	11	U		1	U		1	U		1	U		1	U	
Methylene Chloride	20	B	A	2	U		2	B	A	2	U		2	U	
Styrene	11	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12B			B0420-01A			B0420-04A			B0420-02A			B0420-03A		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture:	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L			ug/L			ug/L		
Tetrachloroethene	11	U		1	U		1	U		1	U		1	U	
Toluene	11	U		1	U		1	U		2			1	U	
trans-1,3-Dichloropropene	11	U		1	U		1	U		1	U		1	U	
Trichloroethene	11	U		1	U		1	U		1	U		1	U	
Trichlorofluoromethane	11	U		1	U		1	U		1	U		1	U	
Vinyl Chloride	11	U		1	U		1	U		1	U		1	U	
m,p-xylene	11	U		1	U		1	U		1	U		1	U	
o-xylene	11	U		1	U		1	U		1	U		1	U	
Xylene (Total)	11	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW2S			TB-031203		
Laboratory ID:	B0420-05A			B0420-06A		
Sample Date:	03/12/03			03/12/03		
Duplicate:						
Percent Moisture:	NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U	
1,1-Dichloroethane	1	U		1	U	
1,1-Dichloroethene	1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U	
1,2-Dibromoethane	1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U	
1,2-Dichloroethane	1	U		1	U	
1,2-Dichloroethene (cis)	1			1	U	
1,2-Dichloroethene (trans)	1	U		1	U	
1,2-Dichloropropane	1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U	
2-Butanone	5	U		5	U	
2-Hexanone	5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U	
Acetone	4	B	B	2	J	P
Benzene	1	U		1	U	
Bromodichloromethane	1	U		1	U	
Bromoform	1	U		1	U	
Bromomethane	1	U		1	U	
Carbon Disulfide	1	U		1	U	
Carbon Tetrachloride	1	U		1	U	
Chlorobenzene	1	U		1	U	
Chloroethane	1	U		1	U	
Chloroform	1	U		1	U	
Chloromethane	1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U	
Cyclohexane	1	U		1	U	
Dibromochloromethane	1	U		1	U	
Dichlorodifluoromethane	1	U		1	U	
Ethylbenzene	1	U		1	U	
Isopropylbenzene	1	U		1	U	
Methyl Acetate	1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U	
Methylcyclohexane	1	U		1	U	
Methylene Chloride	2	U		8		
Styrene	1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF16-GW2S**			**TB-031203**		
Laboratory ID:	**B0420-05A**			**B0420-06A**		
Sample Date:	**03/12/03**			**03/12/03**		
Duplicate:						
Percent Moisture:	**NA**			**NA**		
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
VOLATILES	**ug/L**			**ug/L**		
Tetrachloroethene	1	U		1	U	
Toluene	1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U	
Trichloroethene	1	U		1	U	
Trichlorofluoromethane	1	U		1	U	
Vinyl Chloride	1	U		1	U	
m,p-xylene	1	U		1	U	
o-xylene	1	U		1	U	
Xylene (Total)	1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
NA -- Not applicable.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\OV_B0420.DBF data retrieved on: 05/09/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D			WOD-WFF16-GW2S		
Laboratory ID:	B0420-01E			B0420-04E			B0420-02E			B0420-03E			B0420-05E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U		5	UJ	Q	5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U		20	UR	Q	20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2,4-Dichlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2,4-Dimethylphenol	5	UR	E	5	UR	E	5	UR	E	5	UR	Q	5	UR	E
2,4-Dinitrophenol	20	U		20	U		20	U		20	UR	Q	20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U		5	UJ	Q	5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Chloronaphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Chlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2-Methylnaphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Methylphenol	5	U		5	U		5	U		5	UR	Q	5	U	
2-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
2-Nitrophenol	5	U		5	U		5	U		5	UR	Q	5	U	
3,3-Dichlorobenzidine	5	UL	E	5	UL	E	5	UL	E	5	UR	Q	5	UL	E
3-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U		20	UR	Q	20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U		5	UJ	Q	5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U		5	UR	Q	5	U	
4-Chloroaniline	5	U		5	U		5	U		5	UR	Q	5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U		5	UJ	Q	5	U	
4-Methylphenol	5	U		5	U		42			5	UR	Q	5	U	
4-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
4-Nitrophenol	20	U		20	U		20	U		20	UR	Q	20	U	
Acenaphthene	5	U		5	U		5	U		5	UJ	Q	1	J	P
Acenaphthylene	5	U		5	U		5	U		5	UJ	Q	5	U	
Anthracene	5	U		5	U		5	U		5	UJ	Q	5	U	
Benz(a)anthracene	5	U		5	U		5	U		5	UJ	Q	5	U	
Benzo(a)pyrene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(b)fluoranthene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(g,h,i)perylene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(k)fluoranthene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U		5	UJ	Q	5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U		5	UJ	Q	5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U		5	U		5	UJ	Q	2	J	P
Butylbenzylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Chrysene	5	U		5	U		5	U		5	UJ	Q	5	U	
Di-n-butylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Di-n-octylphthalate	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Dibenz(a,h)anthracene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Dibenzofuran	5	U		5	U		5	U		5	UJ	Q	5	U	
Diethylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Dimethylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Fluoranthene	5	U		5	U		5	U		5	UJ	Q	5	U	
Fluorene	5	U		2	J	P	5	U		5	UJ	Q	5	U	
Hexachlorobenzene	5	U		5	U		5	U		5	UJ	Q	5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D			WOD-WFF16-GW2S		
Laboratory ID:	B0420-01E			B0420-04E			B0420-02E			B0420-03E			B0420-05E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
Hexachlorobutadiene	5	U		5	U		5	U		5	UJ	Q	5	U	
Hexachlorocyclopentadiene	5	UL	E	5	UL	E	5	UL	E	5	UJ	Q	5	UL	E
Hexachloroethane	5	U		5	U		5	U		5	UJ	Q	5	U	
Indeno(1,2,3-cd)pyrene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Isophorone	5	U		5	U		5	U		5	UJ	Q	5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U		5	UR	Q	5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U		5	UR	Q	5	U	
Naphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
Nitrobenzene	5	U		5	U		5	U		5	UJ	Q	5	U	
Pentachlorophenol	20	U		20	U		20	U		20	UR	Q	20	U	
Phenanthrene	5	U		2	J	P	5	U		5	UJ	Q	5	U	
Phenol	5	U		5	U		5	U		5	UJ	Q	5	U	
Pyrene	5	U		5	U		5	U		5	UJ	Q	5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\OS_B0420.DBF data retrieved on: 05/13/03

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12A			B0420-01E			B0420-04E			B0420-02E			B0420-03E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/L			ug/L			ug/L			ug/L		
Aroclor-1016	36	U		1	U		1	U		1	U		1	U	
Aroclor-1221	36	U		1	U		1	U		1	U		1	U	
Aroclor-1232	36	U		1	U		1	U		1	U		1	U	
Aroclor-1242	36	U		1	U		1	U		1	U		1	U	
Aroclor-1248	36	U		1	U		1	U		1	U		1	U	
Aroclor-1254	36	U		1	U		1	U		1	U		1	U	
Aroclor-1260	36	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF16-GW2S**		
Laboratory ID:	**B0420-05E**		
Sample Date:	**03/12/03**		
Duplicate:			
Percent Moisture	**NA**		
	RESULT	**QUAL**	**CODE**
PCBS	**ug/L**		
Aroclor-1016	1	U	
Aroclor-1221	1	U	
Aroclor-1232	1	U	
Aroclor-1242	1	U	
Aroclor-1248	1	U	
Aroclor-1254	1	U	
Aroclor-1260	1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\PCB_B0420.DBF data retrieved on: 05/14/03

Qualifier Codes:

a = Lab Blank Contamination
b = Field Blank Contamination
c = Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d = MS/MSD Noncompliance
e = LSC/LSCD Noncompliance
f = Laboratory Duplicate Imprecision
g = Field Duplicate Imprecision
h = Holding Time Exceedance
i = ICP Serial Dilution Noncompliance
j = GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k = ICP Interference – include ICSAB %Rs
l = Instrument Calibration Range Exceedance
m = Sample Preservation
n = Internal Standard Noncompliance
o = Poor Instrument Performance (i.e. baseline drifting)
p = Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q = Other Problems (can encompass of number of issues)
r = Surrogates Recovery Noncompliance
s = Pesticide/PCB Resolution
t = % Breakdown Noncompliance for DDT and Endrin
u = Pesticide/PCB % Difference Between Columns for Positive Results
v = Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	6	
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	2	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	2	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	8	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	8	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WDD FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.21	33	J
2.		UNKNOWN	3.35	16	J
3.		UNKNOWN	5.63	13	J
4.		BRANCHED ALKANE	7.08	7	J
5.		UNKNOWN	8.60	11	J
6.	496-11-7	INDANE	12.76	11	NJ
7.	874-41-9	BENZENE, 1-ETHYL-2,4-DIMETHY	13.32	6	NJ
8.		UNKNOWN	14.27	16	J
9.		UNKNOWN	19.82	12	J
10.					
11.					
12.					
13.					
14.					
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17.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	3	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.20	26	J
2.		UNKNOWN	3.35	12	J
3.		UNKNOWN	5.63	21	J
4.		BRANCHED ALKANE	6.95	10	J
5.	496-11-7	INDANE	12.76	8	NJ
6.		UNKNOWN	18.90	14	J
7.					
8.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDO - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.22	29	J
2.		UNKNOWN	3.35	17	J
3.		BRANCHED ALKANE	6.96	11	J
4.		BRANCHED ALKANE	7.08	16	J
5.	564-04-5	3-PENTANONE, 2,2-DIMETHYL-	8.60	10	NJ
6.	5857-36-3	2,2,4-TRIMETHYL-3-PENTANONE	9.38	5	NJ
7.	496-11-7	INDANE	12.77	6	NJ
8.	2039-89-6	BENZENE, 2-ETHENYL-1,4-DIMET	14.28	10	NJ
9.		UNKNOWN	14.70	6	J
10.	17059-48-2	1H-INDENE, 2,3-DIHYDRO-1,6-D	14.80	6	NJ
11.	6682-71-9	1H-INDENE, 2,3-DIHYDRO-4,7-D	15.57	6	NJ
12.		UNKNOWN	15.93	13	J
13.		UNKNOWN	16.55	34	J
14.		UNKNOWN	17.13	12	J
15.		UNKNOWN	17.48	5	J
16.		UNKNOWN	17.61	23	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	20	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	8	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	42	
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FF15GW2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.02	9	J
2.	620-17-7	PHENOL, 3-ETHYL-	11.08	60	NJ
3.	501-52-0	BENZENEPROPANOIC ACID	13.13	11	NJ
4.		UNKNOWN	15.28	71	J
5.		UNKNOWN	19.38	26	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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16.					
17.					
18.					
19.					
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21.					
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27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WaD FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3321

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WQD- FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3321

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD- WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	2	J
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	2	J
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

WOD- WFF15GW1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.10	39	J
2.		UNKNOWN	10.70	10	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	1	J
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WDD-FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.36	23	J
2.		UNKNOWN	10.00	10	J
3.		UNKNOWN	10.21	85	J
4.		UNKNOWN	11.70	9	J
5.		UNKNOWN	12.31	8	J
6.		UNKNOWN	13.48	7	J
7.		UNKNOWN	14.30	4	J
8.		UNKNOWN	14.44	7	J
9.		UNKNOWN	15.82	7	J
10.		UNKNOWN	15.99	4	J
11.		UNKNOWN	16.33	4	J
12.		UNKNOWN	16.41	7	J
13.		UNKNOWN	16.99	7	J
14.		UNKNOWN	17.03	6	J
15.		UNKNOWN	17.55	7	J
16.					
17.					
18.					
19.					
20.					
21.					
22.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0107F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WDD - FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0108F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WQD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0109F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NOP - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0110F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WDD-FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0113F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1E0527F

% Moisture: 10 decanted: (Y/N) N Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/24/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

APPENDIX C

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0420
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl	TCL VOC, MTBE	40 ml VOA Vial HCl	TAL	Water Amber Glass	TCL SVOC	Litr Amber Glass	TCL PCB	500 ml Poly HNO3	TAL Metals	500 ml poly Unpres	Chloride, Sulfate, Nitrate	500 ml Poly HNO3	Filtered	Pesticide Metals	60z Amber Glass	TCL VOC + PCB	COMMENTS
WOD-MW3	3/12/03 0900		X	X			01		2	2	1	1	1	1												
WOD-WFF15-GW2	3/12/03 0950		X	X			02		2	2	1	1	1	1												
WOD-WFF16-GW2D	3/12/03 1135		X	X			03		2	2	1	1	1	1												
WOD-WFF15-GW1	3/12/03 1230		X	X			04		6	2	3	3	3	3												DO MS/MSD
WOD-WFF16-GW2S	3/12/03 1435		X	X			05		2	2	1	1	1	1												
TB-031203	3/12/03 0715		X	X			06		2																	
WOD-MW3F	3/12/03 0900		X	X			07																			
WOD-WFF15-GW2F	3/12/03 0950		X	X			08																			
WOD-WFF16-GW2DF	3/12/03 1135		X	X			09																			
WOD-WFF15-GW1F	3/12/03 1230		X	X			10																			DO MS/MSD
WOD-WFF16-GW2SF	3/12/03 1435		X	X			11																			
FTA-SS-111	3/12/03 1515		X		X		12																			

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		3/12/03 1700		3-13-03 0900	Laboratory supplied Trip Blank shipped via Federal Express Airbill NO 8286 9464 5110	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous samples that were collected on March 12, 2003, and received at Mitkem on March 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally high recovery of bromofluorobenzene in WFF15GW1MS and WFF15GW1MSD.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of dichlorodifluoromethane in both V5KLCS and V5KLCSDE. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike and high recovery of vinyl chloride, bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and N-nitrosodiphenylamine, low recovery of 2,4-dimethylphenol and 4-nitroaniline and no recovery of 3,3'-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: sample FF16GW2D was lost during sample prep. Due to insufficient sample volume, the sample could not be re-extracted. The PCB extract was analyzed to evaluate semivolatile compounds. Only raw data is submitted for sample FF16GW2D for the semivolatile analysis. Form Is, chromatogram and quant report for this sample is included following the SDG Narrative. The PCB sample was extracted at neutral pH and night not be amenable to acidic phenolic target analytes. No other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW1. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: manganese was outside of QC limits for the serial dilution. Form 1's are flagged with an "E" for manganese. No other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample FF16GW2 instead of sample WFF15GW1 due to insufficient sample volume. Spike recovery was within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: V5B0320A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4865

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		23	46*	58-131
Chloromethane	50		36	72	63-120
Vinyl Chloride	50		41	82	61-134
Bromomethane	50		48	96	10-215
Chloroethane	50		49	98	55-146
Trichlorofluoromethane	50		49	98	63-126
1,1-Dichloroethene	50		46	92	67-127
Acetone	50		50	100	0-154
Carbon Disulfide	50		43	86	63-126
Methylene Chloride	50		60	120	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		46	92	52-130
1,1-Dichloroethane	50		49	98	74-118
2-Butanone	50		44	88	14-154
cis-1,2-Dichloroethene	50		49	98	83-115
Chloroform	50		50	100	77-120
1,1,1-Trichloroethane	50		49	98	72-126
Carbon Tetrachloride	50		47	94	69-135
1,2-Dichloroethane	50		48	96	65-126
Benzene	50		49	98	78-121
Trichloroethene	50		49	98	75-125
1,2-Dichloropropane	50		50	100	78-117
Bromodichloromethane	50		48	96	75-118
cis-1,3-Dichloropropene	50		49	98	78-120
4-Methyl-2-pentanone	50		41	82	45-141
Toluene	50		50	100	80-126
trans-1,3-Dichloroprope	50		49	98	73-123
1,1,2-Trichloroethane	50		50	100	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000097

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	22	44*	4	40	58-131
Chloromethane	50	35	70	3	40	63-120
Vinyl Chloride	50	41	82	0	40	61-134
Bromomethane	50	48	96	0	40	10-215
Chloroethane	50	49	98	0	40	55-146
Trichlorofluoromethane	50	49	98	0	40	63-126
1,1-Dichloroethene	50	45	90	2	40	67-127
Acetone	50	47	94	6	40	0-154
Carbon Disulfide	50	43	86	0	40	63-126
Methylene Chloride	50	56	112	7	40	62-128
trans-1,2-Dichloroethen	50	48	96	0	40	76-120
Methyl tert-butyl ether	50	47	94	2	40	52-130
1,1-Dichloroethane	50	48	96	2	40	74-118
2-Butanone	50	42	84	5	40	14-154
cis-1,2-Dichloroethene	50	49	98	0	40	83-115
Chloroform	50	49	98	2	40	77-120
1,1,1-Trichloroethane	50	49	98	0	40	72-126
Carbon Tetrachloride	50	47	94	0	40	69-135
1,2-Dichloroethane	50	48	96	0	40	65-126
Benzene	50	49	98	0	40	78-121
Trichloroethene	50	48	96	2	40	75-125
1,2-Dichloropropane	50	50	100	0	40	78-117
Bromodichloromethane	50	49	98	2	40	75-118
cis-1,3-Dichloropropene	50	49	98	0	40	78-120
4-Methyl-2-pentanone	50	41	82	0	40	45-141
Toluene	50	50	100	0	40	80-126
trans-1,3-Dichloroprope	50	48	96	2	40	73-123
1,1,2-Trichloroethane	50	51	102	2	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000099

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50	0.0	56	112	48-135
Chloromethane	50	0.0	51	102	60-118
Vinyl Chloride	50	0.0	52	104	65-113
Bromomethane	50	0.0	89	178*	73-122
Chloroethane	50	0.0	81	162*	72-118
Trichlorofluoromethane	50	0.0	76	152*	68-129
1,1-Dichloroethene	50	0.0	53	106	67-121
Acetone	50	5	42	74	38-161
Carbon Disulfide	50	0.0	60	120	53-137
Methylene Chloride	50	2	64	124	59-132
trans-1,2-Dichloroethen	50	0.0	48	96	71-124
Methyl tert-butyl ether	50	0.0	31	62*	75-123
1,1-Dichloroethane	50	0.0	51	102	83-116
2-Butanone	50	0.0	35	70	64-139
cis-1,2-Dichloroethene	50	3	53	100	83-120
Chloroform	50	0.0	54	108	89-118
1,1,1-Trichloroethane	50	0.0	57	114	81-122
Carbon Tetrachloride	50	0.0	57	114	79-125
1,2-Dichloroethane	50	0.0	57	114	83-123
Benzene	50	0.0	50	100	81-120
Trichloroethene	50	0.0	50	100	77-121
1,2-Dichloropropane	50	0.0	51	102	81-116
Bromodichloromethane	50	0.0	54	108	90-114
cis-1,3-Dichloropropene	50	0.0	50	100	78-119
4-Methyl-2-pentanone	50	0.0	40	80	57-138
Toluene	50	0.0	50	100	81-121
trans-1,3-Dichloroprope	50	0.0	50	100	85-118
1,1,2-Trichloroethane	50	0.0	48	96	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	53	106	6	40	48-135
Chloromethane	50	55	110	8	40	60-118
Vinyl Chloride	50	58	116*	11	40	65-113
Bromomethane	50	86	172*	3	40	73-122
Chloroethane	50	73	146*	10	40	72-118
Trichlorofluoromethane	50	79	158*	4	40	68-129
1,1-Dichloroethene	50	54	108	2	40	67-121
Acetone	50	45	80	8	40	38-161
Carbon Disulfide	50	60	120	0	40	53-137
Methylene Chloride	50	62	120	3	40	59-132
trans-1,2-Dichloroethen	50	48	96	0	40	71-124
Methyl tert-butyl ether	50	32	64*	3	40	75-123
1,1-Dichloroethane	50	50	100	2	40	83-116
2-Butanone	50	35	70	0	40	64-139
cis-1,2-Dichloroethene	50	51	96	4	40	83-120
Chloroform	50	53	106	2	40	89-118
1,1,1-Trichloroethane	50	55	110	4	40	81-122
Carbon Tetrachloride	50	55	110	4	40	79-125
1,2-Dichloroethane	50	55	110	4	40	83-123
Benzene	50	49	98	2	40	81-120
Trichloroethene	50	49	98	2	40	77-121
1,2-Dichloropropane	50	50	100	2	40	81-116
Bromodichloromethane	50	53	106	2	40	90-114
cis-1,3-Dichloropropene	50	48	96	4	40	78-119
4-Methyl-2-pentanone	50	39	78	2	40	57-138
Toluene	50	49	98	2	40	81-121
trans-1,3-Dichloroprope	50	49	98	2	40	85-118
1,1,2-Trichloroethane	50	47	94	2	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000093

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		17	68	0-127
bis(2-Chloroethyl)Ether	25		18	72	46-109
2-Chlorophenol	25		17	68	22-117
2-Methylphenol	25		13	52	40-104
2,2'-oxybis(1-Chloropro	25		17	68	10-134
4-Methylphenol	25		16	64	35-106
N-Nitroso-di-n-prop.(1)	25		17	68	44-122
Hexachloroethane	25		14	56	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		27	108	48-118
2-Nitrophenol	25		19	76	29-122
2,4-Dimethylphenol	25		1	4*	14-109
2,4-Dichlorophenol	25		19	76	31-122
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		42	168*	0-152
bis(2-Chloroethoxy)meth	25		21	84	49-112
Hexachlorobutadiene	25		16	64	28-109
4-Chloro-3-Methylphenol	25		19	76	48-117
2-Methylnaphthalene	25		15	60	43-113
Hexachlorocyclopentadie	25		4	16*	34-103
2,4,6-Trichlorophenol	25		21	84	34-127
2,4,5-Trichlorophenol	25		22	88	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		23	92	53-124
Acenaphthylene	25		21	84	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		12	48	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000107

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		22	88	50-121
2,4-Dinitrophenol	25		16	64	0-144
4-Nitrophenol	25		21	84	0-160
Dibenzofuran	25		18	72	51-122
2,4-Dinitrotoluene	25		23	92	52-126
Diethylphthalate	25		24	96	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		25	100	52-125
4-Nitroaniline	25		13	52	47-117
4,6-Dinitro-2-methylphe	25		19	76	3-151
N-Nitrosodiphenylamine	25		45	180*	50-150
4-Bromophenyl-phenyleth	25		25	100	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		18	72	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		26	104	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		23	92	53-131
Butylbenzylphthalate	25		23	92	54-128
3,3'-Dichlorobenzidine	25		4	16*	41-117
Benzo(a)anthracene	25		23	92	56-124
Chrysene	25		23	92	53-123
bis(2-Ethylhexyl)phthal	25		24	96	56-127
Di-n-octylphthalate	25		23	92	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000108

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Lab File ID (Standard): S2D3239 Date Analyzed: 04/17/03

Instrument ID: S2 Time Analyzed: 2059

	IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
12 HOUR STD	420892	18.22	340386	23.67	237852	27.02
UPPER LIMIT	841784	18.72	680772	24.17	475704	27.52
LOWER LIMIT	210446	17.72	170193	23.17	118926	26.52
EPA SAMPLE NO.						
01 WOD-MW3	244620	18.21	182997	23.65	118462*	26.99
02 FF15GW2	303300	18.22	238581	23.64	161645	26.99
03 WFF15GW1	248717	18.22	195191	23.64	128445	26.99
04 WFF15GW1MS	255177	18.22	203805	23.66	132222	26.99
05 WFF15GW1MSD	241529	18.22	194656	23.65	129621	27.00
06 FF16GW2S	228269	18.21	191263	23.65	128453	26.99
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	25	0.0	21	84	0-127
bis(2-Chloroethyl)Ether	25	0.0	20	80	46-109
2-Chlorophenol	25	0.0	19	76	22-117
2-Methylphenol	25	0.0	15	60	40-104
2,2'-oxybis(1-Chloropro	25	0.0	21	84	10-134
4-Methylphenol	25	0.0	17	68	35-106
N-Nitroso-di-n-prop.(1)	25	0.0	14	56	44-122
Hexachloroethane	25	0.0	19	76	24-104
Nitrobenzene	25	0.0	21	84	47-112
Isophorone	25	0.0	31	124*	48-118
2-Nitrophenol	25	0.0	20	80	29-122
2,4-Dimethylphenol	25	0.0	2	8*	14-109
2,4-Dichlorophenol	25	0.0	20	80	31-122
Naphthalene	25	0.0	20	80	38-117
4-Chloroaniline	25	0.0	40	160*	0-152
bis(2-Chloroethoxy)meth	25	0.0	23	92	49-112
Hexachlorobutadiene	25	0.0	17	68	28-109
4-Chloro-3-Methylphenol	25	0.0	21	84	48-117
2-Methylnaphthalene	25	0.0	16	64	43-113
Hexachlorocyclopentadie	25	0.0	9	36	34-103
2,4,6-Trichlorophenol	25	0.0	21	84	34-127
2,4,5-Trichlorophenol	25	0.0	22	88	32-131
2-Chloronaphthalene	25	0.0	21	84	47-116
2-Nitroaniline	25	0.0	17	68	51-120
Dimethylphthalate	25	0.0	23	92	53-124
Acenaphthylene	25	0.0	20	80	50-119
2,6-Dinitrotoluene	25	0.0	22	88	52-122
3-Nitroaniline	25	0.0	12	48	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000101

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	25	0.0	22	88	50-121
2,4-Dinitrophenol	25	0.0	21	84	0-144
4-Nitrophenol	25	0.0	22	88	0-160
Dibenzofuran	25	0.0	18	72	51-122
2,4-Dinitrotoluene	25	0.0	22	88	52-126
Diethylphthalate	25	0.0	24	96	53-126
4-Chlorophenyl-phenylet	25	0.0	23	92	50-124
Fluorene	25	2	24	88	52-125
4-Nitroaniline	25	0.0	10	40*	47-117
4,6-Dinitro-2-methylphe	25	0.0	22	88	3-151
N-Nitrosodiphenylamine	25	0.0	38	152*	50-150
4-Bromophenyl-phenyleth	25	0.0	23	92	51-124
Hexachlorobenzene	25	0.0	23	92	52-124
Pentachlorophenol	25	0.0	24	96	5-125
Phenanthrene	25	2	26	96	52-128
Anthracene	25	0.0	21	84	52-127
Di-n-butylphthalate	25	0.0	25	100	56-132
Fluoranthene	25	0.0	24	96	53-130
Pyrene	25	0.0	25	100	53-131
Butylbenzylphthalate	25	0.0	24	96	54-128
3,3'-Dichlorobenzidine	25	0.0	0.0	0*	41-117
Benzo(a)anthracene	25	0.0	24	96	56-124
Chrysene	25	0.0	23	92	53-123
bis(2-Ethylhexyl)phthal	25	0.0	23	92	56-127
Di-n-octylphthalate	25	0.0	22	88	59-138
Benzo(b)fluoranthene	25	0.0	24	96	58-126
Benzo(k)fluoranthene	25	0.0	24	96	60-124
Benzo(a)pyrene	25	0.0	18	72	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000102

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	21	84	0	40	0-127
bis(2-Chloroethyl)Ether	25	19	76	5	40	46-109
2-Chlorophenol	25	19	76	0	40	22-117
2-Methylphenol	25	15	60	0	40	40-104
2,2'-oxybis(1-Chloropro	25	19	76	10	40	10-134
4-Methylphenol	25	18	72	6	40	35-106
N-Nitroso-di-n-prop.(1)	25	19	76	30	40	44-122
Hexachloroethane	25	18	72	5	40	24-104
Nitrobenzene	25	20	80	5	40	47-112
Isophorone	25	31	124*	0	40	48-118
2-Nitrophenol	25	20	80	0	40	29-122
2,4-Dimethylphenol	25	2	8*	0	40	14-109
2,4-Dichlorophenol	25	21	84	5	40	31-122
Naphthalene	25	19	76	5	40	38-117
4-Chloroaniline	25	45	180*	12	40	0-152
bis(2-Chloroethoxy)meth	25	22	88	4	40	49-112
Hexachlorobutadiene	25	16	64	6	40	28-109
4-Chloro-3-Methylphenol	25	21	84	0	40	48-117
2-Methylnaphthalene	25	16	64	0	40	43-113
Hexachlorocyclopentadie	25	12	48	28	40	34-103
2,4,6-Trichlorophenol	25	21	84	0	40	34-127
2,4,5-Trichlorophenol	25	22	88	0	40	32-131
2-Chloronaphthalene	25	21	84	0	40	47-116
2-Nitroaniline	25	17	68	0	40	51-120
Dimethylphthalate	25	23	92	0	40	53-124
Acenaphthylene	25	20	80	0	40	50-119
2,6-Dinitrotoluene	25	22	88	0	40	52-122
3-Nitroaniline	25	12	48	0	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000104

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	22	88	0	40	50-121
2,4-Dinitrophenol	25	22	88	5	40	0-144
4-Nitrophenol	25	21	84	5	40	0-160
Dibenzofuran	25	18	72	0	40	51-122
2,4-Dinitrotoluene	25	23	92	4	40	52-126
Diethylphthalate	25	23	92	4	40	53-126
4-Chlorophenyl-phenylet	25	23	92	0	40	50-124
Fluorene	25	24	88	0	40	52-125
4-Nitroaniline	25	11	44*	10	40	47-117
4,6-Dinitro-2-methylphe	25	23	92	4	40	3-151
N-Nitrosodiphenylamine	25	40	160*	5	40	50-150
4-Bromophenyl-phenyleth	25	24	96	4	40	51-124
Hexachlorobenzene	25	24	96	4	40	52-124
Pentachlorophenol	25	24	96	0	40	5-125
Phenanthrene	25	26	96	0	40	52-128
Anthracene	25	22	88	5	40	52-127
Di-n-butylphthalate	25	25	100	0	40	56-132
Fluoranthene	25	24	96	0	40	53-130
Pyrene	25	24	96	4	40	53-131
Butylbenzylphthalate	25	24	96	0	40	54-128
3,3'-Dichlorobenzidine	25	0.0	0*		40	41-117
Benzo(a)anthracene	25	24	96	0	40	56-124
Chrysene	25	25	100	8	40	53-123
bis(2-Ethylhexyl)phthal	25	24	96	4	40	56-127
Di-n-octylphthalate	25	23	92	4	40	59-138
Benzo(b)fluoranthene	25	25	100	4	40	58-126
Benzo(k)fluoranthene	25	24	96	0	40	60-124
Benzo(a)pyrene	25	20	80	10	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000105

TETRA TECH NUS

PHIL-17141

TO: G. GLENN **DATE:** MAY 14, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
FIRE TRAINING AREA/WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0420

SAMPLES: **1/Soil/**

FTA-SS-111

6/Aqueous/

WOD-MW3	WOD-WFF15-GW1
WOD-WFF15-GW2	WOD-WFF16-GW2S
WOD-WFF16-GW2D	TB-031203

OVERVIEW

The sample set for the Fire Training Area and Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0420, consists of one soil environmental sample (designated FTA-), five aqueous environmental samples (designated WOD-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles, the aqueous environmental samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). The soil sample was analyzed for TCL volatiles and PCBs. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 12, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MAJOR PROBLEMS

- Due to limited sample volume for sample WOD-WFF16-GW2D, the PCB extract was analyzed to evaluate the semivolatile compounds. The sample was extracted at a neutral pH, therefore, the

non-detected results for acidic phenolic target analytes and basic anilines and amine-substituted analytes were rejected (UR). The neutral analytes were qualified as estimated (UJ). No semivolatile surrogate standards were present in the extract, but the GC analysis that was also performed on the same extract revealed PCB fraction surrogate recoveries within control limits. Internal standards recoveries were within QC limits.

- The semivolatile LCS exhibited recoveries less than 10% for 2,4-dimethylphenol. Non-detected reuslts were qualified rejected (UR).

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (aqueous)	Action Level (soil)
Acetone*	2 ug/L	20 ug/L	NA
Acetone	7 ug/kg	NA	70 ug/kg
Methylene Chloride*	8 ug/L	80 ug/L	80 ug/kg

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The action levels apply to the aqueous and soil environmental samples. It should be noted that field QC blanks do not receive qualification based on laboratory blank contamination.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone and methylene chloride in the soil and aqueous samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The soil LCS/LCSD recoveries were less than the lower QC limit for dichlorodifluoromethane. The non-detected result for this compound in soil sample FTA-SS-111 was qualified as biased low (UL).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

SEMIVOLATILE FRACTION

- The LCS exhibited recoveries less than the lower QC limits but greater than 10% for hexachlorocyclopentadiene and 3,3'-dichlorobenzidine. The associated non-detected results for these compounds were qualified biased low (UL).
- The internal standard compound perylene-d12 exhibited a recovery less than the QC limit of 50% for sample WOD-MW3. The non-detected results for the compounds quantified from this internal standard compound were qualified as estimated (UJ).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

NOTES

Bromomethane, chloroethane, trichlorofluoromethane, and MTBE, exhibited recoveries outside the QC limits for the aqueous MS/MSD sample in the volatile fraction. No action was taken on this data alone.

The aqueous LCS recoveries for 4-chloroaniline and N-nitrosodiphenylamine exceeded the upper QC limits for the semivolatile fraction. No action was taken because there were no positive results for these compounds.

Isophorone, 2,4-dimethylphenol, 4-chloroaniline, 4-nitroaniline, N-nitrosodiphenylamine, and 3,3-dichlorobenzidine, were outside the QC limits for the aqueous MS/MSD sample in the semivolatile fraction. No action was taken on this data alone. However, the 2,4-dimethylphenol and 3,3'-dichlorobenzidine recoveries were also low in the LCS which was used as the basis for qualifications.

No contaminants were detected in the laboratory blanks for the semivolatile or PCB fractions.

EXECUTIVE SUMMARY

Laboratory Performance: Two compounds were detected in the volatile method blank. Three compound recoveries were less than the QC limits for the semivolatile LCS. The laboratory used the PCB extract to analyze for semivolatile compounds for one sample. The acidic and basic target analytes were rejected and the neutral analytes were qualified as estimated.

Other Factors Affecting Data Quality: Two compounds were detected in the trip blank. One sample exhibited a low internal standard recovery.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12B			B0420-01A			B0420-04A			B0420-02A			B0420-03A		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture:	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	11	U		1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethane	11	U		1	U		1	U		1	U		1	U	
1,1-Dichloroethene	11	U		1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	11	U		1	U		1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	11	U		1	U		1	U		1	U		1	U	
1,2-Dibromoethane	11	U		1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethane	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	11	U		1	U		3			1	U		2		
1,2-Dichloroethene (trans)	11	U		1	U		1	U		1	U		1	U	
1,2-Dichloropropane	11	U		1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	11	U		1	U		1	U		1	U		1	U	
1,3-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	11	U		1	U		1	U		1	U		1	U	
2-Butanone	11	U		5	U		5	U		6			5	U	
2-Hexanone	11	U		5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	11	U		5	U		5	U		5	U		5	U	
Acetone	20	B	A	5	U		5	B	B	4	B	B	5	U	
Benzene	11	U		1	U		1	U		1	U		8		
Bromodichloromethane	11	U		1	U		1	U		1	U		1	U	
Bromoform	11	U		1	U		1	U		1	U		1	U	
Bromomethane	11	U		1	U		1	U		1	U		1	U	
Carbon Disulfide	11	U		1	U		1	U		1	U		1	U	
Carbon Tetrachloride	11	U		1	U		1	U		1	U		1	U	
Chlorobenzene	11	U		1	U		1	U		1	U		1	U	
Chloroethane	11	U		1	U		1	U		1	U		1	U	
Chloroform	11	U		1	U		1	U		1	U		1	U	
Chloromethane	11	U		1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	11	U		1	U		1	U		1	U		1	U	
Cyclohexane	11	U		1	U		1	U		1	U		1	U	
Dibromochloromethane	11	U		1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	11	UL	E	1	U		1	U		1	U		1	U	
Ethylbenzene	11	U		1	U		1	U		1	U		8		
Isopropylbenzene	11	U		1	U		1	U		1	U		1		
Methyl Acetate	11	U		1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	11	U		1	U		1	U		1	U		1	U	
Methylcyclohexane	11	U		1	U		1	U		1	U		1	U	
Methylene Chloride	20	B	A	2	U		2	B	A	2	U		2	U	
Styrene	11	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12B			B0420-01A			B0420-04A			B0420-02A			B0420-03A		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture:	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/kg			ug/L			ug/L			ug/L			ug/L		
Tetrachloroethene	11	U		1	U		1	U		1	U		1	U	
Toluene	11	U		1	U		1	U		2			1	U	
trans-1,3-Dichloropropene	11	U		1	U		1	U		1	U		1	U	
Trichloroethene	11	U		1	U		1	U		1	U		1	U	
Trichlorofluoromethane	11	U		1	U		1	U		1	U		1	U	
Vinyl Chloride	11	U		1	U		1	U		1	U		1	U	
m,p-xylene	11	U		1	U		1	U		1	U		1	U	
o-xylene	11	U		1	U		1	U		1	U		1	U	
Xylene (Total)	11	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW2S			TB-031203		
Laboratory ID:	B0420-05A			B0420-06A		
Sample Date:	03/12/03			03/12/03		
Duplicate:						
Percent Moisture:	NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U	
1,1-Dichloroethane	1	U		1	U	
1,1-Dichloroethene	1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U	
1,2-Dibromoethane	1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U	
1,2-Dichloroethane	1	U		1	U	
1,2-Dichloroethene (cis)	1			1	U	
1,2-Dichloroethene (trans)	1	U		1	U	
1,2-Dichloropropane	1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U	
2-Butanone	5	U		5	U	
2-Hexanone	5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U	
Acetone	4	B	B	2	J	P
Benzene	1	U		1	U	
Bromodichloromethane	1	U		1	U	
Bromoform	1	U		1	U	
Bromomethane	1	U		1	U	
Carbon Disulfide	1	U		1	U	
Carbon Tetrachloride	1	U		1	U	
Chlorobenzene	1	U		1	U	
Chloroethane	1	U		1	U	
Chloroform	1	U		1	U	
Chloromethane	1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U	
Cyclohexane	1	U		1	U	
Dibromochloromethane	1	U		1	U	
Dichlorodifluoromethane	1	U		1	U	
Ethylbenzene	1	U		1	U	
Isopropylbenzene	1	U		1	U	
Methyl Acetate	1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U	
Methylcyclohexane	1	U		1	U	
Methylene Chloride	2	U		8		
Styrene	1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF16-GW2S**			**TB-031203**		
Laboratory ID:	**B0420-05A**			**B0420-06A**		
Sample Date:	**03/12/03**			**03/12/03**		
Duplicate:						
Percent Moisture:	**NA**			**NA**		
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
VOLATILES	**ug/L**			**ug/L**		
Tetrachloroethene	1	U		1	U	
Toluene	1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U	
Trichloroethene	1	U		1	U	
Trichlorofluoromethane	1	U		1	U	
Vinyl Chloride	1	U		1	U	
m,p-xylene	1	U		1	U	
o-xylene	1	U		1	U	
Xylene (Total)	1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
NA -- Not applicable.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\OV_B0420.DBF data retrieved on: 05/09/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D			WOD-WFF16-GW2S		
Laboratory ID:	B0420-01E			B0420-04E			B0420-02E			B0420-03E			B0420-05E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U		5	UJ	Q	5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U		20	UR	Q	20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2,4-Dichlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2,4-Dimethylphenol	5	UR	E	5	UR	E	5	UR	E	5	UR	Q	5	UR	E
2,4-Dinitrophenol	20	U		20	U		20	U		20	UR	Q	20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U		5	UJ	Q	5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Chloronaphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Chlorophenol	5	U		5	U		5	U		5	UR	Q	5	U	
2-Methylnaphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
2-Methylphenol	5	U		5	U		5	U		5	UR	Q	5	U	
2-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
2-Nitrophenol	5	U		5	U		5	U		5	UR	Q	5	U	
3,3-Dichlorobenzidine	5	UL	E	5	UL	E	5	UL	E	5	UR	Q	5	UL	E
3-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U		20	UR	Q	20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U		5	UJ	Q	5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U		5	UR	Q	5	U	
4-Chloroaniline	5	U		5	U		5	U		5	UR	Q	5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U		5	UJ	Q	5	U	
4-Methylphenol	5	U		5	U		42			5	UR	Q	5	U	
4-Nitroaniline	20	U		20	U		20	U		20	UR	Q	20	U	
4-Nitrophenol	20	U		20	U		20	U		20	UR	Q	20	U	
Acenaphthene	5	U		5	U		5	U		5	UJ	Q	1	J	P
Acenaphthylene	5	U		5	U		5	U		5	UJ	Q	5	U	
Anthracene	5	U		5	U		5	U		5	UJ	Q	5	U	
Benz(a)anthracene	5	U		5	U		5	U		5	UJ	Q	5	U	
Benzo(a)pyrene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(b)fluoranthene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(g,h,i)perylene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Benzo(k)fluoranthene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U		5	UJ	Q	5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U		5	UJ	Q	5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U		5	U		5	UJ	Q	2	J	P
Butylbenzylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Chrysene	5	U		5	U		5	U		5	UJ	Q	5	U	
Di-n-butylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Di-n-octylphthalate	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Dibenz(a,h)anthracene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Dibenzofuran	5	U		5	U		5	U		5	UJ	Q	5	U	
Diethylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Dimethylphthalate	5	U		5	U		5	U		5	UJ	Q	5	U	
Fluoranthene	5	U		5	U		5	U		5	UJ	Q	5	U	
Fluorene	5	U		2	J	P	5	U		5	UJ	Q	5	U	
Hexachlorobenzene	5	U		5	U		5	U		5	UJ	Q	5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D			WOD-WFF16-GW2S		
Laboratory ID:	B0420-01E			B0420-04E			B0420-02E			B0420-03E			B0420-05E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L			ug/L		
Hexachlorobutadiene	5	U		5	U		5	U		5	UJ	Q	5	U	
Hexachlorocyclopentadiene	5	UL	E	5	UL	E	5	UL	E	5	UJ	Q	5	UL	E
Hexachloroethane	5	U		5	U		5	U		5	UJ	Q	5	U	
Indeno(1,2,3-cd)pyrene	5	UJ	N	5	U		5	U		5	UJ	Q	5	U	
Isophorone	5	U		5	U		5	U		5	UJ	Q	5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U		5	UR	Q	5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U		5	UR	Q	5	U	
Naphthalene	5	U		5	U		5	U		5	UJ	Q	5	U	
Nitrobenzene	5	U		5	U		5	U		5	UJ	Q	5	U	
Pentachlorophenol	20	U		20	U		20	U		20	UR	Q	20	U	
Phenanthrene	5	U		2	J	P	5	U		5	UJ	Q	5	U	
Phenol	5	U		5	U		5	U		5	UJ	Q	5	U	
Pyrene	5	U		5	U		5	U		5	UJ	Q	5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\OS_B0420.DBF data retrieved on: 05/13/03

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-111			WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D		
Laboratory ID:	B0420-12A			B0420-01E			B0420-04E			B0420-02E			B0420-03E		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
Percent Moisture	10.0			NA			NA			NA			NA		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/kg			ug/L			ug/L			ug/L			ug/L		
Aroclor-1016	36	U		1	U		1	U		1	U		1	U	
Aroclor-1221	36	U		1	U		1	U		1	U		1	U	
Aroclor-1232	36	U		1	U		1	U		1	U		1	U	
Aroclor-1242	36	U		1	U		1	U		1	U		1	U	
Aroclor-1248	36	U		1	U		1	U		1	U		1	U	
Aroclor-1254	36	U		1	U		1	U		1	U		1	U	
Aroclor-1260	36	U		1	U		1	U		1	U		1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF16-GW2S**		
Laboratory ID:	**B0420-05E**		
Sample Date:	**03/12/03**		
Duplicate:			
Percent Moisture	**NA**		
	RESULT	**QUAL**	**CODE**
PCBS	**ug/L**		
Aroclor-1016	1	U	
Aroclor-1221	1	U	
Aroclor-1232	1	U	
Aroclor-1242	1	U	
Aroclor-1248	1	U	
Aroclor-1254	1	U	
Aroclor-1260	1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0420 - AQUEOUS AND SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\PCB_B0420.DBF data retrieved on: 05/14/03

Qualifier Codes:

a = Lab Blank Contamination
b = Field Blank Contamination
c = Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d = MS/MSD Noncompliance
e = LSC/LSCD Noncompliance
f = Laboratory Duplicate Imprecision
g = Field Duplicate Imprecision
h = Holding Time Exceedance
i = ICP Serial Dilution Noncompliance
j = GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k = ICP Interference – include ICSAB %Rs
l = Instrument Calibration Range Exceedance
m = Sample Preservation
n = Internal Standard Noncompliance
o = Poor Instrument Performance (i.e. baseline drifting)
p = Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q = Other Problems (can encompass of number of issues)
r = Surrogates Recovery Noncompliance
s = Pesticide/PCB Resolution
t = % Breakdown Noncompliance for DDT and Endrin
u = Pesticide/PCB % Difference Between Columns for Positive Results
v = Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2899

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	6	
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	2	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD- FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2900

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	2	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	8	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	8	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WDD FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2901

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 9 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.21	33	J
2.		UNKNOWN	3.35	16	J
3.		UNKNOWN	5.63	13	J
4.		BRANCHED ALKANE	7.08	7	J
5.		UNKNOWN	8.60	11	J
6.	496-11-7	INDANE	12.76	11	NJ
7.	874-41-9	BENZENE, 1-ETHYL-2,4-DIMETHY	13.32	6	NJ
8.		UNKNOWN	14.27	16	J
9.		UNKNOWN	19.82	12	J
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
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20.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	3	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2902

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.20	26	J
2.		UNKNOWN	3.35	12	J
3.		UNKNOWN	5.63	21	J
4.		BRANCHED ALKANE	6.95	10	J
5.	496-11-7	INDANE	12.76	8	NJ
6.		UNKNOWN	18.90	14	J
7.					
8.					
9.					
10.					
11.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDO - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2905

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 16 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		BRANCHED ALKANE	2.22	29	J
2.		UNKNOWN	3.35	17	J
3.		BRANCHED ALKANE	6.96	11	J
4.		BRANCHED ALKANE	7.08	16	J
5.	564-04-5	3-PENTANONE, 2,2-DIMETHYL-	8.60	10	NJ
6.	5857-36-3	2,2,4-TRIMETHYL-3-PENTANONE	9.38	5	NJ
7.	496-11-7	INDANE	12.77	6	NJ
8.	2039-89-6	BENZENE, 2-ETHENYL-1,4-DIMET	14.28	10	NJ
9.		UNKNOWN	14.70	6	J
10.	17059-48-2	1H-INDENE, 2,3-DIHYDRO-1,6-D	14.80	6	NJ
11.	6682-71-9	1H-INDENE, 2,3-DIHYDRO-4,7-D	15.57	6	NJ
12.		UNKNOWN	15.93	13	J
13.		UNKNOWN	16.55	34	J
14.		UNKNOWN	17.13	12	J
15.		UNKNOWN	17.48	5	J
16.		UNKNOWN	17.61	23	J
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
67-64-1	Acetone	20	B
75-15-0	Carbon Disulfide	11	U
75-09-2	Methylene Chloride	20	B
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
78-93-3	2-Butanone	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
107-06-2	1,2-Dichloroethane	11	U
71-43-2	Benzene	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	11	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-Hexanone	11	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
----------	m,p-Xylene	11	U
95-47-6	o-Xylene	11	U
1330-20-7	Xylene (Total)	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropylbenzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-67-8	1,3,5-Trimethylbenzene	11	U
95-63-6	1,2,4-Trimethylbenzene	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	11	U
79-20-9	Methyl Acetate	11	U
110-81-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12B

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4868

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. 10 Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(mL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/Kg

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	8	
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031203

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V1F2906

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: not dec. _____ Date Analyzed: 03/21/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3241

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/17/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	42	
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

FF15GW2

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3242

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.02	9	J
2.	620-17-7	PHENOL, 3-ETHYL-	11.08	60	NJ
3.	501-52-0	BENZENEPROPANOIC ACID	13.13	11	NJ
4.		UNKNOWN	15.28	71	J
5.		UNKNOWN	19.38	26	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
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16.					
17.					
18.					
19.					
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21.					
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27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WaD FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3321

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WQD- FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3321

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/20/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD- WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD- WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	2	J
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	2	J
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

WOD- WFF15GW1

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3243

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	10.10	39	J
2.		UNKNOWN	10.70	10	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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29.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	1	J
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WDD - FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	2	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WDD-FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3246

Level: (low/med) LOW Date Received: 03/13/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.36	23	J
2.		UNKNOWN	10.00	10	J
3.		UNKNOWN	10.21	85	J
4.		UNKNOWN	11.70	9	J
5.		UNKNOWN	12.31	8	J
6.		UNKNOWN	13.48	7	J
7.		UNKNOWN	14.30	4	J
8.		UNKNOWN	14.44	7	J
9.		UNKNOWN	15.82	7	J
10.		UNKNOWN	15.99	4	J
11.		UNKNOWN	16.33	4	J
12.		UNKNOWN	16.41	7	J
13.		UNKNOWN	16.99	7	J
14.		UNKNOWN	17.03	6	J
15.		UNKNOWN	17.55	7	J
16.					
17.					
18.					
19.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-MW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-01E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0107F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WDD - FF15GW2

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0108F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WQD - FF16GW2D

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0109F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

NOP - WFF15GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0110F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted: 03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WDD-FF16GW2S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) WATER Lab Sample ID: B0420-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0113F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FTA-SS-111

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: B0420-12A

Sample wt/vol: 30.5 (g/mL) G Lab File ID: E1E0527F

% Moisture: 10 decanted: (Y/N) N Date Received: 03/13/03

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 03/24/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/10/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
12674-11-2	Aroclor-1016	36	U
11104-28-2	Aroclor-1221	36	U
11141-16-5	Aroclor-1232	36	U
53469-21-9	Aroclor-1242	36	U
12672-29-6	Aroclor-1248	36	U
11097-69-1	Aroclor-1254	36	U
11096-82-5	Aroclor-1260	36	U

APPENDIX C

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0420
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl	TCL VOC, MTBE	40 ml VOA Vial HCl	TAL	Water Amber Glass	TCL SVOC	Litr Amber Glass	TCL PCB	500 ml Poly HNO3	TAL Metals	500 ml poly Unpres	Chloride, Sulfate, Nitrate	500 ml Poly HNO3	Filtered	Pesticide Metals	60z Amber Glass	TCL VOC + PCB	COMMENTS
WOD-MW3	3/12/03 0900		X	X			01		2	2	1	1	1	1												
WOD-WFF15-GW2	3/12/03 0950		X	X			02		2	2	1	1	1	1												
WOD-WFF16-GW2D	3/12/03 1135		X	X			03		2	2	1	1	1	1												
WOD-WFF15-GW1	3/12/03 1230		X	X			04		6	2	3	3	3	3												DO MS/MSD
WOD-WFF16-GW2S	3/12/03 1435		X	X			05		2	2	1	1	1	1												
TB-031203	3/12/03 0715		X	X			06		2																	
WOD-MW3F	3/12/03 0900		X	X			07																			
WOD-WFF15-GW2F	3/12/03 0950		X	X			08																			
WOD-WFF16-GW2DF	3/12/03 1135		X	X			09																			
WOD-WFF15-GW1F	3/12/03 1230		X	X			10																			DO MS/MSD
WOD-WFF16-GW2SF	3/12/03 1435		X	X			11																			
FTA-SS-111	3/12/03 1515		X		X		12																			

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		3/12/03 1700		3-13-03 0900	Laboratory supplied Trip Blank shipped via Federal Express Airbill NO 8286 9464 5110	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous samples that were collected on March 12, 2003, and received at Mitkem on March 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally high recovery of bromofluorobenzene in WFF15GW1MS and WFF15GW1MSD.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of dichlorodifluoromethane in both V5KLCS and V5KLCSDE. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike and high recovery of vinyl chloride, bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and N-nitrosodiphenylamine, low recovery of 2,4-dimethylphenol and 4-nitroaniline and no recovery of 3,3'-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: sample FF16GW2D was lost during sample prep. Due to insufficient sample volume, the sample could not be re-extracted. The PCB extract was analyzed to evaluate semivolatile compounds. Only raw data is submitted for sample FF16GW2D for the semivolatile analysis. Form Is, chromatogram and quant report for this sample is included following the SDG Narrative. The PCB sample was extracted at neutral pH and night not be amenable to acidic phenolic target analytes. No other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW1. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: manganese was outside of QC limits for the serial dilution. Form 1's are flagged with an "E" for manganese. No other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample FF16GW2 instead of sample WFF15GW1 due to insufficient sample volume. Spike recovery was within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix: (soil/water) SOIL Lab Sample ID: V5B0320A

Sample wt/vol: 5.0 (g/mL) G Lab File ID: V5E4865

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/20/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(mL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	10	U
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-69-4	Trichlorofluoromethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	7	J
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	2	J
156-60-5	trans-1,2-Dichloroethene	10	U
1634-04-4	Methyl tert-butyl ether	10	U
75-34-3	1,1-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	10	U
67-66-3	Chloroform	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
107-06-2	1,2-Dichloroethane	10	U
71-43-2	Benzene	10	U
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
108-10-1	4-Methyl-2-pentanone	10	U
108-88-3	Toluene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
124-48-1	Dibromochloromethane	10	U
106-93-4	1,2-Dibromoethane	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		23	46*	58-131
Chloromethane	50		36	72	63-120
Vinyl Chloride	50		41	82	61-134
Bromomethane	50		48	96	10-215
Chloroethane	50		49	98	55-146
Trichlorofluoromethane	50		49	98	63-126
1,1-Dichloroethene	50		46	92	67-127
Acetone	50		50	100	0-154
Carbon Disulfide	50		43	86	63-126
Methylene Chloride	50		60	120	62-128
trans-1,2-Dichloroethen	50		48	96	76-120
Methyl tert-butyl ether	50		46	92	52-130
1,1-Dichloroethane	50		49	98	74-118
2-Butanone	50		44	88	14-154
cis-1,2-Dichloroethene	50		49	98	83-115
Chloroform	50		50	100	77-120
1,1,1-Trichloroethane	50		49	98	72-126
Carbon Tetrachloride	50		47	94	69-135
1,2-Dichloroethane	50		48	96	65-126
Benzene	50		49	98	78-121
Trichloroethene	50		49	98	75-125
1,2-Dichloropropane	50		50	100	78-117
Bromodichloromethane	50		48	96	75-118
cis-1,3-Dichloropropene	50		49	98	78-120
4-Methyl-2-pentanone	50		41	82	45-141
Toluene	50		50	100	80-126
trans-1,3-Dichloroprope	50		49	98	73-123
1,1,2-Trichloroethane	50		50	100	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000097

FORM 3
SOIL VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: V5KLCS Level: (low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	LCSD CONCENTRATION (ug/Kg)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	22	44*	4	40	58-131
Chloromethane	50	35	70	3	40	63-120
Vinyl Chloride	50	41	82	0	40	61-134
Bromomethane	50	48	96	0	40	10-215
Chloroethane	50	49	98	0	40	55-146
Trichlorofluoromethane	50	49	98	0	40	63-126
1,1-Dichloroethene	50	45	90	2	40	67-127
Acetone	50	47	94	6	40	0-154
Carbon Disulfide	50	43	86	0	40	63-126
Methylene Chloride	50	56	112	7	40	62-128
trans-1,2-Dichloroethen	50	48	96	0	40	76-120
Methyl tert-butyl ether	50	47	94	2	40	52-130
1,1-Dichloroethane	50	48	96	2	40	74-118
2-Butanone	50	42	84	5	40	14-154
cis-1,2-Dichloroethene	50	49	98	0	40	83-115
Chloroform	50	49	98	2	40	77-120
1,1,1-Trichloroethane	50	49	98	0	40	72-126
Carbon Tetrachloride	50	47	94	0	40	69-135
1,2-Dichloroethane	50	48	96	0	40	65-126
Benzene	50	49	98	0	40	78-121
Trichloroethene	50	48	96	2	40	75-125
1,2-Dichloropropane	50	50	100	0	40	78-117
Bromodichloromethane	50	49	98	2	40	75-118
cis-1,3-Dichloropropene	50	49	98	0	40	78-120
4-Methyl-2-pentanone	50	41	82	0	40	45-141
Toluene	50	50	100	0	40	80-126
trans-1,3-Dichloroprope	50	48	96	2	40	73-123
1,1,2-Trichloroethane	50	51	102	2	40	66-125

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000099

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50	0.0	56	112	48-135
Chloromethane	50	0.0	51	102	60-118
Vinyl Chloride	50	0.0	52	104	65-113
Bromomethane	50	0.0	89	178*	73-122
Chloroethane	50	0.0	81	162*	72-118
Trichlorofluoromethane	50	0.0	76	152*	68-129
1,1-Dichloroethene	50	0.0	53	106	67-121
Acetone	50	5	42	74	38-161
Carbon Disulfide	50	0.0	60	120	53-137
Methylene Chloride	50	2	64	124	59-132
trans-1,2-Dichloroethen	50	0.0	48	96	71-124
Methyl tert-butyl ether	50	0.0	31	62*	75-123
1,1-Dichloroethane	50	0.0	51	102	83-116
2-Butanone	50	0.0	35	70	64-139
cis-1,2-Dichloroethene	50	3	53	100	83-120
Chloroform	50	0.0	54	108	89-118
1,1,1-Trichloroethane	50	0.0	57	114	81-122
Carbon Tetrachloride	50	0.0	57	114	79-125
1,2-Dichloroethane	50	0.0	57	114	83-123
Benzene	50	0.0	50	100	81-120
Trichloroethene	50	0.0	50	100	77-121
1,2-Dichloropropane	50	0.0	51	102	81-116
Bromodichloromethane	50	0.0	54	108	90-114
cis-1,3-Dichloropropene	50	0.0	50	100	78-119
4-Methyl-2-pentanone	50	0.0	40	80	57-138
Toluene	50	0.0	50	100	81-121
trans-1,3-Dichloroprope	50	0.0	50	100	85-118
1,1,2-Trichloroethane	50	0.0	48	96	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	53	106	6	40	48-135
Chloromethane	50	55	110	8	40	60-118
Vinyl Chloride	50	58	116*	11	40	65-113
Bromomethane	50	86	172*	3	40	73-122
Chloroethane	50	73	146*	10	40	72-118
Trichlorofluoromethane	50	79	158*	4	40	68-129
1,1-Dichloroethene	50	54	108	2	40	67-121
Acetone	50	45	80	8	40	38-161
Carbon Disulfide	50	60	120	0	40	53-137
Methylene Chloride	50	62	120	3	40	59-132
trans-1,2-Dichloroethen	50	48	96	0	40	71-124
Methyl tert-butyl ether	50	32	64*	3	40	75-123
1,1-Dichloroethane	50	50	100	2	40	83-116
2-Butanone	50	35	70	0	40	64-139
cis-1,2-Dichloroethene	50	51	96	4	40	83-120
Chloroform	50	53	106	2	40	89-118
1,1,1-Trichloroethane	50	55	110	4	40	81-122
Carbon Tetrachloride	50	55	110	4	40	79-125
1,2-Dichloroethane	50	55	110	4	40	83-123
Benzene	50	49	98	2	40	81-120
Trichloroethene	50	49	98	2	40	77-121
1,2-Dichloropropane	50	50	100	2	40	81-116
Bromodichloromethane	50	53	106	2	40	90-114
cis-1,3-Dichloropropene	50	48	96	4	40	78-119
4-Methyl-2-pentanone	50	39	78	2	40	57-138
Toluene	50	49	98	2	40	81-121
trans-1,3-Dichloroprope	50	49	98	2	40	85-118
1,1,2-Trichloroethane	50	47	94	2	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000093

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		17	68	0-127
bis(2-Chloroethyl)Ether	25		18	72	46-109
2-Chlorophenol	25		17	68	22-117
2-Methylphenol	25		13	52	40-104
2,2'-oxybis(1-Chloropro	25		17	68	10-134
4-Methylphenol	25		16	64	35-106
N-Nitroso-di-n-prop.(1)	25		17	68	44-122
Hexachloroethane	25		14	56	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		27	108	48-118
2-Nitrophenol	25		19	76	29-122
2,4-Dimethylphenol	25		1	4*	14-109
2,4-Dichlorophenol	25		19	76	31-122
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		42	168*	0-152
bis(2-Chloroethoxy)meth	25		21	84	49-112
Hexachlorobutadiene	25		16	64	28-109
4-Chloro-3-Methylphenol	25		19	76	48-117
2-Methylnaphthalene	25		15	60	43-113
Hexachlorocyclopentadie	25		4	16*	34-103
2,4,6-Trichlorophenol	25		21	84	34-127
2,4,5-Trichlorophenol	25		22	88	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		23	92	53-124
Acenaphthylene	25		21	84	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		12	48	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000107

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		22	88	50-121
2,4-Dinitrophenol	25		16	64	0-144
4-Nitrophenol	25		21	84	0-160
Dibenzofuran	25		18	72	51-122
2,4-Dinitrotoluene	25		23	92	52-126
Diethylphthalate	25		24	96	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		25	100	52-125
4-Nitroaniline	25		13	52	47-117
4,6-Dinitro-2-methylphe	25		19	76	3-151
N-Nitrosodiphenylamine	25		45	180*	50-150
4-Bromophenyl-phenyleth	25		25	100	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		18	72	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		26	104	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		23	92	53-131
Butylbenzylphthalate	25		23	92	54-128
3,3'-Dichlorobenzidine	25		4	16*	41-117
Benzo(a)anthracene	25		23	92	56-124
Chrysene	25		23	92	53-123
bis(2-Ethylhexyl)phthal	25		24	96	56-127
Di-n-octylphthalate	25		23	92	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000108

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Lab File ID (Standard): S2D3239 Date Analyzed: 04/17/03

Instrument ID: S2 Time Analyzed: 2059

	IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
12 HOUR STD	420892	18.22	340386	23.67	237852	27.02
UPPER LIMIT	841784	18.72	680772	24.17	475704	27.52
LOWER LIMIT	210446	17.72	170193	23.17	118926	26.52
EPA SAMPLE NO.						
01 WOD-MW3	244620	18.21	182997	23.65	118462*	26.99
02 FF15GW2	303300	18.22	238581	23.64	161645	26.99
03 WFF15GW1	248717	18.22	195191	23.64	128445	26.99
04 WFF15GW1MS	255177	18.22	203805	23.66	132222	26.99
05 WFF15GW1MSD	241529	18.22	194656	23.65	129621	27.00
06 FF16GW2S	228269	18.21	191263	23.65	128453	26.99
07						
08						
09						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	25	0.0	21	84	0-127
bis(2-Chloroethyl)Ether	25	0.0	20	80	46-109
2-Chlorophenol	25	0.0	19	76	22-117
2-Methylphenol	25	0.0	15	60	40-104
2,2'-oxybis(1-Chloropro	25	0.0	21	84	10-134
4-Methylphenol	25	0.0	17	68	35-106
N-Nitroso-di-n-prop.(1)	25	0.0	14	56	44-122
Hexachloroethane	25	0.0	19	76	24-104
Nitrobenzene	25	0.0	21	84	47-112
Isophorone	25	0.0	31	124*	48-118
2-Nitrophenol	25	0.0	20	80	29-122
2,4-Dimethylphenol	25	0.0	2	8*	14-109
2,4-Dichlorophenol	25	0.0	20	80	31-122
Naphthalene	25	0.0	20	80	38-117
4-Chloroaniline	25	0.0	40	160*	0-152
bis(2-Chloroethoxy)meth	25	0.0	23	92	49-112
Hexachlorobutadiene	25	0.0	17	68	28-109
4-Chloro-3-Methylphenol	25	0.0	21	84	48-117
2-Methylnaphthalene	25	0.0	16	64	43-113
Hexachlorocyclopentadie	25	0.0	9	36	34-103
2,4,6-Trichlorophenol	25	0.0	21	84	34-127
2,4,5-Trichlorophenol	25	0.0	22	88	32-131
2-Chloronaphthalene	25	0.0	21	84	47-116
2-Nitroaniline	25	0.0	17	68	51-120
Dimethylphthalate	25	0.0	23	92	53-124
Acenaphthylene	25	0.0	20	80	50-119
2,6-Dinitrotoluene	25	0.0	22	88	52-122
3-Nitroaniline	25	0.0	12	48	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000101

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	25	0.0	22	88	50-121
2,4-Dinitrophenol	25	0.0	21	84	0-144
4-Nitrophenol	25	0.0	22	88	0-160
Dibenzofuran	25	0.0	18	72	51-122
2,4-Dinitrotoluene	25	0.0	22	88	52-126
Diethylphthalate	25	0.0	24	96	53-126
4-Chlorophenyl-phenylet	25	0.0	23	92	50-124
Fluorene	25	2	24	88	52-125
4-Nitroaniline	25	0.0	10	40*	47-117
4,6-Dinitro-2-methylphe	25	0.0	22	88	3-151
N-Nitrosodiphenylamine	25	0.0	38	152*	50-150
4-Bromophenyl-phenyleth	25	0.0	23	92	51-124
Hexachlorobenzene	25	0.0	23	92	52-124
Pentachlorophenol	25	0.0	24	96	5-125
Phenanthrene	25	2	26	96	52-128
Anthracene	25	0.0	21	84	52-127
Di-n-butylphthalate	25	0.0	25	100	56-132
Fluoranthene	25	0.0	24	96	53-130
Pyrene	25	0.0	25	100	53-131
Butylbenzylphthalate	25	0.0	24	96	54-128
3,3'-Dichlorobenzidine	25	0.0	0.0	0*	41-117
Benzo(a)anthracene	25	0.0	24	96	56-124
Chrysene	25	0.0	23	92	53-123
bis(2-Ethylhexyl)phthal	25	0.0	23	92	56-127
Di-n-octylphthalate	25	0.0	22	88	59-138
Benzo(b)fluoranthene	25	0.0	24	96	58-126
Benzo(k)fluoranthene	25	0.0	24	96	60-124
Benzo(a)pyrene	25	0.0	18	72	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000102

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	21	84	0	40	0-127
bis(2-Chloroethyl)Ether	25	19	76	5	40	46-109
2-Chlorophenol	25	19	76	0	40	22-117
2-Methylphenol	25	15	60	0	40	40-104
2,2'-oxybis(1-Chloropro	25	19	76	10	40	10-134
4-Methylphenol	25	18	72	6	40	35-106
N-Nitroso-di-n-prop.(1)	25	19	76	30	40	44-122
Hexachloroethane	25	18	72	5	40	24-104
Nitrobenzene	25	20	80	5	40	47-112
Isophorone	25	31	124*	0	40	48-118
2-Nitrophenol	25	20	80	0	40	29-122
2,4-Dimethylphenol	25	2	8*	0	40	14-109
2,4-Dichlorophenol	25	21	84	5	40	31-122
Naphthalene	25	19	76	5	40	38-117
4-Chloroaniline	25	45	180*	12	40	0-152
bis(2-Chloroethoxy)meth	25	22	88	4	40	49-112
Hexachlorobutadiene	25	16	64	6	40	28-109
4-Chloro-3-Methylphenol	25	21	84	0	40	48-117
2-Methylnaphthalene	25	16	64	0	40	43-113
Hexachlorocyclopentadie	25	12	48	28	40	34-103
2,4,6-Trichlorophenol	25	21	84	0	40	34-127
2,4,5-Trichlorophenol	25	22	88	0	40	32-131
2-Chloronaphthalene	25	21	84	0	40	47-116
2-Nitroaniline	25	17	68	0	40	51-120
Dimethylphthalate	25	23	92	0	40	53-124
Acenaphthylene	25	20	80	0	40	50-119
2,6-Dinitrotoluene	25	22	88	0	40	52-122
3-Nitroaniline	25	12	48	0	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000104

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix Spike - EPA Sample No.: WFF15GW1

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	22	88	0	40	50-121
2,4-Dinitrophenol	25	22	88	5	40	0-144
4-Nitrophenol	25	21	84	5	40	0-160
Dibenzofuran	25	18	72	0	40	51-122
2,4-Dinitrotoluene	25	23	92	4	40	52-126
Diethylphthalate	25	23	92	4	40	53-126
4-Chlorophenyl-phenylet	25	23	92	0	40	50-124
Fluorene	25	24	88	0	40	52-125
4-Nitroaniline	25	11	44*	10	40	47-117
4,6-Dinitro-2-methylphe	25	23	92	4	40	3-151
N-Nitrosodiphenylamine	25	40	160*	5	40	50-150
4-Bromophenyl-phenyleth	25	24	96	4	40	51-124
Hexachlorobenzene	25	24	96	4	40	52-124
Pentachlorophenol	25	24	96	0	40	5-125
Phenanthrene	25	26	96	0	40	52-128
Anthracene	25	22	88	5	40	52-127
Di-n-butylphthalate	25	25	100	0	40	56-132
Fluoranthene	25	24	96	0	40	53-130
Pyrene	25	24	96	4	40	53-131
Butylbenzylphthalate	25	24	96	0	40	54-128
3,3'-Dichlorobenzidine	25	0.0	0*		40	41-117
Benzo(a)anthracene	25	24	96	0	40	56-124
Chrysene	25	25	100	8	40	53-123
bis(2-Ethylhexyl)phthal	25	24	96	4	40	56-127
Di-n-octylphthalate	25	23	92	4	40	59-138
Benzo(b)fluoranthene	25	25	100	4	40	58-126
Benzo(k)fluoranthene	25	24	96	0	40	60-124
Benzo(a)pyrene	25	20	80	10	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000105

TETRA TECH NUS

PHIL- 17142

TO: G. GLENN **DATE:** MAY 14, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0420

SAMPLES: 10/Aqueous/

WOD-MW3	WOD-WFF16-GW2D	WOD-WFF16-GW2S
WOD-MW3F	WOD-WFF16-GW2DF	WOD-WFF16-GW2SF
WOD-WFF15-GW2	WOD-WFF15-GW1	
WOD-WFF15-GW2F	WOD-WFF15-GW1F	

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0420 consists of 10 aqueous environmental samples (designated WOD-). All samples were analyzed for TAL metals. No field duplicate pairs were included in this SDG. No field quality control (QC) blanks were included in this SDG.

The samples were collected by Tetra Tech NUS on March 12, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B and 7470A.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, interference check solutions, and detection limits.

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Aluminum	70 ug/L	350 ug/L
Antimony	6.2 ug/L	31 ug/L
Barium	5.9 ug/L	29.5 ug/L

Analyte	Maximum Concentration	Action Level
Beryllium	0.6 ug/L	3 ug/L
Chromium	1 ug/L	5 ug/L
Cobalt	1.9 ug/L	9.5 ug/L
Copper	6.2 ug/L	31 ug/L
Iron	28.7 ug/L	143.5 ug/L
Magnesium	115.9 ug/L	579.5 ug/L
Manganese	1.6 ug/L	8 ug/L
Nickel	2.3 ug/L	11.5 ug/L
Potassium	79.9 ug/L	400 ug/L
Thallium	3 ug/L	15 ug/L
Vanadium	1.3 ug/L	6.5 ug/L
Zinc	17.4 ug/L	86.8 ug/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. Positive results for aluminum, antimony, barium, chromium, cobalt, copper, iron, manganese, nickel, vanadium, and zinc in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for beryllium, magnesium, and potassium because all concentrations exceeded the associated blank action levels or were non-detected.

- Arsenic, barium, cadmium, chromium, copper, lead, silver, thallium, and zinc were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. For cadmium and silver in samples WOD-WFF16-GW2D and WOD-WFF16-GW2DF, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were qualified as biased high (K). Qualification was superseded by the qualifier (B) for blank contamination for chromium and copper in these samples.

- Antimony, manganese, selenium, and vanadium exhibited negative concentrations with absolute values greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For selenium and vanadium in samples WOD-WFF16-GW2D and WOD-WFF16-GW2DF, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL). For positive antimony results in samples WOD-WFF16-GW2D and WOD-WFF16-GW2DF, the sample concentrations were greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such a result was qualified as biased low, however, qualification was superceded by the qualifier (B) for blank contamination.

- For aluminum the difference in laboratory duplicate concentrations in sample WOD-WFF15-GW1D exceeded the control limits for results less than 5X the CRDL. The absolute difference of the duplicate results exceeded 2X the CRDL. The positive aluminum results for all associated samples were qualified estimated (J), unless superceded by (B) for blank contamination.
- For manganese the percent difference (%D) in ICP serial dilution concentrations in sample WOD-WFF15-GW1D exceeded the QC limit of 10%. The positive manganese results for all associated samples were qualified estimated (J), unless superceded by (B) for blank contamination.

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several contaminants were detected in the laboratory blanks. Associated sample results were qualified (B) to indicate artifacts of blank contamination. Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as biased high (K) and biased low (UL). ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed.

Other Factors Affecting Data Quality: Laboratory duplicate concentrations exceeded QC limits for one analyte. The percent difference for the ICP serial dilution exceeded QC limits for one analyte.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-MW3F			WOD-WFF15-GW1			WOD-WFF15-GW1F			WOD-WFF15-GW2		
Laboratory ID:	B0420-01C			B0420-07A			B0420-04C			B0420-10A			B0420-02C		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L			ug/L		
Aluminum	376	J	F	20.5	B	A	831	J	F	51.2	B	A	2410	J	F
Antimony	4.1	B	A	3	U		4.5	B	A	3.6	B	A	3.6	B	A
Arsenic	3	U		3	U		3	U		3	U		4.4	B	A
Barium	21.8	B	A	19.7	B	A	33.4			29.1	B	A	32.4		
Beryllium	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	
Calcium	11600			12100			9240			9290			4740		
Chromium	2.7	B	A	6.5			1.3	B	A	0.64	B	A	3.2	B	A
Cobalt	2.4	B	A	1.5	B	A	3.9	B	A	3.6	B	A	3.5	B	A
Copper	12.6	B	A	13.1	B	A	15.3	B	A	5.4	B	A	10.7	B	A
Iron	203			68.5	B	A	1990			1690			6810		
Lead	4	U		4	U		4	U		4	U		4	U	
Magnesium	4350			4240			9330			8500			2840		
Manganese	6.8	B	A	6.2	B	A	220	J	I	214	J	I	15.2	J	I
Mercury	0.13	U		0.13	U		0.13	U		0.13	U		0.13	U	
Nickel	2.3	B	A	1.7	B	A	1.9	B	A	1.4	B	A	3.1	B	A
Potassium	1460			1390			1160			1230			1610		
Selenium	9	U		9	U		9	U		9	U		9	U	
Silver	2.3			2	U		2	U		2	U		2.8		
Sodium	3250			3200			3390			3230			12700		
Thallium	3	U		3	U		3	U		3	U		3	U	
Vanadium	1.1	B	A	0.7	U		0.7	U		0.7	U		3.9	B	A
Zinc	48.4	B	A	42.6	B	A	44.3	B	A	25.9	B	A	46.4	B	A

DATA SUMMARY OF INORGANIC RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW2F			WOD-WFF16-GW2D			WOD-WFF16-GW2DF			WOD-WFF16-GW2S			WOD-WFF16-GW2SF		
Laboratory ID:	B0420-08A			B0420-03C			B0420-09A			B0420-05C			B0420-11A		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L			ug/L		
Aluminum	1370	J	F	155	B	A	45.2	B	A	211	B	A	38.2	B	A
Antimony	3.3	B	A	4	B	A	4.6	B	A	5.3	B	A	3	B	A
Arsenic	3.4	B	A	21.4			19.5			12.5	B	A	9.5	B	A
Barium	29.1	B	A	47.2			45.6			117			110		
Beryllium	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.92	K	K	0.78	K	K	0.7	U		0.7	U	
Calcium	4430			6980			6950			30800			32500		
Chromium	2.2	B	A	2.7	B	A	1.1	B	A	0.91	B	A	0.67	B	A
Cobalt	3.6	B	A	1.8	B	A	1.6	B	A	2.8	B	A	2.4	B	A
Copper	9.1	B	A	8.8	B	A	7	B	A	23.9	B	A	5.2	B	A
Iron	6680			21700			21400			5970			5300		
Lead	4	U		4	U		4	U		4	U		4	U	
Magnesium	2640			6040			6030			10300			10900		
Manganese	14.5	J	I	97.1	J	I	97.3	J	I	44.1	J	I	41.8	J	I
Mercury	0.13	U		0.13	U		0.13	U		0.13	U		0.14	U	
Nickel	3.4	B	A	1.6	B	A	0.98	B	A	1.8	B	A	1.3	B	A
Potassium	1600			2140			2120			2390			2420		
Selenium	9	U		9	UL	K	9	UL	K	9	U		9	U	
Silver	2	U		3.1	K	K	2	K	K	2	U		2	U	
Sodium	11900			7630			7560			3160			3010		
Thallium	3	U		3	U		3	U		3	U		3	U	
Vanadium	2.6	B	A	0.7	UL	K	0.7	UL	K	0.72	B	A	0.7	U	
Zinc	37.8	B	A	37.1	B	A	31.2	B	A	44.8	B	A	20.9	B	A

DATA SUMMARY OF INORGANIC RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
K -- Positive result is considered biased high due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\FTA\B0420\M_B0420.DBF data retrieved on: 05/14/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW2DF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-09A_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.2	B	*	P
7440-36-0	Antimony	4.6	B		P
7440-38-2	Arsenic	19.5	B		P
7440-39-3	Barium	45.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.78	B		P
7440-70-2	Calcium	6950			P
7440-47-3	Chromium	1.1	B	*	P
7440-48-4	Cobalt	1.6	B		P
7440-50-8	Copper	7.0	B	*	P
7439-89-6	Iron	21400			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6030			P
7439-96-5	Manganese	97.3		E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.98	B	*	P
7440-09-7	Potassium	2120			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	B		P
7440-23-5	Sodium	7560			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	31.2	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FF16GW2D

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-03C_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	155	B	*	P
7440-36-0	Antimony	4.0	B		P
7440-38-2	Arsenic	21.4			P
7440-39-3	Barium	47.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.92	B		P
7440-70-2	Calcium	6980			P
7440-47-3	Chromium	2.7	B	*	P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	8.8	B	* 3/27/11	P
7439-89-6	Iron	21700			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6040			P
7439-96-5	Manganese	97.1		E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.6	B	*	P
7440-09-7	Potassium	2140			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.1	B		P
7440-23-5	Sodium	7630			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	37.1	B	* 3/27/11	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FF16GW2S

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-05C_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	211		*	P
7440-36-0	Antimony	5.3	B		P
7440-38-2	Arsenic	12.5	B		P
7440-39-3	Barium	117	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	30800			P
7440-47-3	Chromium	0.91	B	*	P
7440-48-4	Cobalt	2.8	B		P
7440-50-8	Copper	23.9	B	* RW 3/24/11	P
7439-89-6	Iron	5970			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10300			P
7439-96-5	Manganese	44.1	B	E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.8	B	*	P
7440-09-7	Potassium	2390			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3160			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.72	B		P
7440-66-6	Zinc	44.8	B	* RW 3/24/11	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW1

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-04C_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	831		*	P
7440-36-0	Antimony	4.5	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	33.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9240			P
7440-47-3	Chromium	1.3	B	*	P
7440-48-4	Cobalt	3.9	B		P
7440-50-8	Copper	15.3	B	* mc 3/24/03	P
7439-89-6	Iron	1990			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	9330			P
7439-96-5	Manganese	220		E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.9	B	*	P
7440-09-7	Potassium	1160			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3390			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	44.3	B	* mc 3/24/03	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW1F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-10A_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.2	B	*	P
7440-36-0	Antimony	3.6	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	29.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9290			P
7440-47-3	Chromium	0.64	B	*	P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	5.4	B	*ZM 3/24/17	P
7439-89-6	Iron	1690			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	8500			P
7439-96-5	Manganese	214		E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.4	B	*	P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3230			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	25.9	B	*ZM 3/24/17	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW2F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-08A_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1370		*	P
7440-36-0	Antimony	3.3	B		P
7440-38-2	Arsenic	3.4	B		P
7440-39-3	Barium	29.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4430			P
7440-47-3	Chromium	2.2	B	*	P
7440-48-4	Cobalt	3.6	B		P
7440-50-8	Copper	9.1	B	* RM	P
7439-89-6	Iron	6680		3/24/17	P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2640			P
7439-96-5	Manganese	14.5	B	E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.4	B	*	P
7440-09-7	Potassium	1600			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	11900			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.6	B		P
7440-66-6	Zinc	37.8	B	* RM 3/24/17	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW2SF

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-11A_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	38.2	B	*	P
7440-36-0	Antimony	3.0	B		P
7440-38-2	Arsenic	9.5	B		P
7440-39-3	Barium	110	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	32500			P
7440-47-3	Chromium	0.67	B	*	P
7440-48-4	Cobalt	2.4	B		P
7440-50-8	Copper	5.2	B	* PM 4/24/03	P
7439-89-6	Iron	5300			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10900			P
7439-96-5	Manganese	41.8	B	E	P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.3	B	*	P
7440-09-7	Potassium	2420			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3010			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	20.9	B	* PM 4/24/03	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420__

Matrix (soil/water): WATER_ Lab Sample ID: B0420-01C_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	376		*	P
7440-36-0	Antimony	4.1	B		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	21.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	11600			P
7440-47-3	Chromium	2.7	B	*	P
7440-48-4	Cobalt	2.4	B		P
7440-50-8	Copper	12.6	B	* zw	P
7439-89-6	Iron	203			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4350			P
7439-96-5	Manganese	6.8	B	E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.3	B	*	P
7440-09-7	Potassium	1460			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.3	B		P
7440-23-5	Sodium	3250			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.1	B	zw	P
7440-66-6	Zinc	48.4	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW3F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Lab Sample ID: B0420-07A_____

Level (low/med): MED____ Date Received: 03/13/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.5	B	*	P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	19.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	12100			P
7440-47-3	Chromium	6.5	B	*	P
7440-48-4	Cobalt	1.5	B		P
7440-50-8	Copper	13.1	B	*	P
7439-89-6	Iron	68.5	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4240			P
7439-96-5	Manganese	6.2	B	E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.7	B	*	P
7440-09-7	Potassium	1390			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3200			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	42.6	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FF15GW2

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0420

Matrix (soil/water): WATER Lab Sample ID: B0420-02C

Level (low/med): MED Date Received: 03/13/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2410		*	P
7440-36-0	Antimony	3.6	B		P
7440-38-2	Arsenic	4.4	B		P
7440-39-3	Barium	32.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4740			P
7440-47-3	Chromium	3.2	B	*	P
7440-48-4	Cobalt	3.5	B		P
7440-50-8	Copper	10.7	B	* JMC	P
7439-89-6	Iron	6810		3/24/03	P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2840			P
7439-96-5	Manganese	15.2	B	E	P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.1	B	*	P
7440-09-7	Potassium	1610			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.8	B		P
7440-23-5	Sodium	12700			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	3.9	B		P
7440-66-6	Zinc	46.4	B	* JMC 3/24/03	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

000075

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0420
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl	TCL VOC + MTBE 40 ml VOA Vial HCl	TOC 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TCL PCB 500 ml Poly HNO3	TAL Metals 500 ml Poly HNO3	Suomi Poly Unpres. Chloride Suppress Nitrate	500 ml Poly HNO3 Dissolved Metals	60z Amber Glass TCL VOC + PCB	COMMENTS
WOD-MW3	3/12/03 0900		X	X			01		2	2	1	1	1	1				
WOD-WFF15-GW2	3/12/03 0950		X	X			02		2	2	1	1	1	1				
WOD-WFF16-GW2D	3/12/03 1135		X	X			03		2	2	1	1	1	1				
WOD-WFF15-GW1	3/12/03 1230		X	X			04		6	2	3	3	3	3				DO MS/MSD
WOD-WFF16-GW2S	3/12/03 1435		X	X			05		2	2	1	1	1	1				
TB-031203	3/12/03 0715		X	X			06		2									
WOD-MW3F	3/12/03 0900		X	X			07								1			
WOD-WFF15-GW2F	3/12/03 0950		X	X			08								1			
WOD-WFF16-GW2DF	3/12/03 1135		X	X			09								1			
WOD-WFF15-GW1F	3/12/03 1230		X	X			10								3			DO MS/MSD
WOD-WFF16-GW2SF	3/12/03 1435		X	X			11								1			
FTA-SS-111	3/12/03 1515		X		X		12									1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
		3/12/03 1700		3-13-03 0900	Laboratory supplied Trip Blank shipped via Federal Express Airbill NO 828646451 10	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous samples that were collected on March 12, 2003, and received at Mitkem on March 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally high recovery of bromofluorobenzene in WFF15GW1MS and WFF15GW1MSD.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of dichlorodifluoromethane in both V5KLCS and V5KLCSDE. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike and high recovery of vinyl chloride, bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and N-nitrosodiphenylamine, low recovery of 2,4-dimethylphenol and 4-nitroaniline and no recovery of 3,3"-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: sample FF16GW2D was lost during sample prep. Due to insufficient sample volume, the sample could not be re-extracted. The PCB extract was analyzed to evaluate semivolatile compounds. Only raw data is submitted for sample FF16GW2D for the semivolatile analysis. Form Is, chromatogram and quant report for this sample is included following the SDG Narrative. The PCB sample was extracted at neutral pH and night not be amenable to acidic phenolic target analytes. No other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW1. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: manganese was outside of QC limits for the serial dilution. Form 1's are flagged with an "E" for manganese. No other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample FF16GW2 instead of sample WFF15GW1 due to insufficient sample volume. Spike recovery was within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	24.5	B	54.2	B	17.4	B	29.555	B	P
Antimony 31	6.2	B	5.8	B	5.9	B	5.6	B	3.000	U	P
Arsenic 17	3.4	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.8	B	4.0	U	4.1	B	4.0	B	4.678	B	P
Beryllium 3	0.6	B	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium 5	1.0	B	0.7	B	0.6	U	0.6	U	0.600	U	P
Cobalt 9.5	1.9	B	1.4	B	1.3	B	1.3	B	1.342	B	P
Copper 31	6.2	B	4.0	U	4.0	U	4.0	B	4.000	U	P
Iron 143.5	26.0	U	26.0	U	143.5 28.7	B	26.0	U	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	20.3	B	49.4	B	108.2	B	42.1	B	115.898 579.5	B	P
Manganese 8	1.6	B	1.1	B	1.2	B	1.1	B	1.440	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel 11.5	2.3	B	1.6	B	1.5	B	1.5	B	1.211	B	P
Potassium 400	79.9	B	78.0	U	78.0	U			78.974	B	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	83.0	U	83.0	U	83.0	U			83.000	U	P
Thallium 15	3.0	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium 4.5	1.3	B	0.9	B	0.7	U	1.1	B	0.700	U	P
Zinc	9.2	B	7.0	U	7.0	U	7.0	U	17.364 86.8	B	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Preparation Blank Matrix (soil/water): ____

Preparation Blank Concentration Units (ug/L or mg/kg): ____

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			42.0	B	17.0	U	350 70.0	B			P
Antimony			4.8	B	3.3	B	4.2	B			P
Arsenic			3.0	U	3.0	U	3.0	U			P
Barium			29.5 5.9	B	4.0	U	4.9	B			P
Beryllium			0.5	U	0.5	U	0.5	U			P
Cadmium			0.7	U	0.7	U	0.7	U			P
Calcium			240.0	U	240.0	U	240.0	U			P
Chromium			0.6	B	0.6	U	0.6	U			P
Cobalt			1.8	B	1.2	B	1.6	B			P
Copper			4.7	B	4.0	U	4.0	U			P
Iron			26.0	U	26.0	U	28.1	B			P
Lead			4.0	U	4.0	U	4.0	U			P
Magnesium			76.9	B	31.2	B	102.2	B			P
Manganese			1.6	B	1.1	B	1.3	B			P
Mercury											
Nickel			1.8	B	1.4	B	1.5	B			P
Potassium											
Selenium			9.0	U	9.0	U	9.0	U			P
Silver			2.0	U	2.0	U	2.0	U			P
Sodium											
Thallium			3.0	U	3.0	U	3.0	U			P
Vanadium			1.2	B	0.8	B	1.0	B			P
Zinc			7.3	B	7.0	U	7.0	U			P
Cyanide											

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420_

ICP ID Number: OPTIMA_2A____ ICS Source: HIGH_PURITY_

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum 17	500000	500000	500717	507478.8	101.5	506317	511704.9	102.3
Antimony 3		600	-75.2	683.9	114.0	-3.1	664.6	110.8
Arsenic 3		100	4.5	99.8	99.8	14.6	92.9	92.9
Barium 4		500	9.5	492.0	98.4	9	492.0	98.4
Beryllium 0.5		500		473.3	94.7		476.8	95.4
Cadmium 0.7		1000	6.6	890.6	89.1	6.4	895.6	89.6
Calcium 240	500000	500000	512837	520029.2	104.0	519847	519985.8	104.0
Chromium 0.6		500	2	465.5	93.1	1.5	468.1	93.6
Cobalt 0.9		500		447.6	89.5		446.8	89.4
Copper 4		500	17.3	510.4	102.1	11.3	500.5	100.1
Iron 76	200000	200000	179225	181113.5	90.6	181120	182395.8	91.2
Lead 4		500	4.4	458.2	91.6		459.8	92.0
Magnesium 8	500000	500000	490052	495144.3	99.0	495174	498804.7	99.8
Manganese 0.8		500	-11.5	445.9	89.2	-11.9	452.2	90.4
Mercury								
Nickel 0.8		1000		853.4	85.3		865.8	86.6
Potassium								
Selenium 9		500	-9.7	485.0	97.0		509.8	102.0
Silver 2		200	4.4	208.1	104.0	3.3	205.5	102.8
Sodium								
Thallium 3		100		96.1	96.1	11.8	93.5	93.5
Vanadium 0.7		500	-3.8	468.6	93.7	-4.1	472.5	94.5
Zinc 7		1000	22.1	890.9	89.1	9.2	877.7	87.8

WFF16GW2D (ICSE) Fe
" DF (-MA) Fe

000738

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW2D	4		IRON	200000	-15.2	21706	-1.65	L	na
Arsenic	3	WOD-WFF16-GW2D	21.4		IRON	200000	14.6	21706	1.58	na	na
Barium	4	WOD-WFF16-GW2D	47.2		IRON	200000	9.5	21706	1.03	na	na
Cadmium	0.7	WOD-WFF16-GW2D	0.9		IRON	200000	6.6	21706	0.72	K	na
Chromium	0.6	WOD-WFF16-GW2D	2.7		IRON	200000	2	21706	0.22	na	na
Copper	4	WOD-WFF16-GW2D	8.8		IRON	200000	17.3	21706	1.88	K	na
Lead	4	WOD-WFF16-GW2D		U	IRON	200000	4.4	21706	0.48	na	na
Manganese	0.8	WOD-WFF16-GW2D	97.1		IRON	200000	-11.9	21706	-1.29	na	na
Selenium	9	WOD-WFF16-GW2D		U	IRON	200000	-9.7	21706	-1.05	na	UL
Silver	2	WOD-WFF16-GW2D	3.1		IRON	200000	4.4	21706	0.48	K	na
Thallium	3	WOD-WFF16-GW2D		U	IRON	200000	11.8	21706	1.28	na	na
Vanadium	0.7	WOD-WFF16-GW2D		U	IRON	200000	-4.1	21706	-0.44	na	UL
Zinc	7	WOD-WFF16-GW2D	37.1		IRON	200000	22.1	21706	2.40	na	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW2DF	4.6		IRON	200000	-15.2	21364	-1.62	L	na
Arsenic	3	WOD-WFF16-GW2DF	19.5		IRON	200000	14.6	21364	1.56	na	na
Barium	4	WOD-WFF16-GW2DF	45.6		IRON	200000	9.5	21364	1.01	na	na
Cadmium	0.7	WOD-WFF16-GW2DF	0.8		IRON	200000	6.6	21364	0.71	K	na
Chromium	0.6	WOD-WFF16-GW2DF	1.1		IRON	200000	2	21364	0.21	K	na
Copper	4	WOD-WFF16-GW2DF	7		IRON	200000	17.3	21364	1.85	K	na
Lead	4	WOD-WFF16-GW2DF		U	IRON	200000	4.4	21364	0.47	na	na
Manganese	0.8	WOD-WFF16-GW2DF	97.3		IRON	200000	-11.9	21364	-1.27	na	na
Selenium	9	WOD-WFF16-GW2DF		U	IRON	200000	-9.7	21364	-1.04	na	UL
Silver	2	WOD-WFF16-GW2DF	2		IRON	200000	4.4	21364	0.47	K	na
Thallium	3	WOD-WFF16-GW2DF		U	IRON	200000	11.8	21364	1.26	na	na
Vanadium	0.7	WOD-WFF16-GW2DF		U	IRON	200000	-4.1	21364	-0.44	na	UL
Zinc	7	WOD-WFF16-GW2DF	31.2		IRON	200000	22.1	21364	2.36	na	na

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

WFF15GW1D

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420____

Matrix (soil/water): WATER_ Level (low/med): MED_____

% Solids for Sample: 0.0_____ % Solids for Duplicate: 0.0_____

Concentration Units (ug/L or mg/kg dry weight): UG/L__

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		830.7915		50.3940	B	177.1	*	P
Antimony		4.4515	B	4.3985	B	1.2		P
Arsenic		3.0000	U	3.0000	U			P
Barium		33.3870	B	32.0645	B	4.0		P
Beryllium		0.5000	U	0.5000	U			P
Cadmium		0.7000	U	0.7000	U			P
Calcium		9237.5500		9320.9905		0.9		P
Chromium		1.2770	B	0.9120	B	33.3	*	P
Cobalt		3.8885	B	3.7850	B	2.7		P
Copper		15.3080	B	9.1495	B	50.4	*	P
Iron		1994.0660		1854.6730		7.2		P
Lead		4.0000	U	4.0000	U			P
Magnesium		9334.3220		8557.5795		8.7		P
Manganese	50.0	219.7630		218.5140		0.6		P
Mercury		0.1280	U	0.1280	U			CV
Nickel		1.9320	B	1.4645	B	27.5	*	P
Potassium	1000.0	1155.7365		1177.5130		1.9		P
Selenium		9.0000	U	9.0000	U			P
Silver		2.0000	U	2.0000	U			P
Sodium	1000.0	3391.7705		3379.5030		0.4		P
Thallium		3.0000	U	3.0000	U			P
Vanadium		0.7000	U	0.7000	U			P
Zinc		44.3140	B	34.6305	B	24.5	*	P
Cyanide								NR

U.S. EPA - CLP

9

ICP SERIAL DILUTIONS

EPA SAMPLE NO.

WFF15GW1L

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0420___

Matrix (soil/water): WATER_ Level (low/med): MED____

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Aluminum	830.79		265.79	B	68.0		P
Antimony	4.45	B	15.00	U	100.0		P
Arsenic	3.00	U	15.00	U			P
Barium	33.39	B	48.86	B	46.3		P
Beryllium	0.50	U	2.50	U			P
Cadmium	0.70	U	3.50	U			P
Calcium	9237.55		9540.34		3.3		P
Chromium	1.28	B	4.71	B	268.0		P
Cobalt	3.89	B	10.00	B	157.1		P
Copper	15.31	B	55.66	B	263.6		P
Iron	1994.07		2064.75		3.5		P
Lead	4.00	U	20.00	U			P
Magnesium	9334.32		8987.67		3.7		P
Manganese	219.76		513.75		133.8	E	P
Mercury							NR
Nickel	1.93	B	6.41	B	232.1		P
Potassium	1155.74		1398.12	B	21.0		P
Selenium	9.00	U	45.00	U			P
Silver	2.00	U	10.00	U			P
Sodium	3391.77		3624.21	B	6.9		P
Thallium	3.00	U	15.00	U			P
Vanadium	0.70	U	3.50	U			P
Zinc	44.31	B	89.97	B	103.0		P

TETRA TECH NUS

PHIL- 17143

TO: G. GLENN **DATE:** MAY 15, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOC, CHLORIDE, NITRATE, NITRITE, AND SULFATE
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0420

SAMPLES: 5/Aqueous/

WOD-MW3	WOD-WFF15-GW1
WOD-WFF15-GW2	WOD-WFF16-GW2S
WOD-WFF16-GW2D	

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0420 consists of 5 aqueous environmental samples (designated WOD-). All samples were analyzed for Total Organic Carbon (TOC), chloride, nitrate, nitrite, and sulfate. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 12, 2003. TOC samples were analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island. Chloride, nitrate, nitrite, and sulfate were analyzed by STL Connecticut of Shelton, Connecticut.

TOC analyses were conducted using EPA Method 415.1. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA Method 300.0.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The nitrate and nitrite samples were analyzed one day outside the 48 hour holding time. The results and detection limits for nitrate and nitrite were qualified estimated (J/UJ).

NOTES

The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Sulfate	0.031 mg/L	0.155 mg/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. No qualifications were required for sulfate because all concentrations exceeded the associated blank action levels.

The TOC data were acceptable as reported by the laboratory.

EXECUTIVE SUMMARY

Laboratory Performance: Sulfate was detected in a laboratory blank. Nitrate and nitrite fractions were analyzed outside holding times.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie
Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-MW3			WOD-WFF15-GW1			WOD-WFF15-GW2			WOD-WFF16-GW2D			WOD-WFF16-GW2S		
Laboratory ID:	B0420-01B			B0420-04B			B0420-02B			B0420-03B			B0420-05B		
Sample Date:	03/12/03			03/12/03			03/12/03			03/12/03			03/12/03		
Duplicate:															
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/L			mg/L			mg/L			mg/L			mg/L		
Total Organic Carbon	6	U		6	U		8.2			6	U		10		
Data Qualifiers:															
U -- Value is a non-detected result as reported by the laboratory.															
Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0420\TOC_B0420.DBF data retrieved on: 05/15/03															

DATA SUMMARY OF CHLORIDE, NITRATE, NITRITE, AND SULFATE RESULTS
SDG B0420 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-MW3**			**WOD-WFF15-GW1**			**WOD-WFF15-GW2**			**WOD-WFF16-GW2D**			**WOD-WFF16-GW2S**		
Laboratory ID:	**203236-001**			**203236-004**			**203236-002**			**203236-003**			**203236-005**		
Sample Date:	**03/12/03**			**03/12/03**			**03/12/03**			**03/12/03**			**03/12/03**		
Duplicate:															
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/L**			**mg/L**			**mg/L**			**mg/L**			**mg/L**		
Chloride	4.6			4.4			25			4			5.7		
Nitrate	0.38	J	H	0.072	J	H	0.1	UJ	H	0.1	UJ	H	0.03	J	H
Nitrite	0.1	UJ	H	0.1	UJ	H	0.1	UJ	H	0.1	UJ	H	0.1	UJ	H
Sulfate	16			6.3			13			7.2			6.2		
Data Qualifiers:															
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).															
UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.															
Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0420\SUB_B0420.DBF data retrieved on: 05/15/03															

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WOD-MW3
Lab ID: B0420-01

Project: Wallops Island
Collection Date: 03/12/03 9:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000142

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FF15GW2
Lab ID: B0420-02

Project: Wallops Island
Collection Date: 03/12/03 9:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	8.2		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000139

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FF16GW2D
Lab ID: B0420-03

Project: Wallops Island
Collection Date: 03/12/03 11:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	6.0		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000140

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF15GW1
Lab ID: B0420-04

Project: Wallops Island
Collection Date: 03/12/03 12:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000141

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FF16GW2S
Lab ID: B0420-05

Project: Wallops Island
Collection Date: 03/12/03 14:35

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	10		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000138

LABORATORY TEST RESULTS

Job Number: 203236

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0420-01D
Date Sampled.....: 03/12/2003
Time Sampled.....: 09:00
Sample Matrix.....: Water

Laboratory Sample ID: 203236-1
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.6			0.15	1.0	1	mg/L	15182		03/15/03 1651	ddm
	Nitrate as N (NO3-N)	0.38			0.002	0.10	1	mg/L	15182		03/15/03 1651	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1651	ddm
	Sulfate	16			0.012	1.0	1	mg/L	15182		03/15/03 1651	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203236

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0420-02D
Date Sampled.....: 03/12/2003
Time Sampled.....: 09:50
Sample Matrix.....: Water

Laboratory Sample ID: 203236-2
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	25			0.15	1.0	1	mg/L	15182		03/15/03 1705	ddm
	Nitrate as N (NO3-N)	ND	U		0.002	0.10	1	mg/L	15182		03/15/03 1705	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1705	ddm
	Sulfate	13			0.012	1.0	1	mg/L	15182		03/15/03 1705	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203236

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0420-03D
Date Sampled.....: 03/12/2003
Time Sampled.....: 11:35
Sample Matrix.....: Water

Laboratory Sample ID: 203236-3
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.0			0.15	1.0	1	mg/L	15182		03/15/03 1718	ddm
	Nitrate as N (NO3-N)	ND	U		0.002	0.10	1	mg/L	15182		03/15/03 1718	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1718	ddm
	Sulfate	7.2			0.012	1.0	1	mg/L	15182		03/15/03 1718	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203236

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0420-04D
Date Sampled.....: 03/12/2003
Time Sampled.....: 12:30
Sample Matrix.....: Water

Laboratory Sample ID: 203236-4
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.4			0.15	1.0	1	mg/L	15182		03/15/03 1731	ddm
	Nitrate as N (NO3-N)	0.072	B		0.002	0.10	1	mg/L	15182		03/15/03 1731	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1731	ddm
	Sulfate	6.3			0.012	1.0	1	mg/L	15182		03/15/03 1731	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203236

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0420-05D
Date Sampled.....: 03/12/2003
Time Sampled.....: 14:35
Sample Matrix.....: Water

Laboratory Sample ID: 203236-5
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	5.7			0.15	1.0	1	mg/L	15182		03/15/03 1839	ddm
	Nitrate as N (NO3-N)	0.030	B		0.002	0.10	1	mg/L	15182		03/15/03 1839	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1839	ddm
	Sulfate	6.2			0.012	1.0	1	mg/L	15182		03/15/03 1839	ddm

* In Description = Dry Wgt.

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0420
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 40 ml VOA Vial HCl	TCL VOC + MTBE 40 ml VOA Vial HCl	TOC 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TCL PCB 500ml Poly HNO3	TAL Metals 500ml Poly Unpres Unfiltered Surplus NJ MDL	500ml Poly HNO3 Dissolved Metals	60z Amber Glass TCL VOA + PCB	COMMENTS
WOD-MW3	3/12/03 0900		X	X			01		2	2	1	1	1	1			
WOD-WFF15-GW2	3/12/03 0950		X	X			02		2	2	1	1	1	1			
WOD-WFF16-GW2D	3/12/03 1135		X	X			03		2	2	1	1	1	1			
WOD-WFF15-GW1	3/12/03 1230		X	X			04		6	2	3	3	3	3			DO MS/MSD
WOD-WFF16-GW2S	3/12/03 1435		X	X			05		2	2	1	1	1	1			
TB-030303	3/12/03 0715		X	X			06		2								
WOD-MW3F	3/12/03 0900		X	X			07								1		
WOD-WFF15-GW2F	3/12/03 0950		X	X			08								1		
WOD-WFF16-GW2DF	3/12/03 1135		X	X			09								1		
WOD-WFF15-GW1F	3/12/03 1230		X	X			10								3		DO MS/MSD
WOD-WFF16-GW2SF	3/12/03 1435		X	X			11								1		
FTM-SS-111	3/12/03 1515		X		X		12									1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	3/12/03 1700	[signature]	3-13-03 0900	Laboratory supplied Trip Blank shipped via Federal Express Airbill NO 828646645110	3°
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for twelve aqueous samples that were collected on March 12, 2003, and received at Mitkem on March 13, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

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The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of marginally high recovery of bromofluorobenzene in WFF15GW1MS and WFF15GW1MSD.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of low recovery of dichlorodifluoromethane in both V5KLCS and V5KLCSDE. Replicate RPDs were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike and high recovery of vinyl chloride, bromomethane, choroethane and trichlorofluoromethaneand and low recovery of methyl tert-butyl ether in the matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and N-nitrosodiphenylamine, low recovery of 2,4-dimethylphenol and 4-nitroaniline and no recovery of 3,3'-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits.

Sample analysis: sample FF16GW2D was lost during sample prep. Due to insufficient sample volume, the sample could not be re-extracted. The PCB extract was analyzed to evaluate semivolatile compounds. Only raw data is submitted for sample FF16GW2D for the semivolatile analysis. Form Is, chromatogram and quant report for this sample is included following the SDG Narrative. The PCB sample was extracted at neutral pH and night not be amenable to acidic phenolic target analytes. No other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF15GW1. Spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW1. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPDs were within the QC limits with the exception of aluminum. Form 1's are flagged with an "*" for aluminum.

Sample analysis: manganese was outside of QC limits for the serial dilution. Form 1's are flagged with an "E" for manganese. No other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample FF16GW2 instead of sample WFF15GW1 due to insufficient sample volume. Spike recovery was within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW1. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/29/03

SEVERN TRENT STL

STL Report : 203236
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. All samples were received at STL out of hold for nitrate and nitrite analysis. Client was contacted and authorized the analyses to be done out of hold.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A. Cascella for
Jeffrey C. Curran
Laboratory Manager

March 21, 2003
Date

QUALITY CONTROL RESULTS

Job Number.: 203236 Report Date.: 03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	5.00000		5.00000						03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	3.00000		3.00000						03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	1.00000		1.00000						03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	0.40000		0.40000						03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	0.10000		0.10000						03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	0.05000 B		0.05000						03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	2.44600		2.50000		98			90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.00300 U								03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	2.45000		2.50000		98		%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.00300 U								03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	1.92100		2.00000	0.00300 U	96			75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	5.63900		5.00000		113		%	85-115	03/15/2003	1611
LCS	15182-015	W03CLCS005	mg/L	5.10300		5.00000		102		%	85-115	03/15/2003	1624
MB	15182-016		mg/L	0.00300 U								03/15/2003	1638
MD	203236-4		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	1.85800		2.00000	0.00300 U	93			75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	2.42400		2.50000		97		%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.00300 U								03/15/2003	1825
MD	203237-3		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	1.85300		2.00000	0.00300 U	93			75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	2.45100		2.50000		98		%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.00300 U								03/15/2003	2053

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	100.00000		100.00000						03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	60.00000		60.00000						03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	20.00000		20.00000						03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	8.00000		8.00000						03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	2.00000		2.00000						03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	1.00000		1.00000						03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	51.04400		50.00000		102			90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.01200 U								03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	51.02800		50.00000		102		%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.03100 B								03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	19.30400		20.00000	0.01200 U	97			75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	8.23300		9.21000		89		%	85-115	03/15/2003	1611
MB	15182-016		mg/L	0.01200 U								03/15/2003	1638
MD	203236-4		mg/L	6.32800			6.32100	0.1			20.0	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	26.46400		20.00000	6.32100	101			75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	52.10900		50.00000		104		%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.01200 U								03/15/2003	1825
MD	203237-3		mg/L	43.88900			43.97600	0.2			20.0	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	62.90400		20.00000	43.97600	95			75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	52.47900		50.00000		105		%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.01500 B								03/15/2003	2053

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000016

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 19, 2003**

FROM: **BERNARD F SPADA III** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOC/SVOC/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG B0423

SAMPLES: 7/Aqueous

FTA-MW-101S	FTA-MW-111S	FTA-WFF14-GW3
FTA-WFF14-GW4	FTA-WFF14-GW5	TB-031303*
WOD-WFF16-GW5		

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0439 consists of one (1) trip blank, one (1) field duplicate, and five (5) environmental aqueous samples. The environmental samples and field duplicate were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only. The field duplicate pair included in this SDG is FTA-MW-101S and FTA-MW-111S.

The samples were collected by Tetra Tech NUS on March 13, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- The semivolatile blank spike was below the percent recovery (and was <10%) quality control criteria for 2,4-dimethylphenol. All results for 2,4-dimethylphenol were rejected (UR).

- The semivolatile matrix spike/matrix spike duplicate (MS/MSD) of sample FTA-WFF14-GW3 had 0% recovery of 3,3'-dichlorobenzidine. The result for 3,3'-dichlorobenzidine was rejected in the un-spiked sample.

Minor

- The following compound was detected in the method blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	1.0 ug/L	10 ug/L

Sample aliquot and dilution factors were taken into consideration when applying the blank action levels. No qualifications were made on this basis. The trip blank was not qualified for method blank contamination.

- The semivolatile blank spike was below the percent recovery quality control criteria for hexachlorocyclopentadiene, 3,3'-dichlorobenzidine, and 3-nitroaniline. All results for the aforementioned compounds were qualified as estimated (UJ). The result for 3,3'-dichlorobenzidine in sample FTA-WFF14-GW3 was not qualified on this basis because it was rejected (UR) for MS recovery non-compliance.

- The semivolatile internal standard 1,4-dichlorobenzene-d4 was below the -50% recovery quality control criteria in sample FTA-MW101S. The results for phenol, bis(2-chloroethyl)ether, 2-chlorophenol, 2-methylphenol, 2,2'-oxybis(1-chloropropane), 4-methylphenol, hexachloroethane, and N-nitroso-di-n-propylamine were qualified as estimated in sample FTA-MW101S.

- The laboratory mistakenly logged in all PCB samples for SVOC analysis. Because of this error the PCB samples were extracted as semivolatiles. The laboratory attempted to exchange the sample extracts into hexane and analyze for PCBs. The recovery of all surrogates analyzed in this fashion was 0% in all samples. The laboratory then extracted the samples outside the analytical holding time and analyzed for PCBs. The second extraction and analyses were designated "RE". The "RE" samples were used for validation and qualified as estimated (UJ) due to holding time non-compliance.

- Positive results reported below the RL and above the MDL were qualified as estimated (J) due to uncertainty near the detection limit.

Notes

The laboratory misnamed several samples in the EDD compared to the COC for the organics fractions. The laboratory re-submitted the EDD with the correct sample names upon request.

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The volatile initial calibration performed on March 23 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for carbon disulfide. No qualifications were made on this basis because the results for carbon disulfide were non-detected.

The volatile continuing calibration performed on March 25 at 08:27 exceeded the 25% (but was <50%) difference quality control criteria for dichlorodifluoromethane. No qualifications were made on this basis because the results for dichlorodifluoromethane were non-detected.

The semivolatile continuing calibration performed on April 12 at 14:32 exceeded the 25% (but was <50%) percent difference quality control criteria for 4-chloroaniline and 3-nitroaniline. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The semivolatile blank spike exceeded the laboratory's percent recovery quality control criteria for 4-chloroaniline and N-nitrosodiphenylamine. No qualifications were made on this basis because the results for the aforementioned compounds were non-detected.

The semivolatile MS/MSD exceeded the percent recovery quality control criteria for several compounds. No qualifications were made on this basis because all results in the un-spiked sample were non-detected.

The semivolatile MS/MSD was below the percent recovery quality control criteria for 2,4-dimethylphenol, hexachlorocyclopentadiene, and 3-nitroaniline. No qualifications were made on this basis because all the

aforementioned compounds were previously qualified for blank spike recovery non-compliance.

The PCB continuing calibration performed on March 31 at 12:30 exceeded the 15% difference quality control criteria for aroclor 1260 on the RTXCLPPEST 2 column. No qualifications were made on this basis because the RTXCLPPEST column was compliant.

Acetone and methylene chloride were reported in the trip blank. No qualifications were made on this basis.

Executive Summary

Laboratory Performance: Qualifications were made based on blank spike recovery non-compliances, internal standard non-compliances, holding time non-compliances, and MS/MSD recovery non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Bernard F Spada III

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Edward Ardelmyer Jr

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-101S
samp_date	3/13/2003
lab_id	B0423-06A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTA-MW-111S

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	8		
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	14		
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	4		
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	4	J	P
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTA-MW-101S
samp_date	3/13/2003
lab_id	B0423-06A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	FTA-MW-111S

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	7		
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	15		
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	6		
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	12		
TOTAL XYLENES	20		
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTA-MW-111S
samp_date	3/13/2003
lab_id	B0423-07A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	8		
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1		
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	15		
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	4		
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-111S
samp_date	3/13/2003
lab_id	B0423-07A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	8		
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	15		
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	6		
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	12		
TOTAL XYLENES	21		
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	FTA-WFF14-GW3
samp_date	3/13/2003
lab_id	B0423-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	FTA-WFF14-GW3
samp_date	3/13/2003
lab_id	B0423-04A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW5
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-05A	lab_id	B0423-05A	lab_id	B0423-03A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	2		
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	2		
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW5
samp_date	3/13/2003
lab_id	B0423-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	19		
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	TB-031303
samp_date	3/13/2003
lab_id	B0423-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	18		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-031303
samp_date	3/13/2003
lab_id	B0423-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	7	B	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	WOD-WFF16-GW5
samp_date	3/13/2003
lab_id	B0423-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	WOD-WFF16-GW5
samp_date	3/13/2003
lab_id	B0423-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1		
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-101S		nsample	FTA-MW-101S		nsample	FTA-MW-111S	
samp_date	3/13/2003		samp_date	3/13/2003		samp_date	3/13/2003	
lab_id	B0423-06E		lab_id	B0423-06E		lab_id	B0423-07E	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/L		units	UG/L		units	UG/L	
Pct_Solids	0		Pct_Solids	0		Pct_Solids	0	
DUP_OF:	FTA-MW-111S		DUP_OF:	FTA-MW-111S		DUP_OF:		

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	UJ	N
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	UJ	N
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	UJ	N
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	E
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	UJ	N
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	UJ	N
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	UJ	N
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	UJ	N
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	UJ	N
PYRENE	5	U	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	1	J	P
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	E
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-111S	nsample	FTA-WFF14-GW3	nsample	FTA-WFF14-GW3
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-07E	lab_id	B0423-04E	lab_id	B0423-04E
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UR	DE
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW5
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-05E	lab_id	B0423-05E	lab_id	B0423-03E
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	E
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	E
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW5	nsample	WOD-WFF16-GW5	nsample	WOD-WFF16-GW5
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-03E	lab_id	B0423-02E	lab_id	B0423-02E
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	UR	E
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	E
3-NITROANILINE	20	UJ	E
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	U	
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	UJ	E
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION: P

nsample	FTA-MW-101S	nsample	FTA-MW-111S	nsample	FTA-WFF14-GW3
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-06E	lab_id	B0423-07E	lab_id	B0423-04E
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:	FTA-MW-111S	DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION: P

nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW5	nsample	WOD-WFF16-GW5
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-05E	lab_id	B0423-03E	lab_id	B0423-02E
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	UJ	H
AROCLOR-1221	1.0	UJ	H
AROCLOR-1232	1.0	UJ	H
AROCLOR-1242	1.0	UJ	H
AROCLOR-1248	1.0	UJ	H
AROCLOR-1254	1.0	UJ	H
AROCLOR-1260	1.0	UJ	H

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5094

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	8	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	12	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	7	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5094

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	15	
95-47-6	o-Xylene	6	
1330-20-7	Xylene (Total)	20	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	4	
95-63-6	1,2,4-Trimethylbenzene	14	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5094

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.24	11	NJ
2.	622-96-8	BENZENE, 1-ETHYL-4-METHYL-	11.59	6	NJ
3.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.30	12	NJ
4.		UNKNOWN	12.55	5	J
5.		UNKNOWN	14.20	8	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
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22.					
23.					
24.					
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26.					
27.					
28.					
29.					
30.					

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5095

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	8	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	12	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	8	

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5095

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	15	
95-47-6	o-Xylene	6	
1330-20-7	Xylene (Total)	21	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	4	
95-63-6	1,2,4-Trimethylbenzene	15	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5095

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.24	12	NJ
2.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.58	6	NJ
3.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.30	12	NJ
4.		UNKNOWN	12.55	6	J
5.		UNKNOWN	14.19	8	J
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
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20.					
21.					
22.					
23.					
24.					
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27.					
28.					
29.					
30.					

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5090

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5090

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5090

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5093

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5093

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5093

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5089

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	2	
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	19	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	2	
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5089

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5089

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5087

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	18	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	7	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5087

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031303

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5087

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5088

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5088

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5088

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3121

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3121

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3121

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.97	7	J
2.	98-85-1	BENZENEMETHANOL, .ALPHA.-MET	9.26	5	NJ
3.	83-33-0	1H-INDEN-1-ONE, 2,3-DIHYDRO-	12.27	5	NJ
4.	610-72-0	BENZOIC ACID, 2,5-DIMETHYL-	12.80	10	NJ
5.		UNKNOWN	13.16	4	J
6.		UNKNOWN	14.52	10	JB
7.		UNKNOWN	18.93	18	J
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3122

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	1	J
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3122

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3122

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	8.97	6	J
2.		UNKNOWN	9.00	6	J
3.	98-85-1	BENZENEMETHANOL, .ALPHA.-MET	9.27	6	NJ
4.		UNKNOWN	10.57	4	J
5.		UNKNOWN	11.57	4	J
6.	83-33-0	1H-INDEN-1-ONE, 2,3-DIHYDRO-	12.26	6	NJ
7.		UNKNOWN	12.81	13	J
8.		UNKNOWN	12.86	5	J
9.		UNKNOWN	13.17	5	J
10.		UNKNOWN	13.94	5	J
11.		UNKNOWN	14.53	8	JB
12.		UNKNOWN	15.19	6	J
13.		UNKNOWN	16.75	5	J
14.	314-40-9	BROMACIL	18.94	20	NJ
15.					
16.					
17.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3117

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3117

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3117

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	498-07-7	1,6-ANHYDRO-.BETA.-D-GLUCOPY	14.59	40	NJ
2.					
3.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3120

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3120

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3120

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	498-07-7	1,6-ANHYDRO-.BETA.-D-GLUCOPY	14.52	15	NJ
2.					
3.					
4.					
5.					
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7.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3116

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3116

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3116

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	9.61	4	J
2.	498-07-7	1,6-ANHYDRO-.BETA.-D-GLUCOPY	14.59	41	NJ
3.					
4.					
5.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3115

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3115

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

WFF16GW5

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3115

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.35	5	JB
2.	501-52-0	BENZENEPROPANOIC ACID	12.70	8	NJ
3.	498-07-7	1,6-ANHYDRO-.BETA.-D-GLUCOPY	14.59	34	NJ
4.					
5.					
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FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0587F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW101SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0245F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0588F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

MW111SRE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0246F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF14GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0585F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
WFF14GW3RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-04ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0243F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF14GW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0586F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF14GW4RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-05ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0244F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF14GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0584F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF14GW5RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-03ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0242F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW5

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0583F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) CONT Date Extracted:03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW5RE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-02ERE

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0241F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/14/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Appendix C

Support Documentation

FIELD DUPLICATE PRECISION

ANALYTE	FTA-MW-101S	FTA-MW-111S	RPD	DIFFERENCE
1,1,1-Trichloroethane	8	8	0.00	0
1,1-Dichloroethane	1U	1	#VALUE!	#VALUE!
1,2,4-Trimethylbenzene	14	15	6.90	1
1,3,5-Trimethylbenzene	4	4	0.00	0
Acetone	4	5U	#VALUE!	#VALUE!
Ethylbenzene	7	8	13.33	1
m+p-Xylenes	15	15	0.00	0
o-xylene	6	6	0.00	0
Toluene	12	12	0.00	0
total Xylene	20	21	4.88	1
2-Methylphenol	5U	1	#VALUE!	#VALUE!

B0423

HOLDING TIME

05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTA-MW-101S	203237-005		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004	NORMAL	B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
UG/L	FTA-MW-101S	B0423-06C	NORMAL	B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-111S	B0423-07C	NORMAL	B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW5	B0423-03C		B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
%	LCSW	0317LCSW	LCS	B0423	HG	/ /	03/17/03	03/18/03	0	1	0
UG/L	PBW	0317PBW	M_BLANK	B0423	HG	/ /	03/17/03	03/18/03	0	1	0
UG/L	WOD-WFF16-GW5	B0423-02C		B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-101SF	B0423-12A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-111SF	B0423-13A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW3F	B0423-10A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW4F	B0423-11A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-101S	B0423-06C	NORMAL	B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-111S	B0423-07C	NORMAL	B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-WFF14-GW5	B0423-03C		B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
%	LCSW	0317LCSW	LCS	B0423	M	/ /	03/17/03	03/19/03	0	2	0
UG/L	PBW	0317PBW	M_BLANK	B0423	M	/ /	03/17/03	03/19/03	0	2	0
UG/L	WOD-WFF16-GW5	B0423-02C		B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-101SF	B0423-12A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-111SF	B0423-13A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTA-WFF14-GW3F	B0423-10A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-WFF14-GW4F	B0423-11A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
%	FTA-MW-101S	B0423-06E	NORMAL	B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
UG/L	FTA-MW-111S	B0423-07E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-WFF14-GW4	B0423-05E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-WFF14-GW5	B0423-03E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	SBLK2L	MB-6211	M_BLANK	B0423	OS	/ /	03/19/03	04/12/03	0	24	0
%	SBLK2LLCS	LCS-6211	LCS	B0423	OS	/ /	03/19/03	04/12/03	0	24	0
%	WOD-WFF16-GW5	B0423-02E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-MW-101S	B0423-06A	NORMAL	B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-MW-101SF	B0423-05A	NORMAL	B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-MW-111S	B0423-07A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-WFF14-GW5	B0423-03A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	VBLK5U	V5B0325A	M_BLANK	B0423	OV	/ /	03/25/03	03/25/03	0	0	0
%	VBLK5ULCS	V5L0325A	LCS	B0423	OV	/ /	03/25/03	03/25/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-WFF16-GW5	B0423-02A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	BBLK1A	MB-6211	M_BLANK	B0423	PCB	/ /	03/19/03	04/15/03	0	27	0
%	BBLK1K	MB-6109	M_BLANK	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	BBLK1KLCS	LCS-6208	LCS	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	BBLK1KLCSD	LCSD-6208	LCSD	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	FTA-MW-101S	B0423-06E	NORMAL	B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-MW-101SRE	B0423-06ERE	NORMAL	B0423	PCB	03/13/03	03/25/03	03/31/03	12	6	18
%	FTA-MW-111S	B0423-07E	NORMAL	B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-MW-111SRE	B0423-07ERE	NORMAL	B0423	PCB	03/13/03	03/25/03	03/31/03	12	6	18
%	FTA-WFF14-GW4	B0423-05E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-WFF14-GW5	B0423-03E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	WOD-WFF16-GW5	B0423-02E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-101S	B0423-06B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-MW-111S	B0423-07B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-MW-111SF	B0423-05B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-WFF14-GW5	B0423-03B		B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
%	LCS-6239	LCS-6239	LCS	B0423	TOC	/ /	03/20/03	03/20/03	0	0	0
MG/L	MB-6239	MB-6239	M_BLANK	B0423	TOC	/ /	03/20/03	03/20/03	0	0	0
MG/L	WOD-WFF16-GW5	B0423-02B		B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

April 22, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0423

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0423

Mitkem Project ID: B0423

April 22, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 13, 2003, and received at Mitkem on March 14, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF14GW3. Spike recoveries and replicate RPDs were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF14GW3. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate and no recovery of 3,3'-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dimethylphenol.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of no surrogate recovery in method blank BBLK1A and associated samples. Method blank BBLK1A and associated samples were semivolatile sample extracts that were exchanged into hexane and analyzed for PCBs.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to login error, samples WFF16GW5, WFF14GW3, WFF14GW5, WFF14GW4, MW101S and MW111S were logged in for aqueous semivolatile analysis and soil PCB analysis. The samples were extracted for semivolatile analysis. The samples were not extracted for PCBs as they were logged in as soil samples, therefore a longer holding time. The semivolatile extracts were exchanged into hexane and analyzed for PCB. The samples were extracted outside of holding time for PCB and designated as "RE" samples. Both sets of data are reported. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF14GW3. Spike recoveries were within the QC limits with the exception of antimony. Form 1's are flagged with an "N" flag for antimony. A post digest spike was performed with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF14GW3. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample WFF14GW4. Spike recovery was within the QC limits. Matrix spike was performed on WFF14GW4 instead of WFF14GW3 due to limited sample volume.

Matrix duplicate: matrix duplicate was performed on sample WFF14GW3. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/22/03

MITKEM CORPORATION
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Warwick, Rhode Island 02886-1755
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email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0423
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: | CLIENT PROJECT #: | CLIENT P.O.#:

REQUESTED ANALYSES: 40ml VOA Vial HCl Low Conc 624 TCL VOC 1,3,5 TNB; 40ml VOA Vial HCl TCL VOC MTBE TOC; Filtered Amber Glass 1 Liter Amber Glass TCL SVOC; TCL PCB; 500ml Poly HNO3 Chloride, Sulfate, Nitrate, Nitrite; 500ml Poly HNO3 TAL Metals; 500ml Poly HNO3 Dissolved Metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	COMMENTS
TB-031303	3/13/03 0700		X	X			01	2	Trip Blank
WOO-WFF16-GW5	3/13/03 0750		X	X			02	8	
FTA-WFF14-GW5	3/13/03 1005		X	X			03	8	
FTA-WFF14-GW3	3/13/03 1205		X	X			04	20	DO MS/MSD
FTA-WFF14-GW4	3/13/03 1445		X	X			05	8	
FTA-MW-101S	3/13/03 1550		X	X			06	8	
FTA-MW-111S	3/13/03 0850		X	X			07	8	
FTOO-WFF16-GW5F	3/13/03 0750		X	X			08	1	
FTA-WFF14-GW5F	3/13/03 1005		X	X			09	1	
FTA-WFF14-GW3F	3/13/03 1205		X	X			10	3	DO MS/MSD
FTA-WFF14-GW4F	3/13/03 1445		X	X			11	1	
FTA-MW-101SF	3/13/03 1550		X	X			12	1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Meyer	3/13/03 1930	[signature]	3/14/03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Laboratory Provided Trip Blank For Sampling. Samples Shipped Under Airbill NO 8286 8464 5072

COOLER TEMP: 3°

000011

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
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CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0423
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WIFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 500 ml poly HNO3 Dissolved Metals	COMMENTS
FTA-MW-111S F	3/13/03 / 0850		x	x			13		1	
	/									
	/									
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	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Meyer	3/13/03 / 1830	[signature]	3/14-03 / 0900	shipped via Federal Express Airbill No 828 6 8464 5072	3C
		/		/		
		/		/		

000012

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID: V5E5000 BFB Injection Date: 03/23/03

Instrument ID: V5 BFB Injection Time: 1009

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.1
75	30.0 - 60.0% of mass 95	41.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	76.9
175	5.0 - 9.0% of mass 174	5.4 (7.1)1
176	95.0 - 101.0% of mass 174	73.8 (95.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505R	V5S0323A	V5E5001	03/23/03	1028
02	VSTD0055R	V5S0323B	V5E5002	03/23/03	1056
03	VSTD2005R	V5S0323D	V5E5004	03/23/03	1207
04	VSTD1005R	V5S0323E	V5E5005	03/23/03	1235
05	VSTD0205R	V5S0323F	V5E5006	03/23/03	1303
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.296	0.242	0.255	0.246	0.256	0.259	8.2
Chloromethane	*	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
Vinyl Chloride		0.449	0.346	0.362	0.357	0.365	0.376	11.1
Bromomethane		0.290	0.233	0.232	0.216	0.188	0.232	16.0
Chloroethane		0.176	0.147	0.209	0.159	0.140	0.166	16.4
Trichlorofluoromethane		0.355	0.309	0.360	0.344	0.341	0.342	5.8
1,1-Dichloroethene		0.278	0.252	0.294	0.278	0.274	0.275	5.5
Acetone		0.073	0.055	0.054	0.049	0.046	0.055	18.6
Carbon Disulfide		1.029	0.531	0.995	0.547	0.784	0.777	30.5
Methylene Chloride		0.326	0.316	0.320	0.329	0.331	0.324	2.0
trans-1,2-Dichloroethene		0.292	0.286	0.306	0.321	0.322	0.305	5.3
Methyl tert-butyl ether		0.759	0.652	0.604	0.645	0.632	0.658	9.0
1,1-Dichloroethane	*	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
2-Butanone		0.140	0.118	0.103	0.113	0.106	0.116	12.5
cis-1,2-Dichloroethene		0.308	0.293	0.312	0.328	0.331	0.314	4.9
Chloroform		0.460	0.434	0.463	0.480	0.474	0.462	3.8
1,1,1-Trichloroethane		0.305	0.298	0.315	0.321	0.318	0.311	3.1
Carbon Tetrachloride		0.243	0.239	0.264	0.280	0.279	0.261	7.4
1,2-Dichloroethane		0.306	0.294	0.295	0.305	0.295	0.299	2.0
Benzene		1.079	1.026	1.063	1.118	1.110	1.079	3.5
Trichloroethene		0.276	0.261	0.278	0.294	0.300	0.282	5.5
1,2-Dichloropropane		0.284	0.276	0.283	0.297	0.289	0.286	2.8
Bromodichloromethane		0.323	0.316	0.335	0.353	0.358	0.337	5.5
cis-1,3-Dichloropropene		0.371	0.382	0.426	0.441	0.453	0.415	8.7
4-Methyl-2-pentanone		0.260	0.230	0.211	0.229	0.236	0.233	7.6
Toluene		1.134	1.074	1.127	1.170	1.168	1.135	3.5
trans-1,3-Dichloropropene		0.288	0.314	0.360	0.367	0.381	0.342	11.5
1,1,2-Trichloroethane		0.228	0.229	0.227	0.244	0.249	0.235	4.5
Tetrachloroethene		0.315	0.302	0.313	0.335	0.338	0.321	4.8
2-Hexanone		0.239	0.235	0.193	0.227	0.218	0.222	8.2
Dibromochloromethane		0.322	0.334	0.360	0.383	0.389	0.358	8.2
1,2-Dibromoethane		0.358	0.360	0.350	0.383	0.381	0.366	4.1
Chlorobenzene	*	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
Ethylbenzene		0.536	0.520	0.523	0.564	0.566	0.542	4.0
m,p-Xylene		0.669	0.643	0.655	0.702	0.677	0.669	3.4
o-Xylene		0.648	0.636	0.646	0.688	0.678	0.659	3.5
Xylene (Total)		0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		1.017	1.059	1.131	1.180	1.148	1.107	6.1
Bromoform	*	0.174	0.212	0.242	0.260	0.274	0.232	17.2*
Isopropylbenzene		1.581	1.531	1.567	1.699	1.696	1.615	4.8
1,1,2,2-Tetrachloroethane	*	1.016	0.945	0.810	0.926	0.922	0.924	8.0*
1,3,5-Trimethylbenzene		2.916	2.614	2.610	2.755	2.702	2.719	4.6
1,2,4-Trimethylbenzene		2.806	2.620	2.628	2.778	2.736	2.714	3.1
1,3-Dichlorobenzene		1.584	1.511	1.542	1.638	1.633	1.582	3.5
1,4-Dichlorobenzene		1.677	1.564	1.560	1.652	1.659	1.622	3.5
1,2-Dichlorobenzene		1.436	1.430	1.430	1.538	1.522	1.471	3.7
1,2-Dibromo-3-chloropropane		0.084	0.092	0.085	0.107	0.110	0.096	12.9
1,2,4-Trichlorobenzene		0.569	0.686	0.659	0.831	0.883	0.726	17.8
1,1,2-Trichlo-1,2,2-trifluor		0.249	0.220	0.214	0.195	0.186	0.213	11.5
Methyl Acetate		0.254	0.222	0.182	0.204	0.196	0.212	13.2
Cyclohexane		0.505	0.421	0.444	0.438	0.432	0.448	7.4
Methylcyclohexane		0.494	0.409	0.417	0.425	0.416	0.432	8.1
Dibromofluoromethane		0.268	0.252	0.268	0.284	0.284	0.271	5.0
1,2-Dichloroethane-d4		0.058	0.057	0.060	0.062	0.061	0.060	3.9
Toluene-d8		1.356	1.222	1.253	1.326	1.298	1.291	4.2
Bromofluorobenzene		0.548	0.482	0.492	0.531	0.525	0.516	5.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5U	95	94	100	90	0
02	V5ULCS	101	99	103	99	0
03	TB-031303	98	99	104	90	0
04	WFF16GW5	98	100	104	91	0
05	WFF14GW5	98	100	105	91	0
06	WFF14GW3	98	100	106	92	0
07	WFF14GW3MS	100	100	99	98	0
08	WFF14GW3MSD	98	94	98	96	0
09	WFF14GW4	98	97	103	90	0
10	MW101S	98	97	102	94	0
11	MW111S	98	96	104	94	0
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30						

		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER (BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID: V5E5079 BFB Injection Date: 03/25/03

Instrument ID: V5 BFB Injection Time: 0759

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	15.8
75	30.0 - 60.0% of mass 95	40.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	80.9
175	5.0 - 9.0% of mass 174	5.6 (6.9)1
176	95.0 - 101.0% of mass 174	78.8 (97.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505U	V5S0325A	V5E5080	03/25/03	0827
02	VBLK5U	V5B0325A	V5E5081	03/25/03	0855
03	V5ULCS	V5L0325A	V5E5083	03/25/03	0951
04	TB-031303	B0423-01A	V5E5087	03/25/03	1207
05	WFF16GW5	B0423-02A	V5E5088	03/25/03	1235
06	WFF14GW5	B0423-03A	V5E5089	03/25/03	1303
07	WFF14GW3	B0423-04A	V5E5090	03/25/03	1331
08	WFF14GW3MS	B0423-04AMS	V5E5091	03/25/03	1359
09	WFF14GW3MSD	B0423-04AMSD	V5E5092	03/25/03	1427
10	WFF14GW4	B0423-05A	V5E5093	03/25/03	1455
11	MW101S	B0423-06A	V5E5094	03/25/03	1523
12	MW111S	B0423-07A	V5E5095	03/25/03	1551
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: V5 Calibration Date: 03/25/03 Time: 0827

Lab File ID: V5E5080 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.259	0.181	0.01	30.1	20.0	<-
Chloromethane	0.410	0.385	0.1	6.1	20.0	
Vinyl Chloride	0.376	0.357	0.01	5.0	20.0	
Bromomethane	0.232	0.240	0.01	3.4	20.0	
Chloroethane	0.166	0.188	0.01	13.2	20.0	
Trichlorofluoromethane	0.342	0.312	0.01	8.8	20.0	
1,1-Dichloroethene	0.275	0.296	0.01	7.6	20.0	
Acetone	0.055	0.057	0.01	3.6	20.0	
Carbon Disulfide	0.777	0.791	0.01	1.8	20.0	
Methylene Chloride	0.324	0.313	0.01	3.4	20.0	
trans-1,2-Dichloroethene	0.305	0.303	0.01	0.6	20.0	
Methyl tert-butyl ether	0.658	0.551	0.01	16.3	20.0	
1,1-Dichloroethane	0.492	0.503	0.1	2.2	20.0	
2-Butanone	0.116	0.094	0.01	19.0	20.0	
cis-1,2-Dichloroethene	0.314	0.309	0.01	1.6	20.0	
Chloroform	0.462	0.466	0.01	0.9	20.0	
1,1,1-Trichloroethane	0.311	0.325	0.01	4.5	20.0	
Carbon Tetrachloride	0.261	0.271	0.01	3.8	20.0	
1,2-Dichloroethane	0.299	0.308	0.01	3.0	20.0	
Benzene	1.079	1.092	0.01	1.2	20.0	
Trichloroethene	0.282	0.273	0.01	3.2	20.0	
1,2-Dichloropropane	0.286	0.296	0.01	3.5	20.0	
Bromodichloromethane	0.337	0.338	0.01	0.3	20.0	
cis-1,3-Dichloropropene	0.415	0.400	0.01	3.6	20.0	
4-Methyl-2-pentanone	0.233	0.186	0.01	20.2	20.0	<-
Toluene	1.135	1.137	0.01	0.2	20.0	
trans-1,3-Dichloropropene	0.342	0.323	0.01	5.6	20.0	
1,1,2-Trichloroethane	0.235	0.224	0.01	4.7	20.0	
Tetrachloroethene	0.321	0.305	0.01	5.0	20.0	
2-Hexanone	0.222	0.173	0.01	22.1	20.0	<-
Dibromochloromethane	0.358	0.343	0.01	4.2	20.0	
1,2-Dibromoethane	0.366	0.344	0.01	6.0	20.0	
Chlorobenzene	1.059	1.030	0.3	2.7	20.0	
Ethylbenzene	0.542	0.525	0.01	3.1	20.0	
m,p-Xylene	0.669	0.655	0.01	2.1	20.0	
o-Xylene	0.659	0.652	0.01	1.1	20.0	
Xylene (Total)	0.666	0.654	0.01	1.8	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: V5 Calibration Date: 03/25/03 Time: 0827

Lab File ID: V5E5080 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.107	1.117	0.01	0.9	20.0
Bromoform	0.232	0.207	0.1	10.8	20.0
Isopropylbenzene	1.615	1.578	0.01	2.3	20.0
1,1,2,2-Tetrachloroethane	0.924	0.840	0.3	9.1	20.0
1,3,5-Trimethylbenzene	2.719	2.708	0.01	0.4	20.0
1,2,4-Trimethylbenzene	2.714	2.695	0.01	0.7	20.0
1,3-Dichlorobenzene	1.582	1.562	0.01	1.3	20.0
1,4-Dichlorobenzene	1.622	1.582	0.01	2.5	20.0
1,2-Dichlorobenzene	1.471	1.436	0.01	2.4	20.0
1,2-Dibromo-3-chloropropane	0.096	0.082	0.01	14.6	20.0
1,2,4-Trichlorobenzene	0.726	0.612	0.01	15.7	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.213	0.180	0.01	15.5	20.0
Methyl Acetate	0.212	0.204	0.01	3.8	20.0
Cyclohexane	0.448	0.388	0.01	13.4	20.0
Methylcyclohexane	0.432	0.347	0.01	19.7	20.0
Dibromofluoromethane	0.271	0.267	0.01	1.5	20.0
1,2-Dichloroethane-d4	0.060	0.057	0.01	5.0	20.0
Toluene-d8	1.291	1.268	0.01	1.8	20.0
Bromofluorobenzene	0.516	0.489	0.01	5.2	20.0

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5U

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: V5B0325A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5081

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5U

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: V5B0325A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5081

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5U

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: V5B0325A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5081

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
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25.					
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27.					
28.					
29.					
30.					

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: V5ULCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		38	76	48-135
Chloromethane	50		49	98	60-118
Vinyl Chloride	50		50	100	65-113
Bromomethane	50		54	108	73-122
Chloroethane	50		57	114	72-118
Trichlorofluoromethane	50		48	96	68-129
1,1-Dichloroethene	50		54	108	67-121
Acetone	50		51	102	38-161
Carbon Disulfide	50		54	108	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		45	90	75-123
1,1-Dichloroethane	50		52	104	83-116
2-Butanone	50		44	88	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		54	108	81-122
Carbon Tetrachloride	50		53	106	79-125
1,2-Dichloroethane	50		52	104	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		49	98	77-121
1,2-Dichloropropane	50		53	106	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		49	98	78-119
4-Methyl-2-pentanone	50		43	86	57-138
Toluene	50		51	102	81-121
trans-1,3-Dichloroprope	50		48	96	85-118
1,1,2-Trichloroethane	50		50	100	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: V5ULCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		49	98	73-121
2-Hexanone	50		43	86	53-145
Dibromochloromethane	50		49	98	80-124
1,2-Dibromoethane	50		48	96	80-124
Chlorobenzene	50		51	102	82-118
Ethylbenzene	50		50	100	80-122
Xylene (Total)	150		150	100	81-121
Styrene	50		52	104	77-128
Bromoform	50		46	92	77-130
Isopropylbenzene	50		50	100	58-148
1,1,2,2-Tetrachloroetha	50		47	94	76-125
1,3,5-Trimethylbenzene	50		51	102	76-116
1,2,4-Trimethylbenzene	50		51	102	77-117
1,3-Dichlorobenzene	50		50	100	80-116
1,4-Dichlorobenzene	50		50	100	80-114
1,2-Dichlorobenzene	50		51	102	81-116
1,2-Dibromo-3-chloropro	50		45	90	71-126
1,2,4-Trichlorobenzene	50		44	88	67-114
1,1,2-Trichlo-1,2,2-tri	50		46	92	70-130
Methyl Acetate	50		52	104	70-130
Cyclohexane	50		48	96	70-130
Methylcyclohexane	50		44	88	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 50 outside limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50	0.0	43	86	48-135
Chloromethane	50	0.0	44	88	60-118
Vinyl Chloride	50	0.0	46	92	65-113
Bromomethane	50	0.0	48	96	73-122
Chloroethane	50	0.0	50	100	72-118
Trichlorofluoromethane	50	0.0	51	102	68-129
1,1-Dichloroethene	50	0.0	52	104	67-121
Acetone	50	0.0	48	96	38-161
Carbon Disulfide	50	0.0	40	80	53-137
Methylene Chloride	50	0.0	51	102	59-132
trans-1,2-Dichloroethen	50	0.0	52	104	71-124
Methyl tert-butyl ether	50	0.0	47	94	75-123
1,1-Dichloroethane	50	0.0	53	106	83-116
2-Butanone	50	0.0	50	100	64-139
cis-1,2-Dichloroethene	50	0.0	52	104	83-120
Chloroform	50	0.0	52	104	89-118
1,1,1-Trichloroethane	50	0.0	54	108	81-122
Carbon Tetrachloride	50	0.0	56	112	79-125
1,2-Dichloroethane	50	0.0	53	106	83-123
Benzene	50	0.0	52	104	81-120
Trichloroethene	50	0.0	52	104	77-121
1,2-Dichloropropane	50	0.0	53	106	81-116
Bromodichloromethane	50	0.0	52	104	90-114
cis-1,3-Dichloropropene	50	0.0	52	104	78-119
4-Methyl-2-pentanone	50	0.0	49	98	57-138
Toluene	50	0.0	52	104	81-121
trans-1,3-Dichloroprope	50	0.0	53	106	85-118
1,1,2-Trichloroethane	50	0.0	51	102	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Tetrachloroethene	50	0.0	58	116	73-121
2-Hexanone	50	0.0	48	96	53-145
Dibromochloromethane	50	0.0	51	102	80-124
1,2-Dibromoethane	50	0.0	50	100	80-124
Chlorobenzene	50	0.0	51	102	82-118
Ethylbenzene	50	0.0	50	100	80-122
Xylene (Total)	150	0.0	160	107	81-121
Styrene	50	0.0	50	100	77-128
Bromoform	50	0.0	50	100	77-130
Isopropylbenzene	50	0.0	50	100	58-148
1,1,2,2-Tetrachloroetha	50	0.0	48	96	76-125
1,3,5-Trimethylbenzene	50	0.0	49	98	76-116
1,2,4-Trimethylbenzene	50	0.0	49	98	77-117
1,3-Dichlorobenzene	50	0.0	50	100	80-116
1,4-Dichlorobenzene	50	0.0	50	100	80-114
1,2-Dichlorobenzene	50	0.0	52	104	81-116
1,2-Dibromo-3-chloropro	50	0.0	52	104	71-126
1,2,4-Trichlorobenzene	50	0.0	51	102	67-114
1,1,2-Trichlo-1,2,2-tri	50	0.0	49	98	70-130
Methyl Acetate	50	0.0	50	100	70-130
Cyclohexane	50	0.0	47	94	70-130
Methylcyclohexane	50	0.0	49	98	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	50	40	80	7	40	48-135
Chloromethane	50	52	104	17	40	60-118
Vinyl Chloride	50	51	102	10	40	65-113
Bromomethane	50	54	108	12	40	73-122
Chloroethane	50	59	118	16	40	72-118
Trichlorofluoromethane	50	51	102	0	40	68-129
1,1-Dichloroethene	50	57	114	9	40	67-121
Acetone	50	48	96	0	40	38-161
Carbon Disulfide	50	44	88	10	40	53-137
Methylene Chloride	50	50	100	2	40	59-132
trans-1,2-Dichloroethen	50	52	104	0	40	71-124
Methyl tert-butyl ether	50	42	84	11	40	75-123
1,1-Dichloroethane	50	52	104	2	40	83-116
2-Butanone	50	41	82	20	40	64-139
cis-1,2-Dichloroethene	50	50	100	4	40	83-120
Chloroform	50	51	102	2	40	89-118
1,1,1-Trichloroethane	50	54	108	0	40	81-122
Carbon Tetrachloride	50	54	108	4	40	79-125
1,2-Dichloroethane	50	51	102	4	40	83-123
Benzene	50	51	102	2	40	81-120
Trichloroethene	50	50	100	4	40	77-121
1,2-Dichloropropane	50	51	102	4	40	81-116
Bromodichloromethane	50	51	102	2	40	90-114
cis-1,3-Dichloropropene	50	51	102	2	40	78-119
4-Methyl-2-pentanone	50	38	76	25	40	57-138
Toluene	50	51	102	2	40	81-121
trans-1,3-Dichloroprope	50	51	102	4	40	85-118
1,1,2-Trichloroethane	50	48	96	6	40	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	50	57	114	2	40	73-121
2-Hexanone	50	38	76	23	40	53-145
Dibromochloromethane	50	48	96	6	40	80-124
1,2-Dibromoethane	50	46	92	8	40	80-124
Chlorobenzene	50	50	100	2	40	82-118
Ethylbenzene	50	49	98	2	40	80-122
Xylene (Total)	150	150	100	7	40	81-121
Styrene	50	50	100	0	40	77-128
Bromoform	50	46	92	8	40	77-130
Isopropylbenzene	50	51	102	2	40	58-148
1,1,2,2-Tetrachloroetha	50	44	88	9	40	76-125
1,3,5-Trimethylbenzene	50	51	102	4	40	76-116
1,2,4-Trimethylbenzene	50	51	102	4	40	77-117
1,3-Dichlorobenzene	50	50	100	0	40	80-116
1,4-Dichlorobenzene	50	50	100	0	40	80-114
1,2-Dichlorobenzene	50	49	98	6	40	81-116
1,2-Dibromo-3-chloropro	50	41	82	24	40	71-126
1,2,4-Trichlorobenzene	50	43	86	17	40	67-114
1,1,2-Trichlo-1,2,2-tri	50	54	108	10	40	70-130
Methyl Acetate	50	42	84	17	40	70-130
Cyclohexane	50	50	100	6	40	70-130
Methylcyclohexane	50	48	96	2	40	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 50 outside limits
Spike Recovery: 0 out of 100 outside limits

COMMENTS: _____

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID (Standard): V5E5080 Date Analyzed: 03/25/03

Instrument ID: V5 Time Analyzed: 0827

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

		IS1 AREA #	RT #	IS2 (CBZ) AREA #	RT #	IS3 (DCB) AREA #	RT #
	12 HOUR STD	1553772	6.26	1100658	9.48	543435	12.21
	UPPER LIMIT	3107544	6.76	2201316	9.98	1086870	12.71
	LOWER LIMIT	776886	5.76	550329	8.98	271718	11.71
	EPA SAMPLE NO.						
01	VBLK5U	1550657	6.26	1076605	9.47	412509	12.22
02	V5ULCS	1475846	6.26	1034634	9.47	519415	12.21
03	TB-031303	1304475	6.26	900024	9.47	342924	12.22
04	WFF16GW5	1275715	6.26	888990	9.48	346500	12.21
05	WFF14GW5	1320987	6.26	908473	9.48	344076	12.22
06	WFF14GW3	1265768	6.27	871550	9.48	338449	12.21
07	WFF14GW3MS	1285381	6.26	915492	9.48	483378	12.21
08	WFF14GW3MSD	1457487	6.26	1035264	9.47	521862	12.21
09	WFF14GW4	1322191	6.26	918939	9.48	340263	12.21
10	MW101S	1332052	6.26	929454	9.48	389286	12.22
11	MW111S	1361458	6.26	942328	9.48	393010	12.22
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740 SDG-B0423	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/9/03

Sample FTA-MW-101S

m+p-Xylenes = 15 ug/L

$$m+p\text{-Xylenes} = \frac{(186888)(50\ ng/L)}{(929454)(0.669)} = 15.03\ ug/L$$

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5094

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	1	U
75-15-0	Carbon Disulfide	4	J
75-09-2	Methylene Chloride	1	U
156-60-5	trans-1,2-Dichloroethene	2	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	1	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	8	
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	1	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	12	
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	1	U
124-48-1	Dibromochloromethane	5	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
		7	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5094

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	15	
95-47-6	o-Xylene	6	
1330-20-7	Xylene (Total)	20	
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	4	
95-63-6	1,2,4-Trimethylbenzene	14	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030325.B\V5E5094.D
Report Date: 01-Apr-2003 09:26

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030325.B\V5E5094.D
Lab Smp Id: B0423-06A Client Smp ID: MW101S
Inj Date : 25-MAR-2003 15:23
Operator : TRA Inst ID: v5.i
Smp Info : TETRA,B0423-06A,MW101S,V5B0325A,,B0423
Misc Info : 14-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030325.B\v58260.m
Meth Date : 01-Apr-2003 09:11 mtl Quant Type: ISTD
Cal Date : 23-MAR-2003 13:03 Cal File: V5E5006.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET5

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
	9 Acetone	43	3.430	3.429	(0.548)	5723	3.86661	4(a)
$	30 Dibromofluoromethane	113	5.587	5.586	(0.893)	354199	49.0414	49
	31 1,1,1-Trichloroethane	97	5.626	5.625	(0.899)	68470	8.25342	8
$	35 1,2-Dichloroethane-d4	102	5.922	5.921	(0.946)	76873	48.3056	48
*	38 Fluorobenzene	96	6.257	6.256	(1.000)	1332052	50.0000	
$	47 Toluene-d8	98	7.892	7.891	(0.833)	1230573	51.2842	51
	48 Toluene	91	7.961	7.960	(1.272)	356388	11.7901	12
*	57 Chlorobenzene-d5	117	9.477	9.476	(1.000)	929454	50.0000	
	60 Ethylbenzene	106	9.625	9.624	(1.016)	73987	7.34733	7
	61 m,p-Xylene	106	9.753	9.762	(1.029)	186888	15.0211	15
	62 o-Xylene	106	10.216	10.215	(1.078)	68161	5.56279	6
$	68 Bromofluorobenzene	95	10.827	10.826	(1.142)	451177	47.0429	47
	74 1,3,5-Trimethylbenzene	105	11.349	11.348	(0.929)	94085	4.44379	4
	77 1,2,4-Trimethylbenzene	105	11.792	11.791	(0.965)	302722	14.3280	14
*	81 1,4-Dichlorobenzene-d4	152	12.216	12.215	(1.000)	389286	50.0000	
M	63 Xylene (Total)	106				255049	20.5839	20

FLR 4/4/03

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.296	0.242	0.255	0.246	0.256	0.259	8.2
Chloromethane	*	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
Vinyl Chloride		0.449	0.346	0.362	0.357	0.365	0.376	11.1
Bromomethane		0.290	0.233	0.232	0.216	0.188	0.232	16.0
Chloroethane		0.176	0.147	0.209	0.159	0.140	0.166	16.4
Trichlorofluoromethane		0.355	0.309	0.360	0.344	0.341	0.342	5.8
1,1-Dichloroethene		0.278	0.252	0.294	0.278	0.274	0.275	5.5
Acetone		0.073	0.055	0.054	0.049	0.046	0.055	18.6
Carbon Disulfide		1.029	0.531	0.995	0.547	0.784	0.777	30.5
Methylene Chloride		0.326	0.316	0.320	0.329	0.331	0.324	2.0
trans-1,2-Dichloroethene		0.292	0.286	0.306	0.321	0.322	0.305	5.3
Methyl tert-butyl ether		0.759	0.652	0.604	0.645	0.632	0.658	9.0
1,1-Dichloroethane	*	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
2-Butanone		0.140	0.118	0.103	0.113	0.106	0.116	12.5
cis-1,2-Dichloroethene		0.308	0.293	0.312	0.328	0.331	0.314	4.9
Chloroform		0.460	0.434	0.463	0.480	0.474	0.462	3.8
1,1,1-Trichloroethane		0.305	0.298	0.315	0.321	0.318	0.311	3.1
Carbon Tetrachloride		0.243	0.239	0.264	0.280	0.279	0.261	7.4
1,2-Dichloroethane		0.306	0.294	0.295	0.305	0.295	0.299	2.0
Benzene		1.079	1.026	1.063	1.118	1.110	1.079	3.5
Trichloroethene		0.276	0.261	0.278	0.294	0.300	0.282	5.5
1,2-Dichloropropane		0.284	0.276	0.283	0.297	0.289	0.286	2.8
Bromodichloromethane		0.323	0.316	0.335	0.353	0.358	0.337	5.5
cis-1,3-Dichloropropene		0.371	0.382	0.426	0.441	0.453	0.415	8.7
4-Methyl-2-pentanone		0.260	0.230	0.211	0.229	0.236	0.233	7.6
Toluene		1.134	1.074	1.127	1.170	1.168	1.135	3.5
trans-1,3-Dichloropropene		0.288	0.314	0.360	0.367	0.381	0.342	11.5
1,1,2-Trichloroethane		0.228	0.229	0.227	0.244	0.249	0.235	4.5
Tetrachloroethene		0.315	0.302	0.313	0.335	0.338	0.321	4.8
2-Hexanone		0.239	0.235	0.193	0.227	0.218	0.222	8.2
Dibromochloromethane		0.322	0.334	0.360	0.383	0.389	0.358	8.2
1,2-Dibromoethane		0.358	0.360	0.350	0.383	0.381	0.366	4.1
Chlorobenzene	*	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
Ethylbenzene		0.536	0.520	0.523	0.564	0.566	0.542	4.0
m,p-Xylene		0.669	0.643	0.655	0.702	0.677	0.669	3.4
o-Xylene		0.648	0.636	0.646	0.688	0.678	0.659	3.5
Xylene (Total)		0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID: S2D3081 DFTPP Injection Date: 04/11/03

Instrument ID: S2 DFTPP Injection Time: 0856

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	44.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	60.6
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	50.0
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.6
275	10.0 - 30.0% of mass 198	18.7
365	Greater than 1.0% of mass 198	1.87
441	Present, but less than mass 443	6.9
442	40.0 - 99.9% of mass 198	43.3
443	17.0 - 23.0% of mass 442	8.5 (19.7)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502D	SS0411A	S2D3082	04/11/03	0915
02	SSTD1602D	SS0411B	S2D3083	04/11/03	1043
03	SSTD0102D	SS0411C	S2D3084	04/11/03	1127
04	SSTD0802D	SS0411D	S2D3085	04/11/03	1212
05	SSTD1202D	SS0411E	S2D3086	04/11/03	1256
06	SSTD0202D	SS0411F	S2D3087	04/11/03	1340
07					
08					
09					
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22					

6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date(s): 04/11/03 04/11/03

Calibration Time(s): 0915 1340

LAB FILE ID: RRF10 =S2D3084 RRF20 =S2D3087
RRF50 =S2D3082 RRF80 =S2D3085 RRF120=S2D3086

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.863		1.893	1.708	1.617			*
bis(2-Chloroethyl)Ether	*	1.543		1.548	1.393	1.326			*
2-Chlorophenol	*	1.370		1.388	1.258	1.204			*
2-Methylphenol	*	1.230		1.276	1.178	1.112			*
2,2'-oxybis(1-Chloropropane)	*	2.927		2.868	2.629	2.480			*
4-Methylphenol	*	1.284		1.286	1.190	1.077			*
N-Nitroso-di-n-propylamine	*	1.022		0.966	0.903	0.858			*
Hexachloroethane	*	0.636		0.633	0.580	0.551			*
Nitrobenzene	*	0.465		0.476	0.433	0.429			*
Isophorone	*	0.655		0.705	0.634	0.610			*
2-Nitrophenol	*	0.228		0.254	0.231	0.227			*
2,4-Dimethylphenol	*	0.339		0.365	0.338	0.322			*
2,4-Dichlorophenol	*	0.298		0.332	0.305	0.300			*
Naphthalene	*	1.115		1.056	0.984	0.921			*
4-Chloroaniline	*	0.119		0.121	0.111	0.098			*
bis(2-Chloroethoxy)methane	*	0.513		0.534	0.489	0.478			*
Hexachlorobutadiene	*	0.170		0.171	0.162	0.151			*
4-Chloro-3-Methylphenol	*	0.327		0.352	0.332	0.323			*
2-Methylnaphthalene	*	0.915		0.849	0.794	0.743			*
Hexachlorocyclopentadiene	*	0.172		0.280	0.273	0.276			*
2,4,6-Trichlorophenol	*	0.357		0.392	0.371	0.353			*
2,4,5-Trichlorophenol	*		0.394	0.408	0.385	0.389			*
2-Chloronaphthalene	*	1.225		1.209	1.151	1.089			*
2-Nitroaniline	*		0.599	0.629	0.580	0.566			*
Dimethylphthalate	*	1.449		1.463	1.378	1.320			*
Acenaphthylene	*	2.021		1.992	1.852	1.751			*
2,6-Dinitrotoluene	*	0.356		0.388	0.358	0.354			*
3-Nitroaniline	*		0.652	0.518	0.662	0.648			*
Acenaphthene	*	1.249		1.213	1.152	1.077			*
2,4-Dinitrophenol	*		0.104	0.207	0.190	0.205			*
4-Nitrophenol	*		0.132	0.164	0.158	0.158			*
Dibenzofuran	*	2.214		2.065	1.961	1.800			*
2,4-Dinitrotoluene	*	0.458		0.502	0.468	0.440			*
Diethylphthalate	*	1.440		1.477	1.371	1.330			*
4-Chlorophenyl-phenylether	*	0.587		0.494	0.478	0.427			*
Fluorene	*	1.358		1.149	1.109	0.997			*
4-Nitroaniline	*		0.476	0.507	0.477	0.438			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date(s): 04/11/03 04/11/03

Calibration Time(s): 0915 1340

LAB FILE ID: RRF10 =S2D3084 RRF20 =S2D3087
RRF50 =S2D3082 RRF80 =S2D3085 RRF120=S2D3086

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.144	0.203	0.182	0.188			*
N-Nitrosodiphenylamine (1)	*	0.314		0.340	0.306	0.301			*
4-Bromophenyl-phenylether	*	0.209		0.221	0.207	0.195			*
Hexachlorobenzene	*	0.243		0.231	0.217	0.205			*
Pentachlorophenol	*		0.070	0.135	0.122	0.128			*
Phenanthrene	*	1.164		1.117	1.060	1.004			*
Anthracene	*	1.156		1.114	1.044	0.989			*
Di-n-butylphthalate	*	1.625		1.626	1.484	1.415			*
Fluoranthene	*	1.184		1.112	1.037	0.984			*
Pyrene	*	1.255		1.381	1.236	1.218			*
Butylbenzylphthalate	*	0.738		0.885	0.763	0.764			*
3,3'-Dichlorobenzidine		0.416		0.489	0.396	0.393			
Benzo(a)anthracene	*	1.167		1.274	1.120	1.132			*
Chrysene	*	1.115		1.196	1.030	1.032			*
bis(2-Ethylhexyl)phthalate	*	1.065		1.115	1.020	0.984			*
Di-n-octylphthalate	*	2.631		2.739	2.596	2.288			*
Benzo(b)fluoranthene	*	1.545		1.579	1.474	1.436			*
Benzo(k)fluoranthene	*	1.612		1.605	1.476	1.402			*
Benzo(a)pyrene	*	1.376		1.454	1.339	1.265			*
Indeno(1,2,3-cd)pyrene	*	1.360		1.426	1.352	1.371			*
Dibenzo(a,h)anthracene	*	1.246		1.313	1.224	1.193			*
Benzo(g,h,i)perylene	*	1.291		1.367	1.279	1.272			*
Nitrobenzene-d5		0.482		0.509	0.465	0.459			*
2-Fluorobiphenyl	*	1.414		1.393	1.327	1.233			*
Terphenyl-d14	*	0.880		0.948	0.861	0.839			*
Phenol-d5	*	1.717		1.791	1.609	1.544			*
2-Fluorophenol	*	1.261		1.340	1.213	1.177			*
2,4,6-Tribromophenol	*	0.098		0.115	0.107	0.104			*
2-Chlorophenol-d4	*	1.377		1.412	1.270	1.229			*
1,2-Dichlorobenzene-d4	*	0.977		0.940	0.855	0.802			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date(s): 04/11/03 04/11/03

Calibration Time(s): 0915 1340

LAB FILE ID: RRF160=S2D3083

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.544					1.725	8.8*
bis(2-Chloroethyl)Ether	* 1.253					1.413	9.3*
2-Chlorophenol	* 1.135					1.271	8.5*
2-Methylphenol	* 1.085					1.176	6.8*
2,2'-oxybis(1-Chloropropane)	* 2.260					2.633	10.5*
4-Methylphenol	* 0.959					1.159	12.2*
N-Nitroso-di-n-propylamine	* 0.796					0.909	9.7*
Hexachloroethane	* 0.501					0.580	9.8*
Nitrobenzene	* 0.415					0.444	5.8*
Isophorone	* 0.603					0.641	6.4*
2-Nitrophenol	* 0.223					0.233	5.3*
2,4-Dimethylphenol	* 0.320					0.337	5.4*
2,4-Dichlorophenol	* 0.286					0.304	5.5*
Naphthalene	* 0.860					0.987	10.3*
4-Chloroaniline	* 0.090					0.108	12.5*
bis(2-Chloroethoxy)methane	* 0.451					0.493	6.4*
Hexachlorobutadiene	* 0.140					0.159	8.4*
4-Chloro-3-Methylphenol	* 0.311					0.329	4.6*
2-Methylnaphthalene	* 0.673					0.795	11.7*
Hexachlorocyclopentadiene	* 0.268					0.254	18.0*
2,4,6-Trichlorophenol	* 0.345					0.364	5.1*
2,4,5-Trichlorophenol	* 0.357					0.387	4.8*
2-Chloronaphthalene	* 1.002					1.135	8.1*
2-Nitroaniline	* 0.549					0.585	5.3*
Dimethylphthalate	* 1.266					1.375	6.1*
Acenaphthylene	* 1.640					1.851	8.7*
2,6-Dinitrotoluene	* 0.343					0.360	4.7*
3-Nitroaniline	* 0.631					0.622	9.5*
Acenaphthene	* 0.995					1.137	9.0*
2,4-Dinitrophenol	* 0.216					0.184	25.0*
4-Nitrophenol	* 0.161					0.155	8.4*
Dibenzofuran	* 1.622					1.932	11.9*
2,4-Dinitrotoluene	* 0.408					0.455	7.6*
Diethylphthalate	* 1.238					1.371	6.9*
4-Chlorophenyl-phenylether	* 0.367					0.471	17.4*
Fluorene	* 0.877					1.098	16.4*
4-Nitroaniline	* 0.423					0.464	7.2*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date(s): 04/11/03 04/11/03

Calibration Time(s): 0915 1340

LAB FILE ID: RRF160=S2D3083

COMPOUND	RRF160					$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	* 0.186					0.181	12.1*
N-Nitrosodiphenylamine (1)	* 0.290					0.310	6.1*
4-Bromophenyl-phenylether	* 0.181					0.203	7.6*
Hexachlorobenzene	* 0.189					0.217	9.8*
Pentachlorophenol	* 0.128					0.117	22.8*
Phenanthrene	* 0.914					1.052	9.3*
Anthracene	* 0.901					1.041	9.7*
Di-n-butylphthalate	* 1.264					1.483	10.3*
Fluoranthene	* 0.901					1.044	10.5*
Pyrene	* 1.284					1.275	5.0*
Butylbenzylphthalate	* 0.797					0.789	7.2*
3,3'-Dichlorobenzidine	0.408					0.420	9.4
Benzo(a)anthracene	* 1.165					1.172	5.2*
Chrysene	* 1.083					1.091	6.3*
bis(2-Ethylhexyl)phthalate	* 0.966					1.030	5.9*
Di-n-octylphthalate	* 2.096					2.470	10.9*
Benzo(b)fluoranthene	* 1.462					1.499	4.0*
Benzo(k)fluoranthene	* 1.246					1.468	10.4*
Benzo(a)pyrene	* 1.227					1.332	6.7*
Indeno(1,2,3-cd)pyrene	* 1.346					1.371	2.3*
Dibenzo(a,h)anthracene	* 1.136					1.222	5.4*
Benzo(g,h,i)perylene	* 1.233					1.288	3.8*
Nitrobenzene-d5	0.446					0.472	5.1*
2-Fluorobiphenyl	* 1.133					1.300	9.0*
Terphenyl-d14	* 0.863					0.878	4.8*
Phenol-d5	* 1.488					1.630	7.6*
2-Fluorophenol	* 1.136					1.225	6.4*
2,4,6-Tribromophenol	* 0.097					1.104	6.9*
2-Chlorophenol-d4	* 1.182					1.294	7.6*
1,2-Dichlorobenzene-d4	* 0.739					0.863	11.3*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values. All other compounds must meet a minimim RRF of 0.010.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK2L	62	72	83	64	56	81	63	59	0
02	S2LLCS	69	84	89	68	60	93	66	60	0
03	WFF16GW5	89	96	82	93	88	104	93	87	0
04	WFF14GW5	83	90	87	86	81	99	86	81	0
05	WFF14GW3	84	92	87	88	82	104	88	81	0
06	WFF14GW3MS	88	97	88	93	86	99	93	86	0
07	WFF14GW3MSD	80	91	86	84	77	95	84	77	0
08	WFF14GW4	83	89	85	85	81	96	85	78	0
09	MW101S	78	86	87	84	75	99	83	73	0
10	MW111S	80	86	87	83	78	99	83	75	0
11										
12										
13										
14										
15										
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27										
28										
29										
30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID: S2D3109 DFTPP Injection Date: 04/12/03

Instrument ID: S2 DFTPP Injection Time: 1413

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	47.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	64.2
70	Less than 2.0% of mass 69	0.4 (0.6)1
127	40.0 - 60.0% of mass 198	50.6
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	18.8
365	Greater than 1.0% of mass 198	1.91
441	Present, but less than mass 443	6.5
442	40.0 - 99.9% of mass 198	40.9
443	17.0 - 23.0% of mass 442	7.9 (19.3)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0502F	SS0412A	S2D3110	04/12/03	1432
02	SBLK2L	MB-6211	S2D3113	04/12/03	1648
03	S2LLCS	LCS-6211	S2D3114	04/12/03	1732
04	WFF16GW5	B0423-02E	S2D3115	04/12/03	1817
05	WFF14GW5	B0423-03E	S2D3116	04/12/03	1901
06	WFF14GW3	B0423-04E	S2D3117	04/12/03	1945
07	WFF14GW3MS	B0423-04EMS	S2D3118	04/12/03	2030
08	WFF14GW3MSD	B0423-04EMSD	S2D3119	04/12/03	2115
09	WFF14GW4	B0423-05E	S2D3120	04/12/03	2159
10	MW101S	B0423-06E	S2D3121	04/12/03	2243
11	MW111S	B0423-07E	S2D3122	04/12/03	2328
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date: 04/12/03 Time: 1432

Lab File ID: S2D3110 Init. Calib. Date(s): 04/11/03 04/11/03

Init. Calib. Times: 0915 1340

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.725	1.859	0.050	7.8	20.0
bis(2-Chloroethyl)Ether	1.413	1.515	0.050	7.2	100
2-Chlorophenol	1.271	1.406	0.050	10.6	100
2-Methylphenol	1.176	1.255	0.050	6.7	100
2,2'-oxybis(1-Chloropropane)	2.633	2.684	0.050	1.9	100
4-Methylphenol	1.159	1.162	0.050	0.2	100
N-Nitroso-di-n-propylamine	0.909	0.904	0.050	-0.6	100
Hexachloroethane	0.580	0.622	0.050	7.2	100
Nitrobenzene	0.444	0.477	0.050	7.4	100
Isophorone	0.641	0.687	0.050	7.2	100
2-Nitrophenol	0.233	0.257	0.050	10.3	20.0
2,4-Dimethylphenol	0.337	0.359	0.050	6.5	100
2,4-Dichlorophenol	0.304	0.339	0.050	11.5	20.0
Naphthalene	0.987	1.032	0.050	4.6	100
4-Chloroaniline	0.108	0.057	0.050	-47.2	100
bis(2-Chloroethoxy)methane	0.493	0.521	0.050	5.7	100
Hexachlorobutadiene	0.159	0.169	0.050	6.3	20.0
4-Chloro-3-Methylphenol	0.329	0.338	0.050	2.7	20.0
2-Methylnaphthalene	0.795	0.815	0.050	2.5	100
Hexachlorocyclopentadiene	0.254	0.223	0.050	-12.2	100
2,4,6-Trichlorophenol	0.364	0.410	0.050	12.6	100
2,4,5-Trichlorophenol	0.387	0.421	0.050	8.8	100
2-Chloronaphthalene	1.135	1.240	0.050	9.2	100
2-Nitroaniline	0.585	0.614	0.050	5.0	100
Dimethylphthalate	1.375	1.472	0.050	7.0	100
Acenaphthylene	1.851	1.981	0.050	7.0	100
2,6-Dinitrotoluene	0.360	0.389	0.050	8.0	100
3-Nitroaniline	0.622	0.392	0.050	-37.0	100
Acenaphthene	1.137	1.206	0.050	6.1	20.0
2,4-Dinitrophenol	0.184	0.189	0.050	2.7	100
4-Nitrophenol	0.155	0.151	0.050	-2.6	100
Dibenzofuran	1.932	1.997	0.050	3.4	100
2,4-Dinitrotoluene	0.455	0.464	0.050	2.0	100
Diethylphthalate	1.371	1.430	0.050	4.3	100
4-Chlorophenyl-phenylether	0.471	0.485	0.050	3.0	100
Fluorene	1.098	1.105	0.050	0.6	100
4-Nitroaniline	0.464	0.402	0.050	-13.4	100

All other compounds must meet a minimum RRF of 0.010.

7C

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date: 04/12/03 Time: 1432

Lab File ID: S2D3110 Init. Calib. Date(s): 04/11/03 04/11/03

Init. Calib. Times: 0915 1340

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.181	0.194	0.050	7.2	100
N-Nitrosodiphenylamine(1)	0.310	0.351	0.050	13.2	20.0
4-Bromophenyl-phenylether	0.203	0.229	0.050	12.8	100
Hexachlorobenzene	0.217	0.238	0.050	9.7	100
Pentachlorophenol	0.117	0.117	0.050	0.0	20.0
Phenanthrene	1.052	1.125	0.050	6.9	100
Anthracene	1.041	1.107	0.050	6.3	100
Di-n-butylphthalate	1.483	1.565	0.050	5.5	100
Fluoranthene	1.044	1.055	0.050	1.0	20.0
Pyrene	1.275	1.470	0.050	15.3	100
Butylbenzylphthalate	0.789	0.896	0.050	13.6	100
3,3'-Dichlorobenzidine	0.420	0.370	0.050	-11.9	100
Benzo(a)anthracene	1.172	1.290	0.050	10.1	100
Chrysene	1.091	1.203	0.050	10.3	100
bis(2-Ethylhexyl)phthalate	1.030	1.126	0.050	9.3	100
Di-n-octylphthalate	2.470	2.786	0.050	12.8	20.0
Benzo(b)fluoranthene	1.499	1.632	0.050	8.9	100
Benzo(k)fluoranthene	1.468	1.561	0.050	6.3	100
Benzo(a)pyrene	1.332	1.442	0.050	8.2	20.0
Indeno(1,2,3-cd)pyrene	1.371	1.449	0.050	5.7	100
Dibenzo(a,h)anthracene	1.222	1.345	0.050	10.1	100
Benzo(g,h,i)perylene	1.288	1.412	0.050	9.6	100
Nitrobenzene-d5	0.472	0.506	0.050	7.2	100
2-Fluorobiphenyl	1.300	1.427	0.050	9.8	100
Terphenyl-d14	0.878	1.021	0.050	16.3	100
Phenol-d5	1.630	1.782	0.050	9.3	100
2-Fluorophenol	1.225	1.340	0.050	9.4	100
2,4,6-Tribromophenol	0.104	0.117	0.050	12.5	100
2-Chlorophenol-d4	1.294	1.423	0.050	10.0	100
1,2-Dichlorobenzene-d4	0.863	0.935	0.050	8.3	100

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

SBLK2L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: MB-6211

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3113

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK2L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: MB-6211

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3113

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK2L

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: MB-6211

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3113

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	11.36	5	J
2.		UNKNOWN	14.57	32	J
3.					
4.					
5.					
6.					
7.					
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30.					

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		17	68	0-127
bis(2-Chloroethyl)Ether	25		19	76	46-109
2-Chlorophenol	25		17	68	22-117
2-Methylphenol	25		13	52	40-104
2,2'-oxybis(1-Chloropro	25		17	68	10-134
4-Methylphenol	25		16	64	35-106
N-Nitroso-di-n-prop.(1)	25		17	68	44-122
Hexachloroethane	25		14	56	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		27	108	48-118
2-Nitrophenol	25		19	76	29-122
2,4-Dimethylphenol	25		1	4*	14-109
2,4-Dichlorophenol	25		19	76	31-122
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		42	168*	0-152
bis(2-Chloroethoxy)meth	25		21	84	49-112
Hexachlorobutadiene	25		16	64	28-109
4-Chloro-3-Methylphenol	25		19	76	48-117
2-Methylnaphthalene	25		15	60	43-113
Hexachlorocyclopentadie	25		4	16*	34-103
2,4,6-Trichlorophenol	25		21	84	34-127
2,4,5-Trichlorophenol	25		22	88	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		23	92	53-124
Acenaphthylene	25		21	84	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		9	36*	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		22	88	50-121
2,4-Dinitrophenol	25		16	64	0-144
4-Nitrophenol	25		21	84	0-160
Dibenzofuran	25		18	72	51-122
2,4-Dinitrotoluene	25		23	92	52-126
Diethylphthalate	25		24	96	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		25	100	52-125
4-Nitroaniline	25		13	52	47-117
4,6-Dinitro-2-methylphe	25		19	76	3-151
N-Nitrosodiphenylamine	25		45	180*	50-150
4-Bromophenyl-phenyleth	25		25	100	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		18	72	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		26	104	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		23	92	53-131
Butylbenzylphthalate	25		23	92	54-128
3,3'-Dichlorobenzidine	25		4	16*	41-117
Benzo(a)anthracene	25		23	92	56-124
Chrysene	25		23	92	53-123
bis(2-Ethylhexyl)phthal	25		24	96	56-127
Di-n-octylphthalate	25		23	92	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		23	92	23-152
Dibenzo(a,h)anthracene	25		25	100	60-122
Benzo(g,h,i)perylene	25		24	96	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 6 out of 59 outside limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Phenol	25	0.0	24	96	0-127
bis(2-Chloroethyl)Ether	25	0.0	25	100	46-109
2-Chlorophenol	25	0.0	24	96	22-117
2-Methylphenol	25	0.0	20	80	40-104
2,2'-oxybis(1-Chloropro	25	0.0	23	92	10-134
4-Methylphenol	25	0.0	23	92	35-106
N-Nitroso-di-n-prop.(1)	25	0.0	20	80	44-122
Hexachloroethane	25	0.0	20	80	24-104
Nitrobenzene	25	0.0	24	96	47-112
Isophorone	25	0.0	32	128*	48-118
2-Nitrophenol	25	0.0	23	92	29-122
2,4-Dimethylphenol	25	0.0	3	12*	14-109
2,4-Dichlorophenol	25	0.0	24	96	31-122
Naphthalene	25	0.0	23	92	38-117
4-Chloroaniline	25	0.0	50	200*	0-152
bis(2-Chloroethoxy)meth	25	0.0	25	100	49-112
Hexachlorobutadiene	25	0.0	21	84	28-109
4-Chloro-3-Methylphenol	25	0.0	23	92	48-117
2-Methylnaphthalene	25	0.0	18	72	43-113
Hexachlorocyclopentadie	25	0.0	7	28*	34-103
2,4,6-Trichlorophenol	25	0.0	24	96	34-127
2,4,5-Trichlorophenol	25	0.0	25	100	32-131
2-Chloronaphthalene	25	0.0	24	96	47-116
2-Nitroaniline	25	0.0	19	76	51-120
Dimethylphthalate	25	0.0	25	100	53-124
Acenaphthylene	25	0.0	23	92	50-119
2,6-Dinitrotoluene	25	0.0	24	96	52-122
3-Nitroaniline	25	0.0	9	36*	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Acenaphthene	25	0.0	25	100	50-121
2,4-Dinitrophenol	25	0.0	18	72	0-144
4-Nitrophenol	25	0.0	24	96	0-160
Dibenzofuran	25	0.0	20	80	51-122
2,4-Dinitrotoluene	25	0.0	24	96	52-126
Diethylphthalate	25	0.0	26	104	53-126
4-Chlorophenyl-phenylet	25	0.0	29	116	50-124
Fluorene	25	0.0	28	112	52-125
4-Nitroaniline	25	0.0	15	60	47-117
4,6-Dinitro-2-methylphe	25	0.0	20	80	3-151
N-Nitrosodiphenylamine	25	0.0	49	196*	50-150
4-Bromophenyl-phenyleth	25	0.0	26	104	51-124
Hexachlorobenzene	25	0.0	25	100	52-124
Pentachlorophenol	25	0.0	19	76	5-125
Phenanthrene	25	0.0	26	104	52-128
Anthracene	25	0.0	25	100	52-127
Di-n-butylphthalate	25	0.0	33	132	56-132
Fluoranthene	25	0.0	25	100	53-130
Pyrene	25	0.0	24	96	53-131
Butylbenzylphthalate	25	0.0	23	92	54-128
3,3'-Dichlorobenzidine	25	0.0	0.0	0*	41-117
Benzo(a)anthracene	25	0.0	23	92	56-124
Chrysene	25	0.0	23	92	53-123
bis(2-Ethylhexyl)phthal	25	0.0	24	96	56-127
Di-n-octylphthalate	25	0.0	24	96	59-138
Benzo(b)fluoranthene	25	0.0	25	100	58-126
Benzo(k)fluoranthene	25	0.0	26	104	60-124
Benzo(a)pyrene	25	0.0	22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	0.0	22	88	23-152
Dibenzo(a,h)anthracene	25	0.0	23	92	60-122
Benzo(g,h,i)perylene	25	0.0	22	88	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	21	84	13	40	0-127
bis(2-Chloroethyl)Ether	25	22	88	13	40	46-109
2-Chlorophenol	25	21	84	13	40	22-117
2-Methylphenol	25	19	76	5	40	40-104
2,2'-oxybis(1-Chloropro	25	21	84	9	40	10-134
4-Methylphenol	25	22	88	4	40	35-106
N-Nitroso-di-n-prop.(1)	25	18	72	10	40	44-122
Hexachloroethane	25	18	72	10	40	24-104
Nitrobenzene	25	21	84	13	40	47-112
Isophorone	25	28	112	13	40	48-118
2-Nitrophenol	25	21	84	9	40	29-122
2,4-Dimethylphenol	25	6	24	67*	40	14-109
2,4-Dichlorophenol	25	21	84	13	40	31-122
Naphthalene	25	21	84	9	40	38-117
4-Chloroaniline	25	56	224*	11	40	0-152
bis(2-Chloroethoxy)meth	25	22	88	13	40	49-112
Hexachlorobutadiene	25	19	76	10	40	28-109
4-Chloro-3-Methylphenol	25	20	80	14	40	48-117
2-Methylnaphthalene	25	16	64	12	40	43-113
Hexachlorocyclopentadie	25	7	28*	0	40	34-103
2,4,6-Trichlorophenol	25	22	88	9	40	34-127
2,4,5-Trichlorophenol	25	22	88	13	40	32-131
2-Chloronaphthalene	25	22	88	9	40	47-116
2-Nitroaniline	25	17	68	11	40	51-120
Dimethylphthalate	25	22	88	13	40	53-124
Acenaphthylene	25	20	80	14	40	50-119
2,6-Dinitrotoluene	25	22	88	9	40	52-122
3-Nitroaniline	25	10	40*	10	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	23	92	8	40	50-121
2,4-Dinitrophenol	25	15	60	18	40	0-144
4-Nitrophenol	25	20	80	18	40	0-160
Dibenzofuran	25	18	72	10	40	51-122
2,4-Dinitrotoluene	25	22	88	9	40	52-126
Diethylphthalate	25	23	92	12	40	53-126
4-Chlorophenyl-phenylet	25	26	104	11	40	50-124
Fluorene	25	25	100	11	40	52-125
4-Nitroaniline	25	14	56	7	40	47-117
4,6-Dinitro-2-methylphe	25	18	72	10	40	3-151
N-Nitrosodiphenylamine	25	47	188*	4	40	50-150
4-Bromophenyl-phenyleth	25	24	96	8	40	51-124
Hexachlorobenzene	25	23	92	8	40	52-124
Pentachlorophenol	25	17	68	11	40	5-125
Phenanthrene	25	24	96	8	40	52-128
Anthracene	25	23	92	8	40	52-127
Di-n-butylphthalate	25	25	100	28	40	56-132
Fluoranthene	25	22	88	13	40	53-130
Pyrene	25	22	88	9	40	53-131
Butylbenzylphthalate	25	22	88	4	40	54-128
3,3'-Dichlorobenzidine	25	0.0	0*		40	41-117
Benzo(a)anthracene	25	21	84	9	40	56-124
Chrysene	25	22	88	4	40	53-123
bis(2-Ethylhexyl)phthal	25	23	92	4	40	56-127
Di-n-octylphthalate	25	23	92	4	40	59-138
Benzo(b)fluoranthene	25	23	92	8	40	58-126
Benzo(k)fluoranthene	25	25	100	4	40	60-124
Benzo(a)pyrene	25	21	84	5	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

3C

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - EPA Sample No.: WFF14GW3

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Indeno(1,2,3-cd)pyrene	25	21	84	5	40	23-152
Dibenzo(a,h)anthracene	25	22	88	4	40	60-122
Benzo(g,h,i)perylene	25	22	88	0	40	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 1 out of 59 outside limits
Spike Recovery: 12 out of 118 outside limits

COMMENTS: _____

8B

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID (Standard): S2D3110 Date Analyzed: 04/12/03

Instrument ID: S2 Time Analyzed: 1432

		IS1 (DCB) AREA #	RT #	IS2 (NPT) AREA #	RT #	IS3 (ANT) AREA #	RT #
	12 HOUR STD	161721	8.65	523807	11.11	261027	14.65
	UPPER LIMIT	323442	9.15	1047614	11.61	522054	15.15
	LOWER LIMIT	80861	8.15	261904	10.61	130514	14.15
	EPA SAMPLE NO.						
01	SBLK2L	108809	8.65	352778	11.09	177024	14.65
02	S2LLCS	109639	8.65	358816	11.09	175938	14.65
03	WFF16GW5	101934	8.65	333908	11.09	172965	14.65
04	WFF14GW5	102358	8.64	332476	11.09	169743	14.65
05	WFF14GW3	102181	8.64	333150	11.09	170337	14.64
06	WFF14GW3MS	93472	8.64	305403	11.09	153414	14.64
07	WFF14GW3MSD	102814	8.64	333382	11.09	161894	14.64
08	WFF14GW4	102906	8.64	337182	11.08	163664	14.64
09	MW101S	80144*	8.63	266258	11.08	137763	14.64
10	MW111S	105865	8.63	351982	11.09	179004	14.64
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Lab File ID (Standard): S2D3110 Date Analyzed: 04/12/03

Instrument ID: S2 Time Analyzed: 1432

		IS4(PHN) AREA #	RT #	IS5(CRY) AREA #	RT #	IS6(PRY) AREA #	RT #
	12 HOUR STD	363212	17.69	261665	23.12	199063	26.19
	UPPER LIMIT	726424	18.19	523330	23.62	398126	26.69
	LOWER LIMIT	181606	17.19	130833	22.62	99532	25.69
	EPA SAMPLE NO.						
01	SBLK2L	254690	17.69	217547	23.11	143028	26.18
02	S2LLCS	246630	17.69	210741	23.11	143696	26.18
03	WFF16GW5	254621	17.69	232416	23.11	156477	26.18
04	WFF14GW5	246281	17.68	209781	23.11	139495	26.17
05	WFF14GW3	246776	17.69	206725	23.10	136357	26.17
06	WFF14GW3MS	224769	17.69	198348	23.10	126993	26.16
07	WFF14GW3MSD	227429	17.69	198632	23.10	128430	26.16
08	WFF14GW4	227720	17.68	192924	23.10	125222	26.16
09	MW101S	206091	17.68	185177	23.10	117788	26.16
10	MW111S	263063	17.69	233855	23.10	148422	26.16
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag internal standard area values with an asterisk.
* Values outside of QC limits.

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Job- 4740 SDG-B0423	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard FSpada	CHECKED BY	APPROVED BY	DATE 5/9/03

Sample FTA-MW-111S

2-methylphenol = 1 ug/L

$$2\text{-methylphenol} = \frac{(3653)(40\text{ mg})(1000\text{ uL})}{(105865)(1.176)(1\text{ L})(1000\text{ mL})} = 1.17\text{ mg/mL} = \text{ug/L}$$

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3122

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	1	J
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: B0423-07E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3122

Level: (low/med) LOW Date Received: 03/14/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/12/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

Data File: S2D3122.D
Report Date: 17-Apr-2003 13:21

Mitkem Corporation

Data file : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030412.B\S2D3122.D
Lab Smp Id: B0423-07E Client Smp ID: MW111S
Inj Date : 12-APR-2003 23:28
Operator : ZY Inst ID: s2.i
Smp Info : B0423-07E,MW111S,6211,ZY,,B0423
Misc Info : 0,,,1,,,,,,,19-MAR-03,14-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\svoa\s2.I\030412.B\s2_8270C.m
Meth Date : 17-Apr-2003 12:08 mtl Quant Type: ISTD
Cal Date : 11-APR-2003 09:15 Cal File: S2D3082.D ✓
Als bottle: 14
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848AQ.sub
Target Version: 4.03
Processing Host: TARGET11

Concentration Formula: Amt * DF * Uf*(Vt/Vi)*(1/Vo)

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	GPC Correction Factor
Vt	1000.000	Volume of final extract (uL)
Vi	1.000	Volume injected (uL)
Vo	1000.000	Volume of sample extracted (mL)

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$	3 2-Fluorophenol	112	6.326	6.336	(0.733)	189884	58.5382	58
$	5 Phenol-d5	99	7.931	7.951	(0.919)	269185	62.4019	62
$	9 2-Chlorophenol-d4	132	8.210	8.231	(0.951)	212701	62.1070	62
*	12 1,4-Dichlorobenzene-d4	152	8.630	8.650	(1.000)	105865	40.0000	
$	14 1,2-Dichlorobenzene-d4	152	8.921	8.931	(1.034)	86195	37.7494	38
	17 2-Methylphenol	108	9.061	9.092	(1.050)	3653	1.17315	1(a)
$	22 Nitrobenzene-d5	82	9.675	9.695	(0.873)	165957	39.9363	40
*	31 Naphthalene-d8	136	11.085	11.105	(1.000)	351982	40.0000	
$	41 2-Fluorobiphenyl	172	13.260	13.269	(0.906)	249584	42.8989	43
*	48 Acenaphthene-d10	164	14.638	14.648	(1.000)	179004	40.0000	
$	60 2,4,6-Tribromophenol	330	16.253	16.263	(0.919)	51246	74.5828	74
*	64 Phenanthrene-d10	188	17.685	17.695	(1.000)	263063	40.0000	
$	72 Terphenyl-d14	244	20.958	20.968	(0.907)	223018	43.4322	43
*	76 Chrysene-d12	240	23.101	23.121	(1.000)	233855	40.0000	

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: S2 Calibration Date(s): 04/11/03 04/11/03

Calibration Time(s): 0915 1340

LAB FILE ID: RRF160=S2D3083

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.544					1.725	8.8*
bis(2-Chloroethyl)Ether	* 1.253					1.413	9.3*
2-Chlorophenol	* 1.135					1.271	8.5*
2-Methylphenol	* 1.085					1.176	6.8*
2,2'-oxybis(1-Chloropropane)	* 2.260					2.633	10.5*
4-Methylphenol	* 0.959					1.159	12.2*
N-Nitroso-di-n-propylamine	* 0.796					0.909	9.7*
Hexachloroethane	* 0.501					0.580	9.8*
Nitrobenzene	* 0.415					0.444	5.8*
Isophorone	* 0.603					0.641	6.4*
2-Nitrophenol	* 0.223					0.233	5.3*
2,4-Dimethylphenol	* 0.320					0.337	5.4*
2,4-Dichlorophenol	* 0.286					0.304	5.5*
Naphthalene	* 0.860					0.987	10.3*
4-Chloroaniline	* 0.090					0.108	12.5*
bis(2-Chloroethoxy)methane	* 0.451					0.493	6.4*
Hexachlorobutadiene	* 0.140					0.159	8.4*
4-Chloro-3-Methylphenol	* 0.311					0.329	4.6*
2-Methylnaphthalene	* 0.673					0.795	11.7*
Hexachlorocyclopentadiene	* 0.268					0.254	18.0*
2,4,6-Trichlorophenol	* 0.345					0.364	5.1*
2,4,5-Trichlorophenol	* 0.357					0.387	4.8*
2-Chloronaphthalene	* 1.002					1.135	8.1*
2-Nitroaniline	* 0.549					0.585	5.3*
Dimethylphthalate	* 1.266					1.375	6.1*
Acenaphthylene	* 1.640					1.851	8.7*
2,6-Dinitrotoluene	* 0.343					0.360	4.7*
3-Nitroaniline	* 0.631					0.622	9.5*
Acenaphthene	* 0.995					1.137	9.0*
2,4-Dinitrophenol	* 0.216					0.184	25.0*
4-Nitrophenol	* 0.161					0.155	8.4*
Dibenzofuran	* 1.622					1.932	11.9*
2,4-Dinitrotoluene	* 0.408					0.455	7.6*
Diethylphthalate	* 1.238					1.371	6.9*
4-Chlorophenyl-phenylether	* 0.367					0.471	17.4*
Fluorene	* 0.877					1.098	16.4*
4-Nitroaniline	* 0.423					0.464	7.2*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 03/26/03 03/27/03

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.70 DCB: 22.04

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232CL3	AR1232CL3	03/26/03	1535	6.71	22.04
02	AR1242CL1	AR1242CL1	03/26/03	1610	6.71	22.04
03	AR1242CL2	AR1242CL2	03/26/03	1645	6.71	22.04
04	AR1242CL3	AR1242CL3	03/26/03	1721	6.71	22.04
05	AR1242CL4	AR1242CL4	03/26/03	1756	6.70	22.04
06	AR1242CL5	AR1242CL5	03/26/03	1831	6.70	22.03
07	AR1248CL1	AR1248CL1	03/26/03	1906	6.71	22.04
08	AR1248CL2	AR1248CL2	03/26/03	1942	6.71	22.04
09	AR1248CL3	AR1248CL3	03/26/03	2018	6.71	22.04
10	AR1248CL4	AR1248CL4	03/26/03	2053	6.70	22.03
11	AR1248CL5	AR1248CL5	03/26/03	2128	6.70	22.03
12	AR2154CL1	AR2154CL1	03/26/03	2203	6.71	22.05
13	AR2154CL2	AR2154CL2	03/26/03	2239	6.71	22.04
14	AR2154CL3	AR2154CL3	03/26/03	2314	6.71	22.04
15	AR2154CL4	AR2154CL4	03/26/03	2349	6.70	22.04
16	AR2154CL5	AR2154CL5	03/27/03	0025	6.70	22.04
17	AR1660CL1	AR1660CL1	03/27/03	0100	6.71	22.05
18	AR1660CL2	AR1660CL2	03/27/03	0136	6.71	22.04
19	AR1660CL3	AR1660CL3	03/27/03	0211	6.71	22.04
20	AR1660CL4	AR1660CL4	03/27/03	0246	6.70	22.04
21	AR1660CL5	AR1660CL5	03/27/03	0321	6.70	22.04
22	AR1660CE	AR1660CE	03/31/03	1230	6.71	22.04
23	BBLK1K	MB-6109	03/31/03	1442	6.72	22.05
24	B1KLCS	LCS-6208	03/31/03	1517	6.71	22.04
25	B1KLCSD	LCSD-6208	03/31/03	1553	6.71	22.04
26	WFF16GW5RE	B0423-02ERE	03/31/03	1629	6.71	22.04
27	WFF14GW5RE	B0423-03ERE	03/31/03	1704	6.71	22.04
28	WFF14GW3RE	B0423-04ERE	03/31/03	1739	6.71	22.04
29	WFF14GW4RE	B0423-05ERE	03/31/03	1815	6.71	22.04
30	MW101SRE	B0423-06ERE	03/31/03	1850	6.71	22.04
31	MW111SRE	B0423-07ERE	03/31/03	1925	6.71	22.04
32	AR1660CF	AR1660CF	03/31/03	2256	6.71	22.04

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 03/26/03 03/27/03

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.38 DCB: 25.25

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232CL3	AR1232CL3	03/26/03	1535	8.38	25.25
02	AR1242CL1	AR1242CL1	03/26/03	1610	8.38	25.25
03	AR1242CL2	AR1242CL2	03/26/03	1645	8.38	25.25
04	AR1242CL3	AR1242CL3	03/26/03	1721	8.38	25.25
05	AR1242CL4	AR1242CL4	03/26/03	1756	8.38	25.25
06	AR1242CL5	AR1242CL5	03/26/03	1831	8.38	25.25
07	AR1248CL1	AR1248CL1	03/26/03	1906	8.38	25.25
08	AR1248CL2	AR1248CL2	03/26/03	1942	8.38	25.25
09	AR1248CL3	AR1248CL3	03/26/03	2018	8.38	25.25
10	AR1248CL4	AR1248CL4	03/26/03	2053	8.38	25.25
11	AR1248CL5	AR1248CL5	03/26/03	2128	8.38	25.25
12	AR2154CL1	AR2154CL1	03/26/03	2203	8.38	25.25
13	AR2154CL2	AR2154CL2	03/26/03	2239	8.38	25.25
14	AR2154CL3	AR2154CL3	03/26/03	2314	8.38	25.25
15	AR2154CL4	AR2154CL4	03/26/03	2349	8.38	25.25
16	AR2154CL5	AR2154CL5	03/27/03	0025	8.39	25.25
17	AR1660CL1	AR1660CL1	03/27/03	0100	8.39	25.25
18	AR1660CL2	AR1660CL2	03/27/03	0136	8.38	25.25
19	AR1660CL3	AR1660CL3	03/27/03	0211	8.38	25.25
20	AR1660CL4	AR1660CL4	03/27/03	0246	8.39	25.25
21	AR1660CL5	AR1660CL5	03/27/03	0321	8.38	25.25
22	AR1660CE	AR1660CE	03/31/03	1230	8.39	25.25
23	BBLK1K	MB-6109	03/31/03	1442	8.39	25.26
24	B1KLCS	LCS-6208	03/31/03	1517	8.39	25.26
25	B1KLCSD	LCSD-6208	03/31/03	1553	8.39	25.25
26	WFF16GW5RE	B0423-02ERE	03/31/03	1629	8.39	25.25
27	WFF14GW5RE	B0423-03ERE	03/31/03	1704	8.39	25.25
28	WFF14GW3RE	B0423-04ERE	03/31/03	1739	8.39	25.25
29	WFF14GW4RE	B0423-05ERE	03/31/03	1815	8.39	25.26
30	MW101SRE	B0423-06ERE	03/31/03	1850	8.39	25.25
31	MW111SRE	B0423-07ERE	03/31/03	1925	8.39	25.25
32	AR1660CF	AR1660CF	03/31/03	2256	8.39	25.26

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 04/14/03 04/15/03

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 4.67 DCB: 19.06

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232EL3	AR1232EL3	04/14/03	1906	4.67	19.06
02	AR1242EL1	AR1242EL1	04/14/03	1937	4.67	19.06
03	AR1242EL2	AR1242EL2	04/14/03	2007	4.67	19.06
04	AR1242EL3	AR1242EL3	04/14/03	2038	4.67	19.06
05	AR1242EL4	AR1242EL4	04/14/03	2109	4.67	19.06
06	AR1242EL5	AR1242EL5	04/14/03	2139	4.66	19.06
07	AR1248EL1	AR1248EL1	04/14/03	2210	4.67	19.07
08	AR1248EL2	AR1248EL2	04/14/03	2240	4.67	19.06
09	AR1248EL3	AR1248EL3	04/14/03	2311	4.67	19.06
10	AR1248EL4	AR1248EL4	04/14/03	2342	4.67	19.06
11	AR1248EL5	AR1248EL5	04/15/03	0012	4.67	19.06
12	AR2154EL1	AR2154EL1	04/15/03	0043	4.67	19.07
13	AR2154EL2	AR2154EL2	04/15/03	0114	4.67	19.06
14	AR2154EL3	AR2154EL3	04/15/03	0144	4.67	19.06
15	AR2154EL4	AR2154EL4	04/15/03	0215	4.67	19.06
16	AR2154EL5	AR2154EL5	04/15/03	0245	4.67	19.06
17	AR1660EL1	AR1660EL1	04/15/03	0316	4.67	19.07
18	AR1660EL2	AR1660EL2	04/15/03	0347	4.67	19.06
19	AR1660EL3	AR1660EL3	04/15/03	0417	4.67	19.06
20	AR1660EL4	AR1660EL4	04/15/03	0448	4.67	19.06
21	AR1660EL5	AR1660EL5	04/15/03	0519	4.67	19.06
22	BBLK1A	MB-6211	04/15/03	0651		
23	WFF16GW5	B0423-02E	04/15/03	0721		
24	WFF14GW5	B0423-03E	04/15/03	0752		
25	WFF14GW3	B0423-04E	04/15/03	0823		
26	WFF14GW4	B0423-05E	04/15/03	0853		
27	MW101S	B0423-06E	04/15/03	0924		
28	MW111S	B0423-07E	04/15/03	0955		
29	AR1660EA	AR1660EA	04/15/03	1243	4.66	19.06
30						
31						
32						

QC LIMITS
TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 04/14/03 04/15/03

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.03 DCB: 22.14

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232EL3	AR1232EL3	04/14/03	1906	6.03	22.14
02	AR1242EL1	AR1242EL1	04/14/03	1937	6.03	22.14
03	AR1242EL2	AR1242EL2	04/14/03	2007	6.03	22.14
04	AR1242EL3	AR1242EL3	04/14/03	2038	6.03	22.14
05	AR1242EL4	AR1242EL4	04/14/03	2109	6.03	22.14
06	AR1242EL5	AR1242EL5	04/14/03	2139	6.03	22.14
07	AR1248EL1	AR1248EL1	04/14/03	2210	6.03	22.14
08	AR1248EL2	AR1248EL2	04/14/03	2240	6.03	22.14
09	AR1248EL3	AR1248EL3	04/14/03	2311	6.03	22.14
10	AR1248EL4	AR1248EL4	04/14/03	2342	6.03	22.14
11	AR1248EL5	AR1248EL5	04/15/03	0012	6.03	22.14
12	AR2154EL1	AR2154EL1	04/15/03	0043	6.03	22.14
13	AR2154EL2	AR2154EL2	04/15/03	0114	6.03	22.14
14	AR2154EL3	AR2154EL3	04/15/03	0144	6.03	22.14
15	AR2154EL4	AR2154EL4	04/15/03	0215	6.03	22.14
16	AR2154EL5	AR2154EL5	04/15/03	0245	6.03	22.15
17	AR1660EL1	AR1660EL1	04/15/03	0316	6.03	22.14
18	AR1660EL2	AR1660EL2	04/15/03	0347	6.03	22.14
19	AR1660EL3	AR1660EL3	04/15/03	0417	6.03	22.14
20	AR1660EL4	AR1660EL4	04/15/03	0448	6.03	22.14
21	AR1660EL5	AR1660EL5	04/15/03	0519	6.03	22.14
22	BBLK1A	MB-6211	04/15/03	0651		
23	WFF16GW5	B0423-02E	04/15/03	0721		
24	WFF14GW5	B0423-03E	04/15/03	0752		
25	WFF14GW3	B0423-04E	04/15/03	0823		
26	WFF14GW4	B0423-05E	04/15/03	0853		
27	MW101S	B0423-06E	04/15/03	0924		
28	MW111S	B0423-07E	04/15/03	0955		
29	AR1660EA	AR1660EA	04/15/03	1243	6.03	22.14
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM VIII PCB

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1535 0321

LAB FILE ID: RF0.1: E1E0159F RF0.5: E1E0160F RF1: E1E0161F
RF2.5: E1E0162F RF5: E1E0163F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	18240.000	19542.000	19258.000	17686.400	16636.000
(2)	9970.000	11134.000	11170.000	10282.000	9724.400
(3)	9330.000	10214.000	10125.000	9064.400	8627.200
Aroclor-1221	4220.000	4504.000	4518.000	4298.000	3995.400
(2)	3110.000	3248.000	3198.000	3012.400	2754.400
(3)	11080.000	10870.000	10343.000	9284.400	8404.000
Aroclor-1232			9273.000		
(2)			6229.000		
(3)			8835.000		
Aroclor-1242	15550.000	16060.000	16579.000	14247.200	13421.600
(2)	8390.000	9068.000	9530.000	8208.000	7880.600
(3)	7740.000	8254.000	8531.000	7368.800	7109.200
Aroclor-1248	12530.000	13524.000	12606.000	12059.200	11097.000
(2)	11980.000	13722.000	13085.000	13039.600	12494.200
(3)	12470.000	13748.000	12987.000	12764.800	12149.400
Aroclor-1254	14920.000	14256.000	13710.000	12189.200	11072.800
(2)	17360.000	20922.000	21771.000	20815.600	20108.400
(3)	14970.000	18188.000	18849.000	17861.600	17075.000
Aroclor-1260	20450.000	23926.000	24013.000	22814.000	22019.200
(2)	31460.000	36768.000	36894.000	35014.000	33996.400
(3)	14250.000	18104.000	18596.000	18306.000	17906.000
Tetrachloro-m-xylene	420500.00	473200.00	468600.00	443720.00	414430.00
Decachlorobiphenyl	495500.00	522800.00	492400.00	442940.00	413800.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1535 0321

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	18272.4800	6.5
(2)	AVRG	10456.0800	6.4
(3)	AVRG	9472.12000	7.2
Aroclor-1221	AVRG	4307.08000	5.0
(2)	AVRG	3064.56000	6.4
(3)	AVRG	9996.28000	11.3
Aroclor-1232	AVRG	9273.00000	0.0
(2)	AVRG	6229.00000	0.0
(3)	AVRG	8835.00000	0.0
Aroclor-1242	AVRG	15171.5600	8.6
(2)	AVRG	8615.32000	7.8
(3)	AVRG	7800.60000	7.6
Aroclor-1248	AVRG	12363.2400	7.2
(2)	AVRG	12864.1600	5.1
(3)	AVRG	12823.8400	4.7
Aroclor-1254	AVRG	13229.6000	11.9
(2)	AVRG	20195.4000	8.4
(3)	AVRG	17388.7200	8.6
Aroclor-1260	AVRG	22644.4400	6.5
(2)	AVRG	34826.4800	6.4
(3)	AVRG	17432.4000	10.3
Tetrachloro-m-xylene	AVRG	444090.000	6.0
Decachlorobiphenyl	AVRG	473488.000	9.3

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1535 0321

LAB FILE ID: RF0.1: E1E0159R RF0.5: E1E0160R RF1: E1E0161R
RF2.5: E1E0162R RF5: E1E0163R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	46220.000	45496.000	43662.000	39689.600	37128.600
(2)	23330.000	23008.000	21972.000	19906.000	18423.800
(3)	21570.000	20470.000	19499.000	17751.200	16590.000
Aroclor-1221	8700.000	8546.000	8329.000	7672.800	7084.800
(2)	6230.000	6084.000	5890.000	5300.000	4818.800
(3)	21210.000	19234.000	17847.000	15665.200	14148.600
Aroclor-1232			15800.000		
(2)			10846.000		
(3)			19264.000		
Aroclor-1242	36870.000	36114.000	36329.000	31506.400	29402.800
(2)	18790.000	18154.000	18431.000	15814.800	14617.600
(3)	15610.000	17282.000	17950.000	15626.400	15140.200
Aroclor-1248	27970.000	26976.000	24562.000	23479.600	21611.200
(2)	24820.000	27586.000	25653.000	25138.400	24342.200
(3)	28730.000	31268.000	29093.000	28445.600	27494.600
Aroclor-1254	38520.000	34506.000	32191.000	29028.400	27519.000
(2)	43350.000	43486.000	44085.000	41594.400	39810.400
(3)	34880.000	35302.000	35061.000	33825.200	32748.200
Aroclor-1260	48720.000	44784.000	42520.000	38993.600	37253.400
(2)	44350.000	44674.000	44032.000	41955.600	40771.400
(3)	62540.000	64686.000	64168.000	62186.400	61596.800
Tetrachloro-m-xylene	695500.00	748900.00	755100.00	755160.00	753300.00
Decachlorobiphenyl	822500.00	812800.00	767300.00	711120.00	677340.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1535 0321

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	42439.2400	9.2
(2)	AVRG	21327.9600	9.9
(3)	AVRG	19176.0400	10.5
Aroclor-1221	AVRG	8066.52000	8.4
(2)	AVRG	5664.56000	10.4
(3)	AVRG	17620.9600	15.9
Aroclor-1232	AVRG	15800.0000	0.0
(2)	AVRG	10846.0000	0.0
(3)	AVRG	19264.0000	0.0
Aroclor-1242	AVRG	34044.4400	9.9
(2)	AVRG	17161.4800	10.7
(3)	AVRG	16321.7200	7.5
Aroclor-1248	AVRG	24919.7600	10.4
(2)	AVRG	25507.9200	4.9
(3)	AVRG	29006.2400	4.8
Aroclor-1254	AVRG	32352.8800	13.6
(2)	AVRG	42465.1600	4.1
(3)	AVRG	34363.2800	3.1
Aroclor-1260	AVRG	42454.2000	10.8
(2)	AVRG	43156.6000	4.0
(3)	AVRG	63035.4400	2.1
Tetrachloro-m-xylene	AVRG	741592.000	3.5
Decachlorobiphenyl	AVRG	758212.000	8.3

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1906 0519

LAB FILE ID: RF0.1: E1E0575F RF0.5: E1E0576F RF1: E1E0577F
RF2.5: E1E0578F RF5: E1E0579F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	21900.000	21816.000	20929.000	18299.200	16850.600
(2)	11710.000	12444.000	12030.000	10634.000	9819.200
(3)	10760.000	10684.000	10252.000	9078.000	8375.200
Aroclor-1221	4990.000	4874.000	4750.000	4439.600	4125.000
(2)	3610.000	3486.000	3343.000	3082.000	2822.000
(3)	13380.000	11972.000	11103.000	9834.400	8858.600
Aroclor-1232			9101.000		
(2)			5540.000		
(3)			8242.000		
Aroclor-1242	12210.000	11142.000	10346.000	8974.000	8150.200
(2)	16360.000	16256.000	15533.000	14175.600	13353.400
(3)	7550.000	7934.000	8005.000	7396.800	7241.800
Aroclor-1248	13720.000	13508.000	12512.000	11690.800	10692.600
(2)	14320.000	14774.000	14022.000	13439.600	12449.200
(3)	10430.000	10966.000	10528.000	10322.400	9579.200
Aroclor-1254	23430.000	22358.000	22130.000	20692.000	19247.600
(2)	16070.000	15868.000	16647.000	15837.200	14920.400
(3)	18050.000	18438.000	18481.000	17528.800	16366.200
Aroclor-1260	31030.000	29522.000	27897.000	24079.600	22399.000
(2)	23030.000	24952.000	24635.000	21924.000	20875.800
(3)	34130.000	37494.000	37527.000	33790.800	32513.600
Tetrachloro-m-xylene	426000.00	472900.00	487600.00	461620.00	439400.00
Decachlorobiphenyl	475000.00	479200.00	455800.00	404400.00	379090.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1906 0519

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	19958.9600	11.4
(2)	AVRG	11327.4400	9.5
(3)	AVRG	9829.84000	10.7
Aroclor-1221	AVRG	4635.72000	7.6
(2)	AVRG	3268.60000	9.7
(3)	AVRG	11029.6000	16.1
Aroclor-1232	AVRG	9101.00000	0.0
(2)	AVRG	5540.00000	0.0
(3)	AVRG	8242.00000	0.0
Aroclor-1242	AVRG	10164.4400	16.0
(2)	AVRG	15135.6000	8.7
(3)	AVRG	7625.52000	4.4
Aroclor-1248	AVRG	12424.6800	10.2
(2)	AVRG	13800.9600	6.5
(3)	AVRG	10365.1200	4.8
Aroclor-1254	AVRG	21571.5200	7.5
(2)	AVRG	15868.5200	3.9
(3)	AVRG	17772.8000	4.9
Aroclor-1260	AVRG	26985.5200	13.5
(2)	AVRG	23083.3600	7.5
(3)	AVRG	35091.0800	6.5
Tetrachloro-m-xylene	AVRG	457504.000	5.4
Decachlorobiphenyl	AVRG	438698.000	10.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1906 0519

LAB FILE ID: RF0.1: E1E0575R RF0.5: E1E0576R RF1: E1E0577R
RF2.5: E1E0578R RF5: E1E0579R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	55180.000	52612.000	50648.000	44365.200	40892.800
(2)	28780.000	26690.000	25425.000	22012.400	20111.000
(3)	25610.000	22770.000	21940.000	19168.800	17798.400
Aroclor-1221	10540.000	9980.000	9490.000	8735.200	8006.000
(2)	7600.000	7134.000	6700.000	6025.200	5417.200
(3)	25890.000	22502.000	20474.000	17880.000	16030.800
Aroclor-1232			17446.000		
(2)			11297.000		
(3)			20416.000		
Aroclor-1242	41340.000	39518.000	37615.000	34408.000	32308.000
(2)	21230.000	20124.000	18843.000	17143.600	15897.400
(3)	19970.000	19888.000	18438.000	17203.600	16718.600
Aroclor-1248	31320.000	29388.000	26876.000	24935.600	22958.400
(2)	34750.000	32520.000	29949.000	27821.200	26014.400
(3)	38740.000	36148.000	33334.000	31380.800	29453.200
Aroclor-1254	52470.000	49912.000	48822.000	45435.200	42387.600
(2)	38360.000	35720.000	35798.000	33499.600	31738.400
(3)	41660.000	39760.000	38598.000	36631.200	35029.600
Aroclor-1260	50490.000	49430.000	49341.000	44332.000	42595.400
(2)	70350.000	68782.000	68912.000	63364.000	61840.600
(3)	44100.000	44250.000	44520.000	40820.800	40028.800
Tetrachloro-m-xylene	789000.00	850700.00	867450.00	841380.00	835860.00
Decachlorobiphenyl	983500.00	936900.00	888900.00	781520.00	741520.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1906 0519

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	48739.6000	12.2
(2)	AVRG	24603.6800	14.3
(3)	AVRG	21457.4400	14.3
Aroclor-1221	AVRG	9350.24000	10.7
(2)	AVRG	6575.28000	13.2
(3)	AVRG	20555.3600	18.8
Aroclor-1232	AVRG	17446.0000	0.0
(2)	AVRG	11297.0000	0.0
(3)	AVRG	20416.0000	0.0
Aroclor-1242	AVRG	37037.8000	9.9
(2)	AVRG	18647.6000	11.6
(3)	AVRG	18443.6400	8.1
Aroclor-1248	AVRG	27095.6000	12.4
(2)	AVRG	30210.9200	11.6
(3)	AVRG	33811.2000	11.0
Aroclor-1254	AVRG	47805.3600	8.2
(2)	AVRG	35023.2000	7.2
(3)	AVRG	38335.7600	6.8
Aroclor-1260	AVRG	47237.6800	7.5
(2)	AVRG	66649.7200	5.7
(3)	AVRG	42743.9200	5.0
Tetrachloro-m-xylene	AVRG	836878.000	3.5
Decachlorobiphenyl	AVRG	866468.000	11.8

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1535 0321

LAB FILE ID: RT1: E1E0159F RT2: E1E0160F RT3: E1E0161F
RT4: E1E0162F RT5: E1E0163F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	10.380	10.370	10.370	10.370	10.370
(2)	10.760	10.750	10.750	10.740	10.740
(3)	11.920	11.920	11.910	11.910	11.910
Aroclor-1221	7.370	7.370	7.360	7.360	7.360
(2)	7.820	7.820	7.810	7.810	7.810
(3)	7.940	7.930	7.930	7.930	7.930
Aroclor-1232			7.930		
(2)			9.020		
(3)			10.370		
Aroclor-1242	10.380	10.370	10.370	10.370	10.360
(2)	10.760	10.750	10.740	10.740	10.740
(3)	11.920	11.910	11.910	11.910	11.900
Aroclor-1248	11.920	11.910	11.910	11.900	11.900
(2)	13.110	13.090	13.090	13.080	13.080
(3)	13.150	13.150	13.140	13.140	13.140
Aroclor-1254	12.980	12.970	12.970	12.960	12.960
(2)	14.750	14.740	14.740	14.730	14.730
(3)	16.720	16.710	16.710	16.700	16.700
Aroclor-1260	16.720	16.710	16.700	16.700	16.700
(2)	18.490	18.480	18.470	18.470	18.470
(3)	19.200	19.190	19.190	19.190	19.180
Tetrachloro-m-xylene	6.710	6.710	6.710	6.700	6.700
Decachlorobiphenyl	22.050	22.040	22.040	22.040	22.040

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1535 0321

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	10.372	10.297	10.437
(2)	10.748	10.670	10.810
(3)	11.914	11.837	11.977
Aroclor-1221	7.364	7.290	7.430
(2)	7.814	7.740	7.880
(3)	7.932	7.857	7.997
Aroclor-1232	7.930	7.863	8.003
(2)	9.020	8.947	9.087
(3)	10.370	10.303	10.443
Aroclor-1242	10.370	10.293	10.433
(2)	10.746	10.667	10.807
(3)	11.910	11.833	11.973
Aroclor-1248	11.908	11.833	11.973
(2)	13.090	13.007	13.147
(3)	13.144	13.067	13.207
Aroclor-1254	12.968	12.893	13.033
(2)	14.738	14.660	14.800
(3)	16.708	16.630	16.770
Aroclor-1260	16.706	16.630	16.770
(2)	18.476	18.397	18.537
(3)	19.190	19.113	19.253
Tetrachloro-m-xylene	6.706	6.653	6.753
Decachlorobiphenyl	22.042	21.937	22.137

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1535 0321

LAB FILE ID: RT1: E1E0159R RT2: E1E0160R RT3: E1E0161R
RT4: E1E0162R RT5: E1E0163R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.720	12.720	12.720	12.720	12.720
(2)	13.110	13.110	13.100	13.110	13.100
(3)	14.460	14.450	14.450	14.450	14.450
Aroclor-1221	9.450	9.450	9.450	9.450	9.450
(2)	9.910	9.910	9.910	9.900	9.910
(3)	10.090	10.090	10.090	10.090	10.090
Aroclor-1232			10.090		
(2)			11.370		
(3)			12.710		
Aroclor-1242	12.710	12.720	12.720	12.710	12.710
(2)	13.100	13.100	13.100	13.100	13.100
(3)	15.630	15.630	15.630	15.630	15.630
Aroclor-1248	14.450	14.450	14.450	14.450	14.450
(2)	15.520	15.520	15.520	15.510	15.510
(3)	15.630	15.630	15.630	15.630	15.630
Aroclor-1254	16.170	16.160	16.160	16.160	16.160
(2)	17.390	17.390	17.390	17.390	17.390
(3)	19.440	19.440	19.440	19.440	19.440
Aroclor-1260	18.500	18.500	18.500	18.500	18.500
(2)	19.440	19.430	19.430	19.430	19.430
(3)	21.130	21.130	21.130	21.130	21.130
Tetrachloro-m-xylene	8.390	8.380	8.380	8.390	8.380
Decachlorobiphenyl	25.250	25.250	25.250	25.250	25.250

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 03/26/03 03/27/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1535 0321

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.720	12.647	12.787
(2)	13.106	13.033	13.173
(3)	14.452	14.380	14.520
Aroclor-1221	9.450	9.383	9.523
(2)	9.908	9.837	9.977
(3)	10.090	10.020	10.160
Aroclor-1232	10.090	10.020	10.160
(2)	11.370	11.297	11.437
(3)	12.710	12.643	12.783
Aroclor-1242	12.714	12.643	12.783
(2)	13.100	13.030	13.170
(3)	15.630	15.557	15.697
Aroclor-1248	14.450	14.377	14.517
(2)	15.516	15.443	15.583
(3)	15.630	15.557	15.697
Aroclor-1254	16.162	16.093	16.233
(2)	17.390	17.323	17.463
(3)	19.440	19.367	19.507
Aroclor-1260	18.500	18.427	18.567
(2)	19.432	19.363	19.503
(3)	21.130	21.060	21.200
Tetrachloro-m-xylene	8.384	8.333	8.433
Decachlorobiphenyl	25.250	25.150	25.350

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1906 0519

LAB FILE ID: RT1: E1E0575F RT2: E1E0576F RT3: E1E0577F
RT4: E1E0578F RT5: E1E0579F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	7.730	7.730	7.720	7.720	7.720
(2)	8.070	8.070	8.060	8.060	8.060
(3)	9.140	9.140	9.140	9.140	9.130
Aroclor-1221	5.150	5.150	5.150	5.150	5.150
(2)	5.520	5.520	5.520	5.520	5.510
(3)	5.620	5.620	5.620	5.610	5.610
Aroclor-1232			5.610		
(2)			6.520		
(3)			7.720		
Aroclor-1242	6.530	6.520	6.520	6.520	6.520
(2)	7.730	7.720	7.720	7.720	7.720
(3)	10.310	10.310	10.310	10.300	10.310
Aroclor-1248	9.140	9.140	9.140	9.130	9.130
(2)	10.260	10.250	10.250	10.250	10.240
(3)	10.830	10.820	10.820	10.820	10.810
Aroclor-1254	11.850	11.840	11.840	11.840	11.840
(2)	12.580	12.570	12.570	12.570	12.560
(3)	13.780	13.770	13.770	13.770	13.760
Aroclor-1260	13.060	13.060	13.060	13.050	13.050
(2)	13.770	13.770	13.770	13.760	13.760
(3)	15.520	15.520	15.520	15.510	15.510
Tetrachloro-m-xylene	4.670	4.670	4.670	4.670	4.670
Decachlorobiphenyl	19.070	19.060	19.060	19.060	19.060

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 1906 0519

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	7.724	7.650	7.790
(2)	8.064	7.990	8.130
(3)	9.138	9.063	9.203
Aroclor-1221	5.150	5.077	5.217
(2)	5.518	5.443	5.583
(3)	5.616	5.540	5.680
Aroclor-1232	5.610	5.540	5.680
(2)	6.520	6.453	6.593
(3)	7.720	7.653	7.793
Aroclor-1242	6.522	6.450	6.590
(2)	7.722	7.650	7.790
(3)	10.308	10.237	10.377
Aroclor-1248	9.136	9.063	9.203
(2)	10.250	10.173	10.313
(3)	10.820	10.743	10.883
Aroclor-1254	11.842	11.767	11.907
(2)	12.570	12.493	12.633
(3)	13.770	13.693	13.833
Aroclor-1260	13.056	12.983	13.123
(2)	13.766	13.690	13.830
(3)	15.516	15.440	15.580
Tetrachloro-m-xylene	4.670	4.617	4.717
Decachlorobiphenyl	19.062	18.957	19.157

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1906 0519

LAB FILE ID: RT1: E1E0575R RT2: E1E0576R RT3: E1E0577R
RT4: E1E0578R RT5: E1E0579R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	9.910	9.910	9.910	9.910	9.910
(2)	10.280	10.280	10.280	10.280	10.280
(3)	11.570	11.570	11.570	11.570	11.570
Aroclor-1221	6.920	6.920	6.920	6.920	6.920
(2)	7.320	7.320	7.320	7.320	7.320
(3)	7.490	7.490	7.490	7.490	7.490
Aroclor-1232			7.480		
(2)			8.640		
(3)			9.910		
Aroclor-1242	9.900	9.910	9.910	9.910	9.910
(2)	10.280	10.280	10.280	10.280	10.280
(3)	12.720	12.720	12.720	12.720	12.720
Aroclor-1248	11.570	11.570	11.570	11.570	11.570
(2)	12.610	12.610	12.610	12.610	12.610
(3)	12.720	12.720	12.720	12.720	12.720
Aroclor-1254	14.450	14.450	14.450	14.450	14.450
(2)	15.060	15.060	15.060	15.060	15.060
(3)	16.480	16.480	16.480	16.480	16.480
Aroclor-1260	16.470	16.470	16.470	16.470	16.470
(2)	18.160	18.160	18.160	18.160	18.160
(3)	19.100	19.110	19.110	19.110	19.100
Tetrachloro-m-xylene	6.030	6.030	6.030	6.030	6.030
Decachlorobiphenyl	22.140	22.140	22.140	22.140	22.140

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date(s): 04/14/03 04/15/03

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 1906 0519

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	9.910	9.840	9.980
(2)	10.280	10.210	10.350
(3)	11.570	11.500	11.640
Aroclor-1221	6.920	6.850	6.990
(2)	7.320	7.247	7.387
(3)	7.490	7.417	7.557
Aroclor-1232	7.480	7.413	7.553
(2)	8.640	8.573	8.713
(3)	9.910	9.837	9.977
Aroclor-1242	9.908	9.840	9.980
(2)	10.280	10.210	10.350
(3)	12.720	12.650	12.790
Aroclor-1248	11.570	11.500	11.640
(2)	12.610	12.540	12.680
(3)	12.720	12.650	12.790
Aroclor-1254	14.450	14.383	14.523
(2)	15.060	14.993	15.133
(3)	16.480	16.407	16.547
Aroclor-1260	16.470	16.400	16.540
(2)	18.160	18.087	18.227
(3)	19.106	19.033	19.173
Tetrachloro-m-xylene	6.030	5.980	6.080
Decachlorobiphenyl	22.140	22.043	22.243

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 03/31/03 Time: 1230

Lab File ID: E1E0235F Init. Calib. Date(s): 03/27/03 03/27/03

Init. Calib. Times: 0100 0321

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	18272.480	20226.000	0.01	10.7	15.0	
(2)	10456.080	11743.000	0.01	12.3	15.0	
(3)	9472.120	10457.000	0.01	10.4	15.0	
Aroclor-1260	22644.440	26228.000	0.01	15.8	15.0	<-
(2)	34826.480	41261.000	0.01	18.5	15.0	<-
(3)	17432.400	21319.000	0.01	22.3	15.0	<-
Tetrachloro-m-xylene	444090.00	473500.00	0.01	6.6	15.0	
Decachlorobiphenyl	473488.00	512550.00	0.01	8.2	15.0	

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 03/31/03 Time: 1230

Lab File ID: E1E0235R Init. Calib. Date(s): 03/27/03 03/27/03

Init. Calib. Times: 0100 0321

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	42439.240	44101.000	0.01	3.9	15.0
(2)	21327.960	22217.000	0.01	4.2	15.0
(3)	19176.040	19854.000	0.01	3.5	15.0
Aroclor-1260	42454.200	43403.000	0.01	2.2	15.0
(2)	43156.600	44364.000	0.01	2.8	15.0
(3)	63035.440	66017.000	0.01	4.7	15.0
Tetrachloro-m-xylene	741592.00	754850.00	0.01	1.8	15.0
Decachlorobiphenyl	758212.00	767700.00	0.01	1.2	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 03/31/03 Time: 2256

Lab File ID: E1E0252F Init. Calib. Date(s): 03/27/03 03/27/03

Init. Calib. Times: 0100 0321

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	18272.480	18246.000	0.01	0.1	15.0
(2)	10456.080	10651.000	0.01	1.9	15.0
(3)	9472.120	10084.000	0.01	6.4	15.0
Aroclor-1260	22644.440	24121.000	0.01	6.5	15.0
(2)	34826.480	37889.000	0.01	8.8	15.0
(3)	17432.400	18952.000	0.01	8.7	15.0
Tetrachloro-m-xylene	444090.00	447400.00	0.01	0.7	15.0
Decachlorobiphenyl	473488.00	489100.00	0.01	3.3	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 03/31/03 Time: 2256

Lab File ID: E1E0252R Init. Calib. Date(s): 03/27/03 03/27/03

Init. Calib. Times: 0100 0321

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	42439.240	42125.000	0.01	0.7	15.0
(2)	21327.960	21364.000	0.01	0.2	15.0
(3)	19176.040	19484.000	0.01	1.6	15.0
Aroclor-1260	42454.200	42908.000	0.01	1.1	15.0
(2)	43156.600	44479.000	0.01	3.1	15.0
(3)	63035.440	64871.000	0.01	2.9	15.0
Tetrachloro-m-xylene	741592.00	741050.00	0.01	0.1	15.0
Decachlorobiphenyl	758212.00	772300.00	0.01	1.8	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 04/15/03 Time: 1243

Lab File ID: E1E0593F Init. Calib. Date(s): 04/15/03 04/15/03

Init. Calib. Times: 0316 0519

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	19958.960	21411.000	0.01	7.3	15.0
(2)	11327.440	12318.000	0.01	8.7	15.0
(3)	9829.840	10578.000	0.01	7.6	15.0
Aroclor-1260	26985.520	28729.000	0.01	6.5	15.0
(2)	23083.360	24951.000	0.01	8.1	15.0
(3)	35091.080	38097.000	0.01	8.6	15.0
Tetrachloro-m-xylene	457504.00	499750.00	0.01	9.2	15.0
Decachlorobiphenyl	438698.00	464550.00	0.01	5.9	15.0

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID: E1 Calibration Date: 04/15/03 Time: 1243

Lab File ID: E1E0593R Init. Calib. Date(s): 04/15/03 04/15/03

Init. Calib. Times: 0316 0519

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D
Aroclor-1016	48739.600	51201.000	0.01	5.0	15.0
(2)	24603.680	25733.000	0.01	4.6	15.0
(3)	21457.440	22139.000	0.01	3.2	15.0
Aroclor-1260	47237.680	49775.000	0.01	5.4	15.0
(2)	66649.720	68568.000	0.01	2.9	15.0
(3)	42743.920	44824.000	0.01	4.9	15.0
Tetrachloro-m-xylene	836878.00	883050.00	0.01	5.5	15.0
Decachlorobiphenyl	866468.00	894800.00	0.01	3.3	15.0

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: MB-6211

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0582F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) CONT Date Extracted: 03/19/03

Concentrated Extract Volume: 5000(uL) Date Analyzed: 04/15/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	0.50	U
11096-82-5	Aroclor-1260	0.50	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1K

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix: (soil/water) WATER Lab Sample ID: MB-6109

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0238F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/25/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/31/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1K	100	100	91	86			0
02	B1KLCS	89	86	90	85			0
03	B1KLCSD	82	79	92	86			0
04	WFF16GW5RE	68	69	60	56			0
05	WFF14GW5RE	74	75	54	52			0
06	WFF14GW3RE	64	66	75	74			0
07	WFF14GW4RE	61	64	62	60			0
08	MW101SRE	91	91	88	84			0
09	MW111SRE	86	87	84	80			0
10	BBLK1A	0*	0*	0*	0*			4
11	WFF16GW5	0*	0*	0*	0*			4
12	WFF14GW5	0*	0*	0*	0*			4
13	WFF14GW3	0*	0*	0*	0*			4
14	WFF14GW4	0*	0*	0*	0*			4
15	MW101S	0*	0*	0*	0*			4
16	MW111S	0*	0*	0*	0*			4
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix Spike - Sample No.: B1KLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		9.1	91	45-162
Aroclor-1260	10		9.3	93	54-159

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Aroclor-1016	10	9.0	90	1	40	45-162
Aroclor-1260	10	9.3	93	0	40	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 2 outside limits
Spike Recovery: 0 out of 4 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 19, 2003**
FROM:	**ETHAN G. LEE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0423

SAMPLES: 6/AQUEOUS/

FTA-MW-101S	FTA-MW-111S	FTA-WFF14-GW3
FTA-WFF14-GW4	FTA-WFF14-GW5	WOD-WFF16-GW5

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0423, consists of six (6) aqueous environmental samples. One (1) field duplicate pair (FTA-MW-111S / FTA-MW-110S) is included in this SDG.

All samples were analyzed for total and dissolved target analyte list (TAL) metals, chloride, nitrate, nitrite, sulfate, and total organic carbon (TOC). Samples analyzed for filtered metals were appended with the suffix "-F". The samples were collected by Tetra Tech NUS March 13, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Chloride, nitrate, nitrite, and sulfate were analyzed by Severn Trent Laboratories Connecticut. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7470A. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA method 300. TOC analyses were conducted using EPA method 415.1.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum	70.0 ug/L	350.0 ug/L
Antimony	6.2 ug/L	31.0 ug/L
Arsenic	3.4 ug/L	17.0 ug/L
Barium	5.9 ug/L	29.5 ug/L
Beryllium	0.6 ug/L	3.0 ug/L
Chromium	1.0 ug/L	5.0 ug/L
Cobalt	1.9 ug/L	9.5 ug/L
Copper	6.2 ug/L	31.0 ug/L
Iron[(1)]	31.467 ug/L	157.335 ug/L
Magnesium[(1)]	130.375 ug/L	651.875 ug/L
Manganese[(1)]	2.02 ug/L	10.1 ug/L
Nickel	2.3 ug/L	11.5 ug/L
Potassium	79.9 ug/L	399.5 ug/L
Thallium	3.0 ug/L	15.0 ug/L
Vanadium	1.3 ug/L	6.5 ug/L
Zinc[(1)]	18.548 ug/L	92.74 ug/L
Sulfate	0.031 mg/L	0.155 mg/L

[(1)] Maximum concentration present in aqueous preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, antimony, barium, chromium, cobalt, copper, iron, nickel, vanadium, and zinc were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or they were nondetects.

Notes

The matrix spike percent recovery (%R) was above the 125% control limit for antimony. However, no qualification action was required because all results were either previously qualified for blank contamination or they were nondetects.

Samples FTA-WFF14-GW3 and FTA-WFF14-GW4 were placed in the database in the filtered metal fraction, but they should have been placed in the unfiltered metal fraction. The data reviewer amended the database.

For metals and TOC, sample FTA-WFF14-GW3 was labeled incorrectly in the database as FTA-WFF14-G4. For TOC, sample FTA-WFF14-GW4 was labeled incorrectly in the database as FTA-MW-111SF. For metals, samples FTA-WFF14-GW5F and WOD-WFF16-GW5F were labeled incorrectly on the Form 1s as FTA-WFF14-GWSF and WOD-WFF16-GWSF, respectively. The data reviewer amended the database for all of these samples.

The data reviewer changed the sample IDs in the filtered fraction with the suffix "F" to "-F".

Contract required detection limit (CRDL) and ICP serial dilution could not be evaluated because the laboratory either did not perform these analyses or did not supply the information for these analyses.

The laboratory did not supply the required information for the interference check standard A (ICSA) on the Form 4; however, these results did not need to be evaluated because the interfering analytes were not present in the environmental samples at significant levels.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-101S	nsample	FTA-MW-111S	nsample	FTA-WFF14-GW3
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-06C	lab_id	B0423-07C	lab_id	B0423-04C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:	FTA-MW-111S	DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	109	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	32.7		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3130		
CHROMIUM	0.79	B	A
COBALT	3.3	B	A
COPPER	10.8	B	A
IRON	1020		
LEAD	4.0	U	
MAGNESIUM	3080		
MANGANESE	114		
MERCURY	0.13	U	
NICKEL	3.1	B	A
POTASSIUM	1310		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5810		
THALLIUM	3.0	U	
VANADIUM	0.87	B	A
ZINC	45.0	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	137	B	A
ANTIMONY	3.3	B	A
ARSENIC	3.0	U	
BARIUM	32.1		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3080		
CHROMIUM	1.2	B	A
COBALT	3.2	B	A
COPPER	7.6	B	A
IRON	1040		
LEAD	4.0	U	
MAGNESIUM	3100		
MANGANESE	116		
MERCURY	0.13	U	
NICKEL	2.9	B	A
POTASSIUM	1330		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	6010		
THALLIUM	3.0	U	
VANADIUM	0.99	B	A
ZINC	38.6	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	21.0	B	A
ANTIMONY	3.9	B	A
ARSENIC	3.0	U	
BARIUM	28.2	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	14800		
CHROMIUM	0.93	B	A
COBALT	1.9	B	A
COPPER	5.9	B	A
IRON	357		
LEAD	4.0	U	
MAGNESIUM	7710		
MANGANESE	22.7		
MERCURY	0.13	U	
NICKEL	1.3	B	A
POTASSIUM	1720		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	4290		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	27.0	B	A

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW4	nsample	FTA-WFF14-GW5	nsample	WOD-WFF16-GW5
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-05C	lab_id	B0423-03C	lab_id	B0423-02C
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	460		
ANTIMONY	3.6	B	A
ARSENIC	3.0	U	
BARIUM	32.3		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3710		
CHROMIUM	1.7	B	A
COBALT	2.6	B	A
COPPER	18.4	B	A
IRON	213		
LEAD	4.0	U	
MAGNESIUM	3570		
MANGANESE	13.1		
MERCURY	0.13	U	
NICKEL	2.9	B	A
POTASSIUM	625		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5410		
THALLIUM	3.0	U	
VANADIUM	1.5	B	A
ZINC	52.3	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	398		
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	18.5	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4620		
CHROMIUM	1.3	B	A
COBALT	3.0	B	A
COPPER	8.7	B	A
IRON	1740		
LEAD	4.0	U	
MAGNESIUM	4090		
MANGANESE	50.2		
MERCURY	0.14	U	
NICKEL	2.7	B	A
POTASSIUM	905		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5650		
THALLIUM	3.0	U	
VANADIUM	1.1	B	A
ZINC	32.4	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	927		
ANTIMONY	3.0	B	A
ARSENIC	3.0	U	
BARIUM	38.5		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	26600		
CHROMIUM	1.5	B	A
COBALT	2.0	B	A
COPPER	14.9	B	A
IRON	662		
LEAD	4.0	U	
MAGNESIUM	19900		
MANGANESE	30.6		
MERCURY	0.13	U	
NICKEL	2.1	B	A
POTASSIUM	10900		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3920		
THALLIUM	3.0	U	
VANADIUM	1.7	B	A
ZINC	36.8	B	A

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-101S-F	nsample	FTA-MW-111S-F	nsample	FTA-WFF14-GW3-F
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-12A	lab_id	B0423-13A	lab_id	B0423-10A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:	FTA-MW-111S-F	DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	27.4	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3110		
CHROMIUM	0.83	B	A
COBALT	3.0	B	A
COPPER	7.2	B	A
IRON	1060		
LEAD	4.0	U	
MAGNESIUM	3050		
MANGANESE	119		
MERCURY	0.13	U	
NICKEL	2.5	B	A
POTASSIUM	1360		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	6060		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	33.9	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	17.0	U	
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	27.1	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3040		
CHROMIUM	0.90	B	A
COBALT	2.7	B	A
COPPER	5.4	B	A
IRON	989		
LEAD	4.0	U	
MAGNESIUM	3040		
MANGANESE	116		
MERCURY	0.14	U	
NICKEL	2.2	B	A
POTASSIUM	1310		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	6030		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	41.6	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	99.1	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	30.4		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	15100		
CHROMIUM	1.5	B	A
COBALT	3.2	B	A
COPPER	5.5	B	A
IRON	390		
LEAD	4.0	U	
MAGNESIUM	7850		
MANGANESE	24.3		
MERCURY	0.14	U	
NICKEL	2.5	B	A
POTASSIUM	1760		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	4390		
THALLIUM	3.0	U	
VANADIUM	1.0	B	A
ZINC	26.8	B	A

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW4-F	nsample	FTA-WFF14-GW5-F	nsample	WOD-WFF16-GW5-F
samp_date	3/13/2003	samp_date	3/13/2003	samp_date	3/13/2003
lab_id	B0423-11A	lab_id	B0423-09A	lab_id	B0423-08A
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/L	units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	618		
ANTIMONY	3.0	B	A
ARSENIC	3.0	U	
BARIUM	27.0	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	3640		
CHROMIUM	0.99	B	A
COBALT	2.1	B	A
COPPER	11.3	B	A
IRON	108	B	A
LEAD	4.0	U	
MAGNESIUM	3850		
MANGANESE	11.5		
MERCURY	0.14	U	
NICKEL	1.9	B	A
POTASSIUM	620		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5190		
THALLIUM	3.0	U	
VANADIUM	0.77	B	A
ZINC	33.6	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	145	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	16.7	B	A
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	4710		
CHROMIUM	0.99	B	A
COBALT	3.1	B	A
COPPER	5.3	B	A
IRON	1600		
LEAD	4.0	U	
MAGNESIUM	4240		
MANGANESE	48.9		
MERCURY	0.13	U	
NICKEL	2.8	B	A
POTASSIUM	887		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	5870		
THALLIUM	3.0	U	
VANADIUM	0.89	B	A
ZINC	30.3	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	85.2	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	31.3		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	26400		
CHROMIUM	0.89	B	A
COBALT	2.2	B	A
COPPER	6.5	B	A
IRON	267		
LEAD	4.0	U	
MAGNESIUM	19300		
MANGANESE	29.8		
MERCURY	0.13	U	
NICKEL	1.5	B	A
POTASSIUM	10700		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	3790		
THALLIUM	3.0	U	
VANADIUM	0.70	U	
ZINC	27.8	B	A

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-MW-101S
samp_date	3/13/2003
lab_id	203237-005
qc_type	NM
Pct_Solids	0
DUP_OF:	FTA-MW-111S

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.9		
NITRATE	MG/L	1.7		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTA-MW-111S
samp_date	3/13/2003
lab_id	203237-006
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.9		
NITRATE	MG/L	1.9		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	11		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTA-WFF14-GW3
samp_date	3/13/2003
lab_id	203237-003
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	5.2		
NITRATE	MG/L	0.82		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	44		
TOTAL ORGANIC CARBON	MG/L	6	U	

PROJ_NO: 4740

SDG: B0423 MEDIA: WATER DATA FRACTION:

nsample	FTA-WFF14-GW4
samp_date	3/13/2003
lab_id	203237-004
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	7.5		
NITRATE	MG/L	0.43		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	8.8		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	FTA-WFF14-GW5
samp_date	3/13/2003
lab_id	203237-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	5.6		
NITRATE	MG/L	0.10	U	
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	6.3		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	WOD-WFF16-GW5
samp_date	3/13/2003
lab_id	203237-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	3.4		
NITRATE	MG/L	0.22		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	26		
TOTAL ORGANIC CARBON	MG/L	6	U	

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
MW101S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-06C

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	109	B	* 3/26/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	32.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3130			P
7440-47-3	Chromium	0.79	B		P
7440-48-4	Cobalt	3.3	B		P
7440-50-8	Copper	10.8	B	* 3/26/03	P
7439-89-6	Iron	1020		3/26/03	P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3080			P
7439-96-5	Manganese	114			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.1	B		P
7440-09-7	Potassium	1310			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5810			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.87	B		P
7440-66-6	Zinc	45.0	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111S

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

Matrix (soil/water): WATER_ Lab Sample ID: B0423-07C

Level (low/med): MED____ Date Received: 03/14/03____

% Solids: ____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	137	B		P
7440-36-0	Antimony	3.3	B	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	32.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3080			P
7440-47-3	Chromium	1.2	B		P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	7.6	B		P
7439-89-6	Iron	1040			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3100			P
7439-96-5	Manganese	116			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.9	B		P
7440-09-7	Potassium	1330			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	6010			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.99	B		P
7440-66-6	Zinc	38.6	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423___

Matrix (soil/water): WATER_ Lab Sample ID: B0423-04C

Level (low/med): MED____ Date Received: 03/14/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21.0	B	* RK 3/26/03	P
7440-36-0	Antimony	3.9	B	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	28.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	14800			P
7440-47-3	Chromium	0.93	B		P
7440-48-4	Cobalt	1.9	B		P
7440-50-8	Copper	5.9	B	* RK 3/26/03	P
7439-89-6	Iron	357			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	7710			P
7439-96-5	Manganese	22.7	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.3	B		P
7440-09-7	Potassium	1720			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	4290			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	27.0	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture:

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-05C

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	460		ZM 3/26/13	P
7440-36-0	Antimony	3.6	B	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	32.3	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3710			P
7440-47-3	Chromium	1.7	B		P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	18.4	B	ZM 3/26/13	P
7439-89-6	Iron	213			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3570			P
7439-96-5	Manganese	13.1	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.9	B		P
7440-09-7	Potassium	625	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5410			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.5	B		P
7440-66-6	Zinc	52.3			P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW5

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-03C

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	398		* JRC 3/16/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	18.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4620			P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	8.7	B	* JRC 3/16/03	P
7439-89-6	Iron	1740			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4090			P
7439-96-5	Manganese	50.2			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.7	B		P
7440-09-7	Potassium	905	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5650			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.1	B		P
7440-66-6	Zinc	32.4	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW5

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0423___

Matrix (soil/water): WATER_ Lab Sample ID: B0423-02C_____

Level (low/med): MED Date Received: 03/14/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	927		* 3/12/03	P
7440-36-0	Antimony	3.0	B	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	38.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	26600			P
7440-47-3	Chromium	1.5	B		P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	14.9	B	* 3/12/03	P
7439-89-6	Iron	662			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	19900			P
7439-96-5	Manganese	30.6	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.1	B		P
7440-09-7	Potassium	10900			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3920			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.7	B		P
7440-66-6	Zinc	36.8	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

I

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW101SF

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-12A

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U	* 3/26/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	27.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3110			P
7440-47-3	Chromium	0.83	B		P
7440-48-4	Cobalt	3.0	B		P
7440-50-8	Copper	7.2	B	* 3/26/03	P
7439-89-6	Iron	1060			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3050			P
7439-96-5	Manganese	119			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	1360			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	6060			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	33.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

I

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW111SF

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-13A

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U	* ZK finish	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	27.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3040			P
7440-47-3	Chromium	0.90	B		P
7440-48-4	Cobalt	2.7	B	ZK	P
7440-50-8	Copper	5.4	B	* ZK 4613	P
7439-89-6	Iron	989			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3040			P
7439-96-5	Manganese	116			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.2	B		P
7440-09-7	Potassium	1310			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	6030			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	41.6	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW3F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-10A

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	99.1	B	* RA 3/26/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	30.4	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	15100			P
7440-47-3	Chromium	1.5	B		P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	5.5	B	* RAC 3/26/03	P
7439-89-6	Iron	390			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	7850			P
7439-96-5	Manganese	24.3	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	1760			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	4390			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.0	B		P
7440-66-6	Zinc	26.8	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF14GW4F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Lab Sample ID: B0423-11A

Level (low/med): MED Date Received: 03/14/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	618		*3/26/03	P
7440-36-0	Antimony	3.0	B	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	27.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	3640			P
7440-47-3	Chromium	0.99	B		P
7440-48-4	Cobalt	2.1	B		P
7440-50-8	Copper	11.3	B	*3/26/03	P
7439-89-6	Iron	108	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	3850			P
7439-96-5	Manganese	11.5	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	1.9	B		P
7440-09-7	Potassium	620	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5190			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.77	B		P
7440-66-6	Zinc	33.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
WFF14GW5F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

Matrix (soil/water): WATER__ Lab Sample ID: B0423-09A

Level (low/med): MED_____ Date Received: 03/14/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	145	B	* RE 3/14/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4710			P
7440-47-3	Chromium	0.99	B		P
7440-48-4	Cobalt	3.1	B		P
7440-50-8	Copper	5.3	B	* RE 3/14/03	P
7439-89-6	Iron	1600			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4240			P
7439-96-5	Manganese	48.9	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	887	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	5870			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.89	B		P
7440-66-6	Zinc	30.3	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
WFF16GW5F

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

Matrix (soil/water): WATER Lab Sample ID: B0423-08A_____

Level (low/med): MED____ Date Received: 03/14/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	85.2	B	* RAC 3/12/03	P
7440-36-0	Antimony	3.0	U	N	P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	31.3	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	26400			P
7440-47-3	Chromium	0.89	B		P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	6.5	B	* RAC 3/12/03	P
7439-89-6	Iron	267			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	19300			P
7439-96-5	Manganese	29.8	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	1.5	B		P
7440-09-7	Potassium	10700			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	3790			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	27.8	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts:

Comments:

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LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0423-06D
Date Sampled.....: 03/13/2003
Time Sampled.....: 15:50
Sample Matrix.....: Water

Laboratory Sample ID: 203237-5
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.9			0.15	1.0	1	mg/L	15182		03/15/03 2013	ddm
	Nitrate as N (NO3-N)	1.7			0.002	0.10	1	mg/L	15182		03/15/03 2013	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 2013	ddm
	Sulfate	11			0.012	1.0	1	mg/L	15182		03/15/03 2013	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: MW101S
Lab ID: B0423-06
Project: Wallops Island
Collection Date: 03/13/03 15:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0423-07D
Date Sampled.....: 03/13/2003
Time Sampled.....: 08:50
Sample Matrix.....: Water

Laboratory Sample ID: 203237-6
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.9			0.15	1.0	1	mg/L	15182		03/15/03 2026	ddm
	Nitrate as N (NO3-N)	1.9			0.002	0.10	1	mg/L	15182		03/15/03 2026	ddm
	Nitrite as N (NO2-N)	ND		U	0.003	0.10	1	mg/L	15182		03/15/03 2026	ddm
	Sulfate	11			0.012	1.0	1	mg/L	15182		03/15/03 2026	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: MW111S
Lab ID: B0423-07

Project: Wallops Island
Collection Date: 03/13/03 8:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0423-04D
Date Sampled.....: 03/13/2003
Time Sampled.....: 12:05
Sample Matrix.....: Water

Laboratory Sample ID: 203237-3
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	5.2			0.15	1.0	1	mg/L	15182		03/15/03 1919	dckm
	Nitrate as N (NO3-N)	0.82			0.002	0.10	1	mg/L	15182		03/15/03 1919	dckm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1919	dckm
	Sulfate	44			0.012	1.0	1	mg/L	15182		03/15/03 1919	dckm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF14GW3
Lab ID: B0423-04

Project: Wallops Island
Collection Date: 03/13/03 12:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEN PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0423-05D
Date Sampled.....: 03/13/2003
Time Sampled.....: 14:45
Sample Matrix.....: Water

Laboratory Sample ID: 203237-4
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	7.5			0.15	1.0	1	mg/L	15182		03/15/03 1959	ddm
	Nitrate as N (NO3-N)	0.43			0.002	0.10	1	mg/L	15182		03/15/03 1959	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1959	ddm
	Sulfate	8.8			0.012	1.0	1	mg/L	15182		03/15/03 1959	ddm

0000042

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF14GW4
Lab ID: B0423-05

Project: Wallops Island
Collection Date: 03/13/03 14:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0423-03D
Date Sampled.....: 03/13/2003
Time Sampled.....: 10:05
Sample Matrix.....: Water

Laboratory Sample ID: 203237-2
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	5.6			0.15	1.0	1	mg/L	15182		03/15/03 1905	ddm
	Nitrate as N (NO3-N)	ND	U		0.002	0.10	1	mg/L	15182		03/15/03 1905	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1905	ddm
	Sulfate	6.3			0.012	1.0	1	mg/L	15182		03/15/03 1905	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF14GW5
Lab ID: B0423-03

Project: Wallops Island
Collection Date: 03/13/03 10:05

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203237

Date:03/21/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0423-02D
Date Sampled.....: 03/13/2003
Time Sampled.....: 07:50
Sample Matrix.....: Water

Laboratory Sample ID: 203237-1
Date Received.....: 03/15/2003
Time Received.....: 10:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	3.4			0.15	1.0	1	mg/L	15182		03/15/03 1852	ddm
	Nitrate as N (NO3-N)	0.22			0.002	0.10	1	mg/L	15182		03/15/03 1852	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15182		03/15/03 1852	ddm
	Sulfate	26			0.012	1.0	1	mg/L	15182		03/15/03 1852	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW5
Lab ID: B0423-02
Project: Wallops Island
Collection Date: 03/13/03 7:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C

SUPPORT DOCUMENTATION

B0423

HOLDING TIME
05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	FTA-MW-101S	203237-005		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004	NORMAL	B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	CL	03/13/03	/ /	03/15/03	0	0	2
UG/L	FTA-MW-101S	B0423-06C	NORMAL	B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-111S	B0423-07C	NORMAL	B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW5	B0423-03C		B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
%	LCSW	0317LCSW	LCS	B0423	HG	/ /	03/17/03	03/18/03	0	1	0
UG/L	PBW	0317PBW	M_BLANK	B0423	HG	/ /	03/17/03	03/18/03	0	1	0
UG/L	WOD-WFF16-GW5	B0423-02C		B0423	HG	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-101SF	B0423-12A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-111SF	B0423-13A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW3F	B0423-10A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-WFF14-GW4F	B0423-11A	NORMAL	B0423	HGF	03/13/03	03/17/03	03/18/03	4	1	5
UG/L	FTA-MW-101S	B0423-06C	NORMAL	B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-111S	B0423-07C	NORMAL	B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-WFF14-GW5	B0423-03C		B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
%	LCSW	0317LCSW	LCS	B0423	M	/ /	03/17/03	03/19/03	0	2	0
UG/L	PBW	0317PBW	M_BLANK	B0423	M	/ /	03/17/03	03/19/03	0	2	0
UG/L	WOD-WFF16-GW5	B0423-02C		B0423	M	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-101SF	B0423-12A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-MW-111SF	B0423-13A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
UG/L	FTA-WFF14-GW3F	B0423-10A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
UG/L	FTA-WFF14-GW4F	B0423-11A	NORMAL	B0423	MF	03/13/03	03/17/03	03/19/03	4	2	6
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	NTA	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004	NORMAL	B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	NTI	03/13/03	/ /	03/15/03	0	0	2
%	FTA-MW-101S	B0423-06E	NORMAL	B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
UG/L	FTA-MW-111S	B0423-07E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-WFF14-GW4	B0423-05E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-WFF14-GW5	B0423-03E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	SBLK2L	MB-6211	M_BLANK	B0423	OS	/ /	03/19/03	04/12/03	0	24	0
%	SBLK2LLCS	LCS-6211	LCS	B0423	OS	/ /	03/19/03	04/12/03	0	24	0
%	WOD-WFF16-GW5	B0423-02E		B0423	OS	03/13/03	03/19/03	04/12/03	6	24	30
%	FTA-MW-101S	B0423-06A	NORMAL	B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-MW-101SF	B0423-05A	NORMAL	B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-MW-111S	B0423-07A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	FTA-WFF14-GW5	B0423-03A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	VBLK5U	V5B0325A	M_BLANK	B0423	OV	/ /	03/25/03	03/25/03	0	0	0
%	VBLK5ULCS	V5L0325A	LCS	B0423	OV	/ /	03/25/03	03/25/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	WOD-WFF16-GW5	B0423-02A		B0423	OV	03/13/03	03/25/03	03/25/03	12	0	12
%	BBLK1A	MB-6211	M_BLANK	B0423	PCB	/ /	03/19/03	04/15/03	0	27	0
%	BBLK1K	MB-6109	M_BLANK	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	BBLK1KLCS	LCS-6208	LCS	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	BBLK1KLCSD	LCSD-6208	LCSD	B0423	PCB	/ /	03/25/03	03/31/03	0	6	0
%	FTA-MW-101S	B0423-06E	NORMAL	B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-MW-101SRE	B0423-06ERE	NORMAL	B0423	PCB	03/13/03	03/25/03	03/31/03	12	6	18
%	FTA-MW-111S	B0423-07E	NORMAL	B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-MW-111SRE	B0423-07ERE	NORMAL	B0423	PCB	03/13/03	03/25/03	03/31/03	12	6	18
%	FTA-WFF14-GW4	B0423-05E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	FTA-WFF14-GW5	B0423-03E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
%	WOD-WFF16-GW5	B0423-02E		B0423	PCB	03/13/03	03/19/03	04/15/03	6	27	33
MG/L	FTA-MW-101S	203237-005	NORMAL	B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-111S	203237-006	NORMAL	B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW3	203237-003		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW4	203237-004		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-WFF14-GW5	203237-002		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	WOD-WFF16-GW5	203237-001		B0423	SO4	03/13/03	/ /	03/15/03	0	0	2
MG/L	FTA-MW-101S	B0423-06B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-MW-111S	B0423-07B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-MW-111SF	B0423-05B	NORMAL	B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
MG/L	FTA-WFF14-GW5	B0423-03B		B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7
%	LCS-6239	LCS-6239	LCS	B0423	TOC	/ /	03/20/03	03/20/03	0	0	0
MG/L	MB-6239	MB-6239	M_BLANK	B0423	TOC	/ /	03/20/03	03/20/03	0	0	0
MG/L	WOD-WFF16-GW5	B0423-02B		B0423	TOC	03/13/03	03/20/03	03/20/03	7	0	7

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0423
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of prussia PA 19406		CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME: | CLIENT PROJECT #: | CLIENT P.O.#:

REQUESTED ANALYSES: 40ml VOA Vial HCl Low Conc 624 TCL VOC + MTBE + TCL 135 TMB; 40ml VOA Vial HCl TCL VOC + MTBE; TCL SVOC Fraction Amber Glass; TCL PCB 1 Liter Amber Glass; 500ml Poly HNO3 Chloride, Sulfate, Nitrate, Nitrite; 500ml Poly HNO3 TAL Metals; 500ml Poly HNO3 Dissolved Metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA Vial HCl Low Conc 624 TCL VOC + MTBE + TCL 135 TMB	40ml VOA Vial HCl TCL VOC + MTBE	TCL SVOC Fraction Amber Glass	TCL PCB 1 Liter Amber Glass	500ml Poly HNO3 Chloride, Sulfate, Nitrate, Nitrite	500ml Poly HNO3 TAL Metals	500ml Poly HNO3 Dissolved Metals	COMMENTS
TB-031303	3/13/03 0700		X	X			01	2	2							Trip Blank
WOD-WFF16-GW5	3/13/03 0750		X	X			02	8	2	2	1	1	1	1		
FTA-WFF14-GW5	3/13/03 1005		X	X			03	8	2	2	1	1	1	1		
FTA-WFF14-GW3	3/13/03 1205		X	X			04	20	6	2 (4 3/14/03)	3	3	3	3		DO MS/MSD
FTA-WFF14-GW4	3/13/03 1445		X	X			05	8	2	2	1	1	1	1		
FTA-MW-101S	3/13/03 1550		X	X			06	8	2	2	1	1	1	1		
FTA-MW-111S	3/13/03 0850		X	X			07	8	2	2	1	1	1	1		
WOD-WFF16-GW5F	3/13/03 0750		X	X			08								1	
FTA-WFF14-GW5F	3/13/03 1005		X	X			09								1	
FTA-WFF14-GW3F	3/13/03 1205		X	X			10								9	DO MS/MSD
FTA-WFF14-GW4F	3/13/03 1445		X	X			11								1	
FTA-MW-101SF	3/13/03 1550		X	X			12								1	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charlie Meyer	3/13/03 1930	[signature]	3-14-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Laboratory Provided Trip Blank For Sampling
Samples Shipped Under Airbill No 8286 8464 5072

COOLER TEMP: 3C

0000111

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO			INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9686		COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0423
NAME: Garth Glenn	FAX: 610 491 9645		NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3			ADDRESS: Foster Plaza XII 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406			CITY/ST/ZIP: Pittsburgh, PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	500 ml poly HNO3 Dissolved Metals	COMMENTS
FTA-MW-111SF	3/13/03 / 0850		X	X			13	1	✓	
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

REQUESTED ANALYSES

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/13/03 / 1830	[signature]	3/14-03 / 0900
		/		/
		/		/

ADDITIONAL REMARKS: shipped via Federal Express Airbill NO 8286 8464 5072

COOLER TEMP: 3C

000012

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0423

Mitkem Project ID: B0423

April 22, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 13, 2003, and received at Mitkem on March 14, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF14GW3. Spike recoveries and replicate RPDs were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of the following: low recovery of 2,4-dimethylphenol, hexachlorcylcopentadiene and 3,3'-dichlorobenzidine and high recovery of4-chloroaniline and 4,6-dinitro-2-methylphenol.

Matrix spike/matrix spike duplicate: duplicate matrix spikes were performed on sample WFF14GW3. Spike recoveries were within the QC limits with the exception of several compounds in both the matrix spike and matrix spike duplicate and no recovery of 3,3'-dichlorobenzidine in both the matrix spike and matrix spike duplicate. Replicate RPDs were within the QC limits with the exception of 2,4-dimethylphenol.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits with the exception of no surrogate recovery in method blank BBLK1A and associated samples. Method blank BBLK1A and associated samples were semivolatile sample extracts that were exchanged into hexane and analyzed for PCBs.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: due to login error, samples WFF16GW5, WFF14GW3, WFF14GW5, WFF14GW4, MW101S and MW111S were logged in for aqueous semivolatile analysis and soil PCB analysis. The samples were extracted for semivolatile analysis. The samples were not extracted for PCBs as they were logged in as soil samples, therefore a longer holding time. The semivolatile extracts were exchanged into hexane and analyzed for PCB. The samples were extracted outside of holding time for PCB and designated as "RE" samples. Both sets of data are reported. No other unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF14GW3. Spike recoveries were within the QC limits with the exception of antimony. Form 1's are flagged with an "N" flag for antimony. A post digest spike was performed with spike recovery within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF14GW3. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Matrix spike: matrix spike was performed on sample WFF14GW4. Spike recovery was within the QC limits. Matrix spike was performed on WFF14GW4 instead of WFF14GW3 due to limited sample volume.

Matrix duplicate: matrix duplicate was performed on sample WFF14GW3. Replicate RPD was within QC limits.

Sample analysis: no other unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/22/03

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

SOW No.: ILM04.0__

EPA Sample No.	Lab Sample ID
MW101S	__B0423-06C_____
__MW101SF_____	__B0423-12A_____
__MW111S_____	B0423-07C
__MW111SF_____	__B0423-13A_____
WFF14GW3	__B0423-04C_____
WFF14GW3D	__B0423-04CD_____
__WFF14GW3F_____	__B0423-10A_____
__WFF14GW3S_____	__B0423-04CS_____
__WFF14GW4_____	B0423-05C
__WFF14GW4F_____	B0423-11A
__WFF14GW5_____	__B0423-03C_____
__WFF14GWSF_____	__B0423-09A_____
__WFF16GW5_____	B0423-02C
__WFF16GWSF_____	__B0423-08A_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

_____

_____

_____

_____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: _____ Name: Terrence A. Cerroni

Date: 3/26/13 Title: Chemist

ANALYTICAL REPORT

JOB NUMBER: 203237

Prepared For:

MITKEM
175 Metro Center Boulevard
Warwick, RI 02886-1755

Project: NITRATE SULFATE

Attention: Paul Senecal

Date: 03/21/2003

Johanna L Dubauskas
Signature

3.21.03
Date

Name: Johanna L. Dubauskas

Title: Project Manager

E-Mail: jdubauskas@stl-inc.com

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

This Report Contains (65) Pages

SEVERN TRENT **STL**

STL Report : 203237
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Several samples were received beyond the 48 hour holding time for nitrate and nitrite. STL analyzed them as soon as possible on the day of receipt.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A. Cascella for
Jeffrey C. Curran
Laboratory Manager

March 21, 2003
Date

SAMPLE INFORMATION

Date: 03/21/2003

Job Number.: 203237
Customer...: MITKEM
Attn.....: Paul Senecal

Project Number.....: 20000646
Customer Project ID....: NITRATE SULFATE
Project Description....: Nitrate/Sulfate

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
203237-1	B0423-02D	Water	03/13/2003	07:50	03/15/2003	10:45
203237-2	B0423-03D	Water	03/13/2003	10:05	03/15/2003	10:45
203237-3	B0423-04D	Water	03/13/2003	12:05	03/15/2003	10:45
203237-4	B0423-05D	Water	03/13/2003	14:45	03/15/2003	10:45
203237-5	B0423-06D	Water	03/13/2003	15:50	03/15/2003	10:45
203237-6	B0423-07D	Water	03/13/2003	08:50	03/15/2003	10:45

0000002

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423____

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	24.5	B	54.2	B	17.4	B	29.130	B	P
Antimony	6.2	B	5.8	B	5.9	B	5.6	B	3.000	U	P
Arsenic	3.4	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	4.8	B	4.0	U	4.1	B	4.0	B	5.297	B	P
Beryllium	0.6	B	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	1.0	B	0.7	B	0.6	U	0.6	U	0.666	B	P
Cobalt	1.9	B	1.4	B	1.3	B	1.3	B	1.410	B	P
Copper	6.2	B	4.0	U	4.0	U	4.0	B	4.007	B	P
Iron	26.0	U	26.0	U	28.7	B	26.0	U	31.467	B	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	20.3	B	49.4	B	108.2	B	42.1	B	130.375	B	P
Manganese	1.6	B	1.1	B	1.2	B	1.1	B	2.020	B	P
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.100	U	CV
Nickel	2.3	B	1.6	B	1.5	B	1.5	B	1.358	B	P
Potassium	79.9	B	78.0	U	78.0	U	78.0	U	78.000	U	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	83.0	U	83.0	U	83.0	U	83.0	U	83.000	U	P
Thallium	3.0	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium	1.3	B	0.9	B	0.7	U	1.1	B	0.700	U	P
Zinc	9.2	B	7.0	U	7.0	U	7.0	U	18.548	B	P
Cyanide											

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3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ___

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423___

Preparation Blank Matrix (soil/water): ___

Preparation Blank Concentration Units (ug/L or mg/kg): ___

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum			42.0	B	17.0	U	70.0	B			P
Antimony			4.8	B	3.3	B	4.2	B			P
Arsenic			3.0	U	3.0	U	3.0	U			P
Barium			5.9	B	4.0	U	4.9	B			P
Beryllium			0.5	U	0.5	U	0.5	U			P
Cadmium			0.7	U	0.7	U	0.7	U			P
Calcium			240.0	U	240.0	U	240.0	U			P
Chromium			0.6	B	0.6	U	0.6	U			P
Cobalt			1.8	B	1.2	B	1.6	B			P
Copper			4.7	B	4.0	U	4.0	U			P
Iron			26.0	U	26.0	U	28.1	B			P
Lead			4.0	U	4.0	U	4.0	U			P
Magnesium			76.9	B	31.2	B	102.2	B			P
Manganese			1.6	B	1.1	B	1.3	B			P
Mercury			0.1	U							CV
Nickel			1.8	B	1.4	B	1.5	B			P
Potassium			78.0	U							P
Selenium			9.0	U	9.0	U	9.0	U			P
Silver			2.0	U	2.0	U	2.0	U			P
Sodium			83.0	U							P
Thallium			3.0	U	3.0	U	3.0	U			P
Vanadium			1.2	B	0.8	B	1.0	B			P
Zinc			7.3	B	7.0	U	7.0	U			P
Cyanide											

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WFF14GW3S

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Matrix (soil/water): WATER Level (low/med): MED

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	80-120	9670.1365		21.0055	B	9100.00	106.0		P
Antimony	75-125	591.6810		3.9015	B	455.00	129.2	N	P
Arsenic	75-125	483.4915		3.0000	U	455.00	106.3		P
Barium	75-125	9744.0580		28.2140	B	9100.00	106.8		P
Beryllium	75-125	240.9665		0.5000	U	227.00	106.2		P
Cadmium	75-125	236.5490		0.7000	U	227.00	104.2		P
Calcium									NR
Chromium	75-125	970.3060		0.9330	B	910.00	106.5		P
Cobalt	75-125	2467.0555		1.9275	B	2270.00	108.6		P
Copper	75-125	1184.3340		5.9465	B	1130.00	104.3		P
Iron	80-120	5204.9130		356.7505		4550.00	106.6		P
Lead	75-125	469.9880		4.0000	U	455.00	103.3		P
Magnesium									NR
Manganese	75-125	2400.9740		22.6890	B	2270.00	104.8		P
Mercury	75-125	3.9882		0.1320	U	4.62	86.3		CV
Nickel	75-125	2340.1485		1.3495	B	2200.00	106.3		P
Potassium									NR
Selenium	75-125	470.5020		9.0000	U	455.00	103.4		P
Silver	75-125	1216.2115		2.0000	U	1130.00	107.6		P
Sodium									NR
Thallium	75-125	471.0915		3.0000	U	420.00	112.2		P
Vanadium	75-125	2401.9515		0.7000	U	2270.00	105.8		P
Zinc	75-125	2409.2720		26.9825	B	2270.00	104.9		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

WFF14GW3A

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

Matrix (soil/water): WATER Level (low/med): MED___

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		483.86		3.90	B	455.0	105.5		P
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium									NR
Silver									NR
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

Mitkem Corporation

Date: *10-Apr-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0423
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6239**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **3/20/03**		Run ID: **TOC1_030320A**			
Client ID: **MB-6239**	Batch ID: **6239**	Units: **mg/L**			Analysis Date: **3/20/03**		SeqNo: **97028**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6239**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/20/03**		Run ID: **TOC1_030320A**			
Client ID: **LCS-6239**	Batch ID: **6239**	Units: **mg/L**			Analysis Date: **3/20/03**		SeqNo: **97027**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	52.7	6.0	54.1	0	97.4	72.5	126	0	0		

Sample ID **B0423-05BMS**	SampType: **MS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/20/03**		Run ID: **TOC1_030320A**			
Client ID: **WFF14GW4**	Batch ID: **6239**	Units: **mg/L**			Analysis Date: **3/20/03**		SeqNo: **97018**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	18.21	6.0	20	0	91.1	75	125	0	0		

Sample ID **B0423-04BDUP**	SampType: **DUP**	TestCode: **E415.1_TOC_W**			Prep Date: **3/20/03**		Run ID: **TOC1_030320A**			
Client ID: **WFF14GW3**	Batch ID: **6239**	Units: **mg/L**			Analysis Date: **3/20/03**		SeqNo: **97016**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0	0	0	0	0	0	0	0	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

QUALITY CONTROL RESULTS

Job Number.: 203237 Report Date.: 03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: CHL
Parameter.....: Chloride

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	50.00000		50.00000					03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	30.00000		30.00000					03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	10.00000		10.00000					03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	4.00000		4.00000					03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	1.00000		1.00000					03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	0.50000 B		0.50000					03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	24.73500		25.00000		99		90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.14700 U							03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	24.76300		25.00000		99	%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.14700 U							03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	24.12000		24.00000	0.14700 U	100		75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	10.09100		11.40000		89	%	85-115	03/15/2003	1611
LCS	15182-015	W03CLCS005	mg/L	9.67800		11.40000		85	%	85-115	03/15/2003	1624
MB	15182-016		mg/L	0.14700 U							03/15/2003	1638
MD	203236-4		mg/L	4.43800			4.44200	0.0040		1.0000	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	28.47600		24.00000	4.44200	100		75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	24.80500		25.00000		99	%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.14700 U							03/15/2003	1825
MD	203237-3		mg/L	5.16200			5.16700	0.1		20.0	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	29.84600		24.00000	5.16700	103		75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	24.98300		25.00000		100	%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.14700 U							03/15/2003	2053

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	5.00000		5.00000					03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	3.00000		3.00000					03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	1.00000		1.00000					03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	0.40000		0.40000					03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	0.10000		0.10000					03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	0.05000 B		0.05000					03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	2.49800		2.50000		100		90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.00200 U							03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	2.49900		2.50000		100	%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.00200 U							03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	1.98100		2.00000	0.00200 U	99		75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	11.00500		9.71000		113	%	85-115	03/15/2003	1611
LCS	15182-015	W03CLCS005	mg/L	8.80800		9.71000		91	%	85-115	03/15/2003	1624
MB	15182-016		mg/L	0.00200 U							03/15/2003	1638
MD	203236-4		mg/L	0.07600 B			0.07200 B	0.0040		0.1000	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	2.00300		2.00000	0.07200 B	97		75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	2.51400		2.50000		101	%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.00200 U							03/15/2003	1825
MD	203237-3		mg/L	0.85200			0.81600	4.3		20.0	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	2.92800		2.00000	0.81600	106		75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	2.59200		2.50000		104	%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.00200 U							03/15/2003	2053

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000016

QUALITY CONTROL RESULTS

Job Number.: 203237 Report Date.: 03/21/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	5.00000		5.00000						03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	3.00000		3.00000						03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	1.00000		1.00000						03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	0.40000		0.40000						03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	0.10000		0.10000						03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	0.05000 B		0.05000						03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	2.44600		2.50000		98			90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.00300 U								03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	2.45000		2.50000		98		%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.00300 U								03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	1.92100		2.00000	0.00300 U	96			75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	5.63900		5.00000		113		%	85-115	03/15/2003	1611
LCS	15182-015	W03CLCS005	mg/L	5.10300		5.00000		102		%	85-115	03/15/2003	1624
MB	15182-016		mg/L	0.00300 U								03/15/2003	1638
MD	203236-4		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	1.85800		2.00000	0.00300 U	93			75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	2.42400		2.50000		97		%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.00300 U								03/15/2003	1825
MD	203237-3		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	1.85300		2.00000	0.00300 U	93			75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	2.45100		2.50000		98		%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.00300 U								03/15/2003	2053

Test Method.....: 300.0 Batch.....: 15182 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15182-002	W03CWRK009	mg/L	100.00000		100.00000						03/15/2003	1330
STD	15182-003	W03CWRK010	mg/L	60.00000		60.00000						03/15/2003	1343
STD	15182-004	W03CWRK011	mg/L	20.00000		20.00000						03/15/2003	1357
STD	15182-005	W03CWRK012	mg/L	8.00000		8.00000						03/15/2003	1410
STD	15182-006	W03CWRK013	mg/L	2.00000		2.00000						03/15/2003	1424
STD	15182-007	W03CWRK014	mg/L	1.00000		1.00000						03/15/2003	1437
ICV	15182-009	W03CWRK018	mg/L	51.04400		50.00000		102			90-110	03/15/2003	1504
ICB	15182-010		mg/L	0.01200 U								03/15/2003	1517
CCV	15182-011	W03CWRK018	mg/L	51.02800		50.00000		102		%	90-110	03/15/2003	1531
CCB	15182-012		mg/L	0.03100 B								03/15/2003	1544
MS	15182-013	W03CSPK001	mg/L	19.30400		20.00000	0.01200 U	97			75-125	03/15/2003	1557
LCS	15182-014	W03CLCS005	mg/L	8.23300		9.21000		89		%	85-115	03/15/2003	1611
MB	15182-016		mg/L	0.01200 U								03/15/2003	1638
MD	203236-4		mg/L	6.32800			6.32100	0.1			20.0	03/15/2003	1745
MS	203236-4	W03CSPK001	mg/L	26.46400		20.00000	6.32100	101			75-125	03/15/2003	1758
CCV	15182-023	W03CWRK018	mg/L	52.10900		50.00000		104		%	90-110	03/15/2003	1812
CCB	15182-024		mg/L	0.01200 U								03/15/2003	1825
MD	203237-3		mg/L	43.88900			43.97600	0.2			20.0	03/15/2003	1932
MS	203237-3	W03CSPK001	mg/L	62.90400		20.00000	43.97600	95			75-125	03/15/2003	1946
CCV	15182-034	W03CWRK018	mg/L	52.47900		50.00000		105		%	90-110	03/15/2003	2039
CCB	15182-035		mg/L	0.01500 B								03/15/2003	2053

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000017

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10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423___

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.84		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium	227.55		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			1000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

U.S. EPA - CLP

10
INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0423

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number: _____

Furnace AA ID Number: _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		5	0.5	P
Cadmium	226.50		5	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		1000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

U.S. EPA - CLP

10

INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			5		NR
Cadmium			5		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			1000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/17/03		50
MW101S	03/17/03		50
MW101SF	03/17/03		50
MW111S	03/17/03		50
MW111SF	03/17/03		50
PBW	03/17/03		50
WFF14GW3	03/17/03		50
WFF14GW3D	03/17/03		50
WFF14GW3F	03/17/03		50
WFF14GW3S	03/17/03		50
WFF14GW4	03/17/03		50
WFF14GW4F	03/17/03		50
WFF14GW5	03/17/03		50
WFF14GWSF	03/17/03		50
WFF16GW5	03/17/03		50
WFF16GWSF	03/17/03		50

U.S. EPA - CLP

13
PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423____

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/17/03		100
MW101S	03/17/03		128
MW101SF	03/17/03		134
MW111S	03/17/03		126
MW111SF	03/17/03		140
PBW	03/17/03		100
WFF14GW3	03/17/03		132
WFF14GW3D	03/17/03		128
WFF14GW3F	03/17/03		138
WFF14GW3S	03/17/03		132
WFF14GW4	03/17/03		130
WFF14GW4F	03/17/03		140
WFF14GW5	03/17/03		142
WFF14GWSF	03/17/03		126
WFF16GW5	03/17/03		126
WFF16GWSF	03/17/03		134

FORM XIII - IN SW846

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423

Instrument ID Number: OPTIMA_1A Method: P___

Start Date: 03/18/03 End Date: 03/18/03___

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1255																				X				
S1	1.00	1258																				X				
S2	1.00	1300																				X				
S3	1.00	1302																				X				
ZZZZZZ	1.00	1305																								
ICV	1.00	1307																				X				
ICB	1.00	1309																				X				
ICSA	1.00	1312																								
ICSAB	1.00	1314																				X				
ZZZZZZ	1.00	1316																								
ZZZZZZ	1.00	1318																								
ZZZZZZ	1.00	1321																								
ZZZZZZ	1.00	1323																								
ZZZZZZ	1.00	1325																								
ZZZZZZ	1.00	1328																								
ZZZZZZ	1.00	1330																								
CCV	1.00	1332																				X				
CCB	1.00	1335																				X				
ZZZZZZ	1.00	1337																								
ZZZZZZ	1.00	1339																								
ZZZZZZ	1.00	1341																								
ZZZZZZ	1.00	1344																								
ZZZZZZ	1.00	1346																								
ZZZZZZ	1.00	1349																								
ZZZZZZ	1.00	1351																								
ZZZZZZ	1.00	1353																								
ZZZZZZ	1.00	1355																								
ZZZZZZ	1.00	1358																								
CCV	1.00	1400																				X				
CCB	1.00	1402																				X				
PBW	1.00	1405																				X				
LCSW	1.00	1407																				X				

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423__

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/18/03 End Date: 03/18/03

EPA Sample No.	D/F	Time	% R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
WFF16GW5	1.00	1409																				X				
WFF14GW5	1.00	1411																				X				
WFF14GW3	1.00	1414																				X				
WFF14GW3D	1.00	1416																				X				
WFF14GW4	1.00	1418																				X				
MW101S	1.00	1421																				X				
CCV	1.00	1423																				X				
CCB	1.00	1425																				X				
MW111S	1.00	1428																				X				
WFF16GWSF	1.00	1430																				X				
WFF14GWSF	1.00	1432																				X				
WFF14GW3F	1.00	1435																				X				
WFF14GW4F	1.00	1437																				X				
MW101SF	1.00	1439																				X				
MW111SF	1.00	1441																				X				
ICSA	1.00	1444																								
ICSAB	1.00	1446																				X				
CCV	1.00	1448																				X				
CCB	1.00	1451																				X				

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID Number: OPTIMA_1A Method: P

Start Date: 03/18/03 End Date: 03/18/03

EPA Sample No.	D/F	Time	% R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1452																		X							
S1	1.00	1455																		X							
S2	1.00	1457																		X							
S3	1.00	1459																		X							
ZZZZZZ	1.00	1502																									
ICV	1.00	1504																		X							
ICB	1.00	1506																		X							
ICSA	1.00	1509																									
ICSAB	1.00	1511																		X							
ZZZZZZ	1.00	1513																									
ZZZZZZ	1.00	1515																									
ZZZZZZ	1.00	1518																									
ZZZZZZ	1.00	1520																									
ZZZZZZ	1.00	1522																									
ZZZZZZ	1.00	1525																									
ZZZZZZ	1.00	1527																									
CCV	1.00	1529																		X							
CCB	1.00	1531																		X							
ZZZZZZ	1.00	1534																									
ZZZZZZ	1.00	1536																									
ZZZZZZ	1.00	1538																									
ZZZZZZ	1.00	1541																									
ZZZZZZ	1.00	1543																									
ZZZZZZ	1.00	1545																									
ZZZZZZ	1.00	1548																									
ZZZZZZ	1.00	1550																									
ZZZZZZ	1.00	1552																									
ZZZZZZ	1.00	1555																									
CCV	1.00	1557																		X							
CCB	1.00	1559																		X							
PBW	1.00	1601																		X							
LCSW	1.00	1604																		X							

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423__

Instrument ID Number: OPTIMA_1A_____ Method: P___

Start Date: 03/18/03___ End Date: 03/18/03___

EPA Sample No.	D/F	Time	%R	Analytes																						
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
WFF16GW5	1.00	1606																		X						
WFF14GW5	1.00	1608																		X						
WFF14GW3	1.00	1611																		X						
WFF14GW3D	1.00	1613																		X						
WFF14GW4	1.00	1615																		X						
MW101S	1.00	1618																		X						
CCV	1.00	1620																		X						
CCB	1.00	1622																		X						
MW111S	1.00	1625																		X						
WFF16GWSF	1.00	1627																		X						
WFF14GWSF	1.00	1629																		X						
WFF14GW3F	1.00	1632																		X						
WFF14GW4F	1.00	1634																		X						
MW101SF	1.00	1636																		X						
MW111SF	1.00	1638																		X						
ICSA	1.00	1641																								
ICSAB	1.00	1643																		X						
CCV	1.00	1645																		X						
CCB	1.00	1648																		X						

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 03/19/03 End Date: 03/19/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
S0	1.00	0956		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
S1	1.00	1001		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
S2	1.00	1004		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
S3	1.00	1008		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
ZZZZZZ	1.00	1012																												
ZZZZZZ	1.00	1015																												
ZZZZZZ	1.00	1016																												
ZZZZZZ	1.00	1020																												
ZZZZZZ	1.00	1024																												
ZZZZZZ	1.00	1030																												
ICV	1.00	1042		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
ICB	1.00	1048		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
ICSA	1.00	1052		X						X				X		X														
ICSAB	1.00	1055		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
ZZZZZZ	1.00	1057																												
ZZZZZZ	1.00	1101																												
ZZZZZZ	1.00	1105																												
ZZZZZZ	1.00	1109																												
ZZZZZZ	1.00	1114																												
ZZZZZZ	1.00	1118																												
CCV	1.00	1122		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
CCB	1.00	1126		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
ZZZZZZ	1.00	1130																												
ZZZZZZ	1.00	1134																												
ZZZZZZ	1.00	1138																												
ZZZZZZ	1.00	1142																												
ZZZZZZ	1.00	1146																												
ZZZZZZ	1.00	1150																												
ZZZZZZ	1.00	1154																												
ZZZZZZ	1.00	1157																												
CCV	1.00	1200		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			
CCB	1.00	1204		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X			

FORM XIV - IN SW846

Pb 220.353	33.8	0.0018 mg/L	0.00103	0.0018 mg/L	0.00103	57.75%
Sb 206.836	13.6	0.0036 mg/L	0.00051	0.0036 mg/L	0.00051	14.02%
Se 196.026	2.0	0.0009 mg/L	0.00224	0.0009 mg/L	0.00224	255.87%
Tl 190.801	4.8	0.0021 mg/L	0.00029	0.0021 mg/L	0.00029	14.20%
V 292.402	527.3	0.0015 mg/L	0.00025	0.0015 mg/L	0.00025	16.48%
Zn 206.200	5462.4	0.0523 mg/L	0.00384	0.0523 mg/L	0.00384	7.35%
Na 330.237	9903.4	4.4448 mg/L	0.07859	4.4448 mg/L	0.07859	1.77%
Cd 226.502	103.4	0.0003 mg/L	0.00005	0.0003 mg/L	0.00005	18.15%
Ti 334.940	7260.6	0.0071 mg/L	0.00007	0.0071 mg/L	0.00007	1.04%
Ca 227.546	2362.5	3.7142 mg/L	0.00075	3.7142 mg/L	0.00075	0.02%

Sequence No.: 53
Sample ID: B0423-06C,6158
Analyst:
Sample Wt: Sample FTA-MW-101S
Dilution:

Autosampler Location: 44
Date Collected: 3/19/2003 1:38:41 PM

Sample Prep Volume:
Data Type: Original

0.1143 mg/L x 1000 = 114 mg/L ✓

Mean Data: B0423-06C,6158

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	106.9	0.0004	mg/L	0.00006	0.0004	mg/L	0.00006	14.97%
Al 308.215	5352.7	0.1091	mg/L	0.00168	0.1091	mg/L	0.00168	1.54%
As 188.979	3.5	0.0023	mg/L	0.00000	0.0023	mg/L	0.00000	0.02%
Ba 233.527	2366.7	0.0327	mg/L	0.00052	0.0327	mg/L	0.00052	1.57%
Be 313.107	1495.9	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	5.44%
Co 228.616	188.2	0.0033	mg/L	0.00012	0.0033	mg/L	0.00012	3.52%
Cr 267.716	288.4	0.0008	mg/L	0.00027	0.0008	mg/L	0.00027	34.27%
Cu 324.752	5148.6	0.0108	mg/L	0.00051	0.0108	mg/L	0.00051	4.73%
Fe 273.955	51816.4	1.0205	mg/L	0.00520	1.0205	mg/L	0.00520	0.51%
Mg 279.077	141764.9	3.0778	mg/L	0.00678	3.0778	mg/L	0.00678	0.22%
Mn 257.610	29047.7	0.1143	mg/L	0.00006	0.1143	mg/L	0.00006	0.05%
Ni 231.604	163.5	0.0031	mg/L	0.00015	0.0031	mg/L	0.00015	4.82%
Pb 220.353	47.3	0.0024	mg/L	0.00004	0.0024	mg/L	0.00004	1.66%
Sb 206.836	10.9	0.0029	mg/L	0.00065	0.0029	mg/L	0.00065	22.33%
Se 196.026	1.2	0.0007	mg/L	0.00062	0.0007	mg/L	0.00062	92.80%
Tl 190.801	0.5	0.0008	mg/L	0.00015	0.0008	mg/L	0.00015	19.47%
V 292.402	306.0	0.0009	mg/L	0.00004	0.0009	mg/L	0.00004	4.47%
Zn 206.200	4704.7	0.0450	mg/L	0.00188	0.0450	mg/L	0.00188	4.19%
Na 330.237	10659.5	4.7845	mg/L	0.06454	4.7845	mg/L	0.06454	1.35%
Cd 226.502	107.5	0.0003	mg/L	0.00001	0.0003	mg/L	0.00001	1.94%
Ti 334.940	1893.0	0.0019	mg/L	0.00004	0.0019	mg/L	0.00004	2.29%
Ca 227.546	1995.5	3.1298	mg/L	0.01559	3.1298	mg/L	0.01559	0.50%

Sequence No.: 54
Sample ID: B0423-07C,6158
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 3/19/2003 1:42:42 PM

Sample Prep Volume:
Data Type: Original

Mean Data: B0423-07C,6158

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	55.0	0.0003	mg/L	0.00009	0.0003	mg/L	0.00009	32.85%
Al 308.215	6741.5	0.1374	mg/L	0.00056	0.1374	mg/L	0.00056	0.41%
As 188.979	1.1	0.0008	mg/L	0.00224	0.0008	mg/L	0.00224	266.58%
Ba 233.527	2321.8	0.0321	mg/L	0.00037	0.0321	mg/L	0.00037	1.14%
Be 313.107	1368.0	0.0002	mg/L	0.00001	0.0002	mg/L	0.00001	4.94%
Co 228.616	180.4	0.0032	mg/L	0.00002	0.0032	mg/L	0.00002	0.49%
Cr 267.716	432.3	0.0012	mg/L	0.00007	0.0012	mg/L	0.00007	5.68%
Cu 324.752	3638.7	0.0076	mg/L	0.00057	0.0076	mg/L	0.00057	7.39%
Fe 273.955	52973.5	1.0433	mg/L	0.00794	1.0433	mg/L	0.00794	0.76%
Mg 279.077	142896.8	3.1024	mg/L	0.04018	3.1024	mg/L	0.04018	1.30%
Mn 257.610	29367.3	0.1155	mg/L	0.00148	0.1155	mg/L	0.00148	1.28%
Ni 231.604	152.7	0.0029	mg/L	0.00009	0.0029	mg/L	0.00009	3.00%
Pb 220.353	57.6	0.0030	mg/L	0.00024	0.0030	mg/L	0.00024	8.17%
Sb 206.836	12.5	0.0033	mg/L	0.00043	0.0033	mg/L	0.00043	12.84%
Se 196.026	1.2	0.0007	mg/L	0.00030	0.0007	mg/L	0.00030	43.75%

IC BATCH # 030315

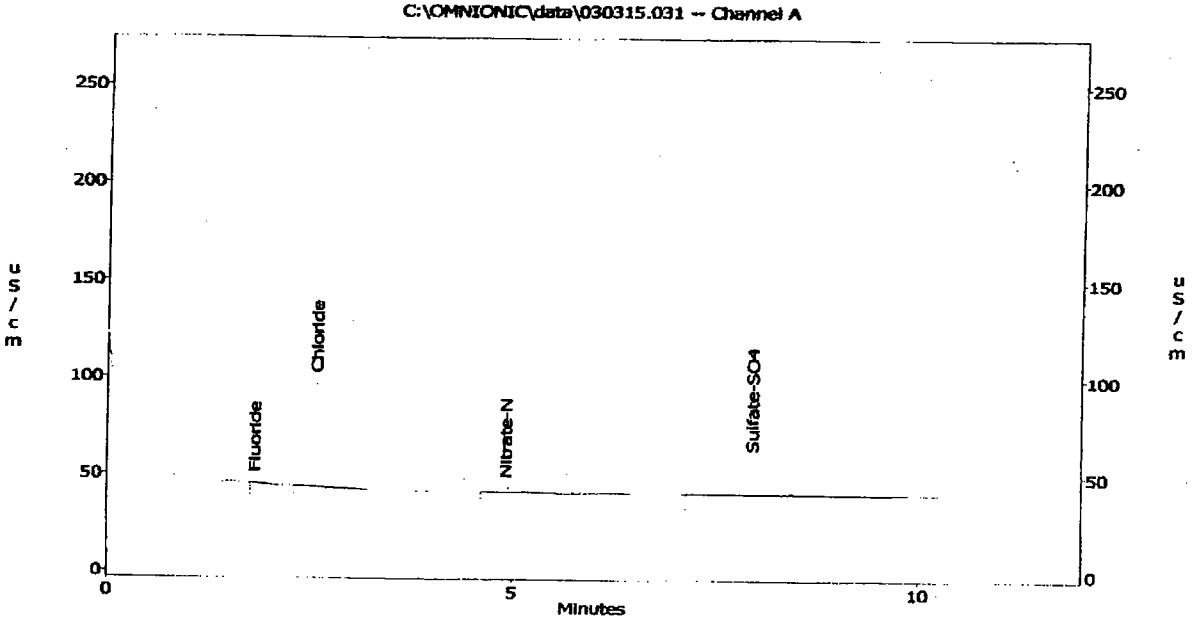
LCSW03ALCS004 (in mg/L): F=8.47 Cl= 11.4 NO3-N = 9.71 Br=16.8 NO2-N =5.00
O-PHOS-P = 13.3 SO4= 9.21

File : C:\OMNIONIC\data\030315.031
Method : c:\omnionic\methods\Epa300a.met
Sample ID : 203237-4

Sample: FIA-WFF14-GW4

	Sample Amount	ISTD Amount	Dilution Factor
Calibration :	1.000	0.000	1.000
Run :	1.000	1.000	1.000

Acquired : Mar 15, 2003 19:59:37
Printed : Mar 15, 2003 20:12:52
User : dave



Channel A Results

Anion	Time	Area	Height	mg/l
Fluoride	1.82	38386	3901	0.048
Chloride	2.58	4809792	538778	7.499 - 7.50
Nitrite-N	3.35	0	0	0.000 <.10
Bromide	4.30	0	0	0.000
Nitrate-N	4.92	520832	27049	0.429 - .43
Phosphate-P	6.40	0	0	0.000
Sulfate-SO4	7.97	3843128	171495	8.836 - 8.84

Chloride - 7.5 mg/L ✓

LCSW03CLCS005 :W03CSTK010 (in mg/L): NO2-N = 5.00
IC ELUENT: W03CRGT024
IC REGENERANT: W03CRGT025

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0423

Instrument ID Number: OPTIMA_2A Method: P

Start Date: 03/19/03 End Date: 03/19/03

EPA Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1208																								
ZZZZZZ	1.00	1212																								
ZZZZZZ	1.00	1216																								
ZZZZZZ	1.00	1220																								
ZZZZZZ	1.00	1224																								
ZZZZZZ	1.00	1228																								
PBW	1.00	1232		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1236																								
CCV	1.00	1240		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1244		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF16GW5	1.00	1249		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW5	1.00	1253		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW3	1.00	1257		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW3D	1.00	1301		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW3S	1.00	1305		X	X	X	X	X	X		X	X	X	X	X		X		X		X		X	X		X	X	X	
WFF14GW3A	1.00	1309			X																							
ZZZZZZ	1.00	1313																									
ZZZZZZ	1.00	1316																									
ZZZZZZ	1.00	1318																									
ZZZZZZ	1.00	1320																									
CCV	1.00	1326		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1331		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW4	1.00	1335		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW101S	1.00	1339		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW111S	1.00	1343		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF16GWSF	1.00	1347		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GWSF	1.00	1351		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW3F	1.00	1355		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1359		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1404		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF14GW4F	1.00	1408		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
MW101SF	1.00	1412		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0423

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 03/19/03___ End Date: 03/19/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN			
MW111SF	1.00	1416		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ZZZZZZ	1.00	1420																												
ZZZZZZ	1.00	1426																												
ZZZZZZ	1.00	1430																												
LCSW	1.00	1435		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
ICSA	1.00	1439		X						X				X		X														
ICSAB	1.00	1442		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCV	1.00	1444		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				
CCB	1.00	1448		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X				

FORM XIV - IN SW846

U.S. EPA - CLP

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0423

Instrument ID Number: COMM_FIMS_____ Method: CV

Start Date: 03/18/03___ End Date: 03/18/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1151																X								
S0.2	1.00	1153																X								
S1	1.00	1154																X								
S2	1.00	1155																X								
S5	1.00	1157																X								
S10	1.00	1158																X								
ZZZZZZ	1.00	1159																								
ZZZZZZ	1.00	1201																								
ZZZZZZ	1.00	1202																								
ZZZZZZ	1.00	1203																								
ICV	1.00	1206																X								
ICB	1.00	1207																X								
ZZZZZZ	1.00	1209																								
ZZZZZZ	1.00	1210																								
ZZZZZZ	1.00	1211																								
ZZZZZZ	1.00	1212																								
ZZZZZZ	1.00	1214																								
ZZZZZZ	1.00	1215																								
ZZZZZZ	1.00	1216																								
ZZZZZZ	1.00	1218																								
CCV	1.00	1219																X								
CCB	1.00	1220																X								
ZZZZZZ	1.00	1222																								
ZZZZZZ	1.00	1223																								
ZZZZZZ	1.00	1224																								
ZZZZZZ	1.00	1226																								
ZZZZZZ	1.00	1227																								
ZZZZZZ	1.00	1228																								
ZZZZZZ	1.00	1230																								
PBW	1.00	1231																X								
CCV	1.00	1232																X								
CCB	1.00	1234																X								

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: ____ SDG No.: B0423

Instrument ID Number: COMM_FIMS_____ Method: CV

Start Date: 03/18/03___ End Date: 03/18/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
LCSW	1.00	1235																X								
WFF16GW5	1.00	1236																X								
WFF14GW5	1.00	1238																X								
WFF14GW3	1.00	1239																X								
WFF14GW3D	1.00	1240																X								
WFF14GW3S	1.00	1242																X								
WFF14GW4	1.00	1243																X								
MW101S	1.00	1244																X								
CCV	1.00	1246																X								
CCB	1.00	1247																X								
MW111S	1.00	1248																X								
WFF16GWSF	1.00	1250																X								
WFF14GWSF	1.00	1251																X								
WFF14GW3F	1.00	1252																X								
WFF14GW4F	1.00	1254																X								
MW101SF	1.00	1255																X								
MW111SF	1.00	1256																X								
ZZZZZZ	1.00	1258																								
CCV	1.00	1259																X								
CCB	1.00	1300																X								

FORM XIV - IN SW846

FIELD DUPLICATE PRECISION

ANALYTE	FTA-MW-111S	FTA-MW-101S	RPD	DIFFERENCE
Aluminum	137	109	22.76	28
Antimony	3.3	3U	#VALUE!	#VALUE!
Arsenic	3U	3U	#VALUE!	#VALUE!
Barium	32.1	32.7	1.85	0.6
Beryllium	0.5U	0.5U	#VALUE!	#VALUE!
Cadmium	0.7U	0.7U	#VALUE!	#VALUE!
Calcium	3080	3130	1.61	50
Chromium	1.2	0.79	41.21 OK	0.41
Cobalt	3.2	3.3	3.08	0.1
Copper	7.6	10.8	34.78 OK	3.2
Iron	1040	1020	1.94	20
Lead	4U	4U	#VALUE!	#VALUE!
Magnesium	3100	3080	0.65	20
Manganese	116	114	1.74	2
Mercury	0.13U	0.13U	#VALUE!	#VALUE!
Nickel	2.9	3.1	6.67	0.2
Potassium	1330	1310	1.52	20
Selenium	9U	9U	#VALUE!	#VALUE!
Silver	2U	2U	#VALUE!	#VALUE!
Sodium	6010	5810	3.38	200
Thallium	3U	3U	#VALUE!	#VALUE!
Vanadium	0.99	0.87	12.90	0.12
Zinc	38.6	45	15.31	6.4
Chloride	3.9	3.9	0.00	0
Nitrate	1.9	1.7	11.11	0.2
Nitrite	0.10U	0.10U	#VALUE!	#VALUE!
Sulfate	11	11	0.00	0
Total Organic Carbon	6U	6U	#VALUE!	#VALUE!

ANALYTE	FTA-MW-111SF	FTA-MW-101SF	RPD	DIFFERENCE
Aluminum	17U	17U	#VALUE!	#VALUE!
Antimony	3U	3U	#VALUE!	#VALUE!
Arsenic	3U	3U	#VALUE!	#VALUE!
Barium	27.1	27.4	1.10	0.3
Beryllium	0.5U	0.5U	#VALUE!	#VALUE!
Cadmium	0.7U	0.7U	#VALUE!	#VALUE!
Calcium	3040	3110	2.28	70
Chromium	0.9	0.83	8.09	0.07
Cobalt	2.7	3	10.53	0.3
Copper	5.4	7.2	28.57	1.8
Iron	989	1060	6.93	71
Lead	4U	4U	#VALUE!	#VALUE!
Magnesium	3040	3050	0.33	10
Manganese	116	119	2.55	3
Mercury	0.14U	0.13U	#VALUE!	#VALUE!
Nickel	2.2	2.5	12.77	0.3
Potassium	1310	1360	3.75	50
Selenium	9U	9U	#VALUE!	#VALUE!
Silver	2U	2U	#VALUE!	#VALUE!
Sodium	6030	6060	0.50	30
Thallium	3U	3U	#VALUE!	#VALUE!
Vanadium	0.7U	0.7U	#VALUE!	#VALUE!
Zinc	41.6	33.9	20.40	7.7

TETRA TECH NUS

PHIL-17186

TO: G. GLENN **DATE:** MAY 28, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0432

SAMPLES: 4/Aqueous/

WOD-WFF15-GW7	RB-031403
WOD-WFF16-GW3	TB-031403

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0432, consists of two aqueous environmental samples (designated WOD-), one rinsate blank (designated RB-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 14, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds, with the exception of acetone, were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MAJOR PROBLEMS

VOLATILE FRACTION

- Initial calibration relative response factors (RRFs) for acetone were less than the QC limit of 0.05. The non-detected result for sample WOD-WFF16-GW3 was qualified as rejected (UR). The positive results for samples WOD-WFF15-GW7, RB-031403, and TB-031403 were considered biased low (L), however, data qualification for sample WOD-WFF15-GW7 was based upon a more significant issue (blank qualification).

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (aqueous)
Acetone*	49 ug/L	490 ug/L
Methylene Chloride*	43 ug/L	430 ug/L

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The action levels apply to the aqueous environmental samples. It should be noted that field QC blanks do not receive qualification based on laboratory blank contamination.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone in the samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualification was required for methylene chloride because there were no positive results in the aqueous environmental samples.

SEMIVOLATILE FRACTION

- The LCS exhibited a recovery less than 10% for 2,4-dimethyphenol. The associated non-detected results were qualified as rejected (UR).
- The LCS exhibited recoveries less than the lower QC limit for hexachlorocyclopentadiene and 3,3'-dichlorobenzidine. The associated non-detected results for these compounds are qualified as biased low (UL).
- Positive results reported at concentrations less than the quantitation limit were qualified estimated, (J).

NOTES

The aqueous LCS for the semivolatile fraction exhibited high recoveries for N-nitrosodiphenylamine and 4-chloroaniline. No action was taken because there were no positive results for these compounds.

No other problems were noted during the review.

EXECUTIVE SUMMARY

Laboratory Performance: Methylene chloride was detected in the method blank. The initial calibration RRF was less than the lower QC limit for one compound in the volatile fraction. Three compound recoveries were less than the lower QC limits for the semivolatile LCS.

Other Factors Affecting Data Quality: Acetone and methylene chloride were detected in the field QC blanks.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Organic Analyses ", as amended for use within EPA Region 3 (9/94), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF16-GW3			RB-031403			TB-031403		
Laboratory ID:	B0432-02A			B0432-03A			B0432-04A			B0432-01A		
Sample Date:	03/14/03			03/14/03			03/14/03			03/14/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	170			1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1			1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	74			1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U		5	U	
Acetone	44	B	B	5	UR	C	15	L	C	49	L	C
Benzene	11			1	U		1	U		1	U	
Bromodichloromethane	1	U		1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U		1	U	
Chloromethane	1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U		1	U	
Ethylbenzene	68			1	U		1	U		1	U	
Isopropylbenzene	6			1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	U		1	U		1	U		1	U	
Methylcyclohexane	18			1	U		1	U		1	U	
Methylene Chloride	2	U		2	U		2			43		
Styrene	5			1	U		1	U		1	U	
Tetrachloroethene	5			1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF16-GW3			RB-031403			TB-031403		
Laboratory ID:	B0432-02A			B0432-03A			B0432-04A			B0432-01A		
Sample Date:	03/14/03			03/14/03			03/14/03			03/14/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L		
Toluene	120			1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U		1	U	
m,p-xylene	370			1	U		1	U		1	U	
o-xylene	170			1	U		1	U		1	U	
Xylene (Total)	540			1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
L -- Positive result is considered biased low due to exceedance of technical quality control criteria.
U -- Value is a non-detected result as reported by the laboratory.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\OV_B0432.DBF data retrieved on: 05/29/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF16-GW3			RB-031403		
Laboratory ID:	B0432-02E			B0432-03E			B0432-04E		
Sample Date:	03/14/03			03/14/03			03/14/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U	
2,4-Dichlorophenol	5	U		5	U		5	U	
2,4-Dimethylphenol	5	UR	E	5	UR	E	5	UR	E
2,4-Dinitrophenol	20	U		20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U	
2-Chloronaphthalene	5	U		5	U		5	U	
2-Chlorophenol	5	U		5	U		5	U	
2-Methylnaphthalene	130			5	U		5	U	
2-Methylphenol	5	U		5	U		5	U	
2-Nitroaniline	20	U		20	U		20	U	
2-Nitrophenol	5	U		5	U		5	U	
3,3-Dichlorobenzidine	5	UL	E	5	UL	E	5	UL	E
3-Nitroaniline	20	U		20	U		20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U	
4-Chloroaniline	5	U		5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U	
4-Methylphenol	5	U		5	U		5	U	
4-Nitroaniline	20	U		20	U		20	U	
4-Nitrophenol	20	U		20	U		20	U	
Acenaphthene	9			5	U		5	U	
Acenaphthylene	5	U		5	U		5	U	
Anthracene	5	U		5	U		5	U	
Benz(a)anthracene	5	U		5	U		5	U	
Benzo(a)pyrene	5	U		5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U	
Bis(2-ethylhexyl)phthalate	4	J	P	5	U		5	U	
Butylbenzylphthalate	5	U		5	U		5	U	
Chrysene	5	U		5	U		5	U	
Di-n-butylphthalate	5	U		5	U		5	U	
Di-n-octylphthalate	5	U		5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U		5	U	
Dibenzofuran	4	J	P	5	U		5	U	
Diethylphthalate	5	U		5	U		5	U	
Dimethylphthalate	5	U		5	U		5	U	
Fluoranthene	5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF16-GW3			RB-031403		
Laboratory ID:	B0432-02E			B0432-03E			B0432-04E		
Sample Date:	03/14/03			03/14/03			03/14/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L		
Fluorene	12			5	U		5	U	
Hexachlorobenzene	5	U		5	U		5	U	
Hexachlorobutadiene	5	U		5	U		5	U	
Hexachlorocyclopentadiene	5	UL	E	5	UL	E	5	UL	E
Hexachloroethane	5	U		5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U		5	U	
Isophorone	5	U		5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U	
Naphthalene	130			5	U		5	U	
Nitrobenzene	5	U		5	U		5	U	
Pentachlorophenol	20	U		20	U		20	U	
Phenanthrene	15			5	U		5	U	
Phenol	5	U		5	U		5	U	
Pyrene	5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\OS_B0432.DBF data retrieved on: 05/28/03

DATA SUMMARY OF PCB RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF16-GW3			RB-031403		
Laboratory ID:	B0432-02E			B0432-03E			B0432-04E		
Sample Date:	03/14/03			03/14/03			03/14/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/L			ug/L			ug/L		
Aroclor-1016	1	U		1	U		1	U	
Aroclor-1221	1	U		1	U		1	U	
Aroclor-1232	1	U		1	U		1	U	
Aroclor-1242	1	U		1	U		1	U	
Aroclor-1248	1	U		1	U		1	U	
Aroclor-1254	1	U		1	U		1	U	
Aroclor-1260	1	U		1	U		1	U	

DATA SUMMARY OF PCB RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\PCB_B0432.DBF data retrieved on: 05/28/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5097

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	44	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	11	
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	120	
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	5	
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	68	

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5097

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	370	
95-47-6	o-Xylene	170	
1330-20-7	Xylene (Total)	540	
100-42-5	Styrene	5	
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	6	
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	74	
95-63-6	1,2,4-Trimethylbenzene	170	
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	18	

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5097

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 30

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	6.08	70	J
2.		BRANCHED ALKANE	7.26	50	J
3.		UNKNOWN	7.40	66	J
4.	620-14-4	BENZENE, 1-ETHYL-3-METHYL-	11.24	110	NJ
5.	611-14-3	BENZENE, 1-ETHYL-2-METHYL-	11.59	70	NJ
6.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	12.12	21	NJ
7.	526-73-8	BENZENE, 1,2,3-TRIMETHYL-	12.31	130	NJ
8.		UNKNOWN	12.55	69	J
9.	535-77-3	BENZENE, 1-METHYL-3-(1-METHY	12.65	57	NJ
10.	1074-17-5	BENZENE, 1-METHYL-2-PROPYL-	12.88	22	NJ
11.		UNKNOWN	12.99	29	J
12.	527-84-4	BENZENE, 1-METHYL-2-(1-METHY	13.03	33	NJ
13.	934-74-7	BENZENE, 1-ETHYL-3,5-DIMETHY	13.11	40	NJ
14.		UNKNOWN	13.26	56	J
15.	934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	13.49	32	NJ
16.	488-23-3	BENZENE, 1,2,3,4-TETRAMETHYL	13.61	42	NJ
17.	95-93-2	BENZENE, 1,2,4,5-TETRAMETHYL	13.67	60	NJ
18.		UNKNOWN	13.79	17	J
19.	27133-93-3	2,3-DIHYDRO-1-METHYLINDENE	14.00	37	NJ
20.	2039-89-6	BENZENE, 2-ETHENYL-1,4-DIMET	14.20	140	NJ
21.	119-64-2	NAPHTHALENE, 1,2,3,4-TETRAHY	14.40	50	NJ
22.	4175-53-5	1H-INDENE, 2,3-DIHYDRO-1,3-D	14.60	21	NJ
23.	17059-48-2	1H-INDENE, 2,3-DIHYDRO-1,6-D	14.79	33	NJ
24.	91-20-3	NAPHTHALENE	14.98	110	NJ
25.	56253-64-6	BENZENE, (2-METHYL-1-BUTENYL	15.22	21	NJ
26.	6682-71-9	1H-INDENE, 2,3-DIHYDRO-4,7-D	15.46	19	NJ
27.	17057-82-8	1H-INDENE, 2,3-DIHYDRO-1,2-D	15.69	40	NJ
28.	2809-64-5	NAPHTHALENE, 1,2,3,4-TETRAHY	16.10	18	NJ
29.	91-57-6	NAPHTHALENE, 2-METHYL-	16.34	80	NJ
30.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	42	NJ

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5098

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5098

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5098

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	7	NJ
2.	90-12-0	NAPHTHALENE, 1-METHYL-	16.54	5	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

000023

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5099

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	15	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5099

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5099

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5096

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	49	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	43	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5096

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5096

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: not dec. _____ Date Analyzed: 03/25/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3123

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted: 03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	130	
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	130	
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	9	
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	4	J
121-14-2	2,4-Dinitrotoluene	5	U

000029

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3123

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	12	
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	15	
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	4	J
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3123

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108-38-3	BENZENE, 1,3-DIMETHYL-	6.35	160	NJ
2.	934-74-7	BENZENE, 1-ETHYL-3,5-DIMETHY	9.21	92	NJ
3.	934-80-5	BENZENE, 4-ETHYL-1,2-DIMETHY	9.49	120	NJ
4.		UNKNOWN	9.53	120	J
5.		UNKNOWN	10.08	140	J
6.	99-87-6	BENZENE, 1-METHYL-4-(1-METHY	10.14	150	NJ
7.		UNKNOWN	10.52	110	J
8.	3333-13-9	BENZENE, 1-METHYL-4-(2-PROPE	10.58	110	NJ
9.		UNKNOWN	11.06	180	J
10.		UNKNOWN	11.95	34	J
11.	90-12-0	NAPHTHALENE, 1-METHYL-	12.73	67	NJ
12.	575-37-1	NAPHTHALENE, 1,7-DIMETHYL-	13.81	55	NJ
13.	573-98-8	NAPHTHALENE, 1,2-DIMETHYL-	13.96	60	NJ
14.	581-42-0	NAPHTHALENE, 2,6-DIMETHYL-	14.01	42	NJ
15.		UNKNOWN	15.29	33	J
16.		UNKNOWN	17.19	50	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3124

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

000032

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3124

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

000033

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3124

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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2.					
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3125

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

000026

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3125

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

000027

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3125

Level: (low/med) LOW Date Received: 03/15/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/19/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/13/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF15GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0117F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/15/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000039

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0118F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/15/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-031403

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix: (soil/water) WATER Lab Sample ID: B0432-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0119F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/15/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

000038

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		LAB PROJECT #:
COMPANY: Tetra Tech NUS	PHONE: 610 4919688	COMPANY: Tetra Tech NUS	PHONE:	B0432
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 845	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	TCL VOC + MTBE 40 ml VOA vial HCl	TCL SVOC 1 liter Amber glass	TCL PCB 1 liter Amber glass	TAL 6010 Metals 500 ml poly HNO3	TAL Metals 500 ml poly HNO3	Dissolved metals 500 ml unpreserved poly chilled to 4°C	Nitrate 125 ml poly H2SO4	Nitrite	COMMENTS
TB-031403	3/14/03 0720		X	X			01	2	2									Trip Blank
WOD-WFF15-MW7 (G cm 3/14/03)	3/14/03 0955		X	X			02		2	2	1	1	1		1			
WOD-WFF16-MW3 (G cm 3/14/03)	3/14/03 1000		X	X			03		2	2	1	1	1		1			
RB-031403	3/14/03 1200		X	X			04		2	1	1	1	1		1			Rinsate Blank
WOD-WFF15-MW7F (G cm 3/14/03)	3/14/03 0955		X	X			05							1				
WOD-WFF16-MW3F (G cm 3/14/03)	3/14/03 1000		X	X			06							1				
RB-031403 F	3/14/03 1200		X	X			07							1				Rinsate Blank
	/																	
	/																	
	/																	
	/																	
	/																	

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Wright	3/14/03 1830	Tim Shuhan	3/15/03 0930
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank provided by Laboratory Rinse Blank seeing Book P 516 for source Shipped Via Federal Express Airbill NO 8286 6464 5109

COOLER TEMP: 4°C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for seven aqueous samples that were collected on March 14, 2003, and received at Mitkem on March 15, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussion with the client. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

000001

Lab control sample: spike recoveries were within the QC limits r.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2,4-dimethylphenol, hexachlorocyclopentadiene and 3,3'-dichlorobenzidine and high recovery of 4-chloroaniline and n-nitrosodiphenylamine, .

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/23/03

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.296	0.242	0.255	0.246	0.256	0.259	8.2
Chloromethane	*	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
Vinyl Chloride		0.449	0.346	0.362	0.357	0.365	0.376	11.1
Bromomethane		0.290	0.233	0.232	0.216	0.188	0.232	16.0
Chloroethane		0.176	0.147	0.209	0.159	0.140	0.166	16.4
Trichlorofluoromethane		0.355	0.309	0.360	0.344	0.341	0.342	5.8
1,1-Dichloroethene		0.278	0.252	0.294	0.278	0.274	0.275	5.5
Acetone		0.073	0.055	0.054	0.049	0.046	0.055	18.6
Carbon Disulfide		1.029	0.531	0.995	0.547	0.784	0.777	30.5
Methylene Chloride		0.326	0.316	0.320	0.329	0.331	0.324	2.0
trans-1,2-Dichloroethene		0.292	0.286	0.306	0.321	0.322	0.305	5.3
Methyl tert-butyl ether		0.759	0.652	0.604	0.645	0.632	0.658	9.0
1,1-Dichloroethane	*	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
2-Butanone		0.140	0.118	0.103	0.113	0.106	0.116	12.5
cis-1,2-Dichloroethene		0.308	0.293	0.312	0.328	0.331	0.314	4.9
Chloroform		0.460	0.434	0.463	0.480	0.474	0.462	3.8
1,1,1-Trichloroethane		0.305	0.298	0.315	0.321	0.318	0.311	3.1
Carbon Tetrachloride		0.243	0.239	0.264	0.280	0.279	0.261	7.4
1,2-Dichloroethane		0.306	0.294	0.295	0.305	0.295	0.299	2.0
Benzene		1.079	1.026	1.063	1.118	1.110	1.079	3.5
Trichloroethene		0.276	0.261	0.278	0.294	0.300	0.282	5.5
1,2-Dichloropropane		0.284	0.276	0.283	0.297	0.289	0.286	2.8
Bromodichloromethane		0.323	0.316	0.335	0.353	0.358	0.337	5.5
cis-1,3-Dichloropropene		0.371	0.382	0.426	0.441	0.453	0.415	8.7
4-Methyl-2-pentanone		0.260	0.230	0.211	0.229	0.236	0.233	7.6
Toluene		1.134	1.074	1.127	1.170	1.168	1.135	3.5
trans-1,3-Dichloropropene		0.288	0.314	0.360	0.367	0.381	0.342	11.5
1,1,2-Trichloroethane		0.228	0.229	0.227	0.244	0.249	0.235	4.5
Tetrachloroethene		0.315	0.302	0.313	0.335	0.338	0.321	4.8
2-Hexanone		0.239	0.235	0.193	0.227	0.218	0.222	8.2
Dibromochloromethane		0.322	0.334	0.360	0.383	0.389	0.358	8.2
1,2-Dibromoethane		0.358	0.360	0.350	0.383	0.381	0.366	4.1
Chlorobenzene	*	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
Ethylbenzene		0.536	0.520	0.523	0.564	0.566	0.542	4.0
m,p-Xylene		0.669	0.643	0.655	0.702	0.677	0.669	3.4
o-Xylene		0.648	0.636	0.646	0.688	0.678	0.659	3.5
Xylene (Total)		0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

000096

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		17	68	0-127
bis(2-Chloroethyl)Ether	25		18	72	46-109
2-Chlorophenol	25		17	68	22-117
2-Methylphenol	25		13	52	40-104
2,2'-oxybis(1-Chloropro	25		17	68	10-134
4-Methylphenol	25		16	64	35-106
N-Nitroso-di-n-prop.(1)	25		17	68	44-122
Hexachloroethane	25		14	56	24-104
Nitrobenzene	25		19	76	47-112
Isophorone	25		27	108	48-118
2-Nitrophenol	25		19	76	29-122
2,4-Dimethylphenol	25		1	4*	14-109
2,4-Dichlorophenol	25		19	76	31-122
Naphthalene	25		18	72	38-117
4-Chloroaniline	25		42	168*	0-152
bis(2-Chloroethoxy)meth	25		21	84	49-112
Hexachlorobutadiene	25		16	64	28-109
4-Chloro-3-Methylphenol	25		19	76	48-117
2-Methylnaphthalene	25		15	60	43-113
Hexachlorocyclopentadie	25		4	16*	34-103
2,4,6-Trichlorophenol	25		21	84	34-127
2,4,5-Trichlorophenol	25		22	88	32-131
2-Chloronaphthalene	25		21	84	47-116
2-Nitroaniline	25		17	68	51-120
Dimethylphthalate	25		23	92	53-124
Acenaphthylene	25		21	84	50-119
2,6-Dinitrotoluene	25		22	88	52-122
3-Nitroaniline	25		12	48	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000054

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix Spike - Sample No.: S2LLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		22	88	50-121
2,4-Dinitrophenol	25		16	64	0-144
4-Nitrophenol	25		21	84	0-160
Dibenzofuran	25		18	72	51-122
2,4-Dinitrotoluene	25		23	92	52-126
Diethylphthalate	25		24	96	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		25	100	52-125
4-Nitroaniline	25		13	52	47-117
4,6-Dinitro-2-methylphe	25		19	76	3-151
N-Nitrosodiphenylamine	25		45	180*	50-150
4-Bromophenyl-phenyleth	25		25	100	51-124
Hexachlorobenzene	25		24	96	52-124
Pentachlorophenol	25		18	72	5-125
Phenanthrene	25		25	100	52-128
Anthracene	25		24	96	52-127
Di-n-butylphthalate	25		26	104	56-132
Fluoranthene	25		23	92	53-130
Pyrene	25		23	92	53-131
Butylbenzylphthalate	25		23	92	54-128
3,3'-Dichlorobenzidine	25		4	16*	41-117
Benzo(a)anthracene	25		23	92	56-124
Chrysene	25		23	92	53-123
bis(2-Ethylhexyl)phthal	25		24	96	56-127
Di-n-octylphthalate	25		23	92	59-138
Benzo(b)fluoranthene	25		24	96	58-126
Benzo(k)fluoranthene	25		26	104	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000055

TETRA TECH NUS

PHIL- 17187

TO: G. GLENN **DATE:** MAY 28, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0432

SAMPLES: 6/Aqueous/

WOD-WFF15-GW7
WOD-WFF15-GW7F
WOD-WFF16-GW3
WOD-WFF16-GW3F
RB-031403
RB-031403F

OVERVIEW

The sample set for the Waste Oil Dump Remedial Investigation – NASA Wallops Island, Virginia, SDG B0432 consists of four aqueous environmental samples (designated WOD-) and two rinsate blanks (designated RB-). All samples were analyzed for TAL metals. No field duplicate pairs was included in this SDG.

The samples were collected by Tetra Tech NUS on March 14, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B and 7470A.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control blank results, field duplicate results, compound identification, compound quantitation, and detection limits.

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level (Aqueous)
Aluminum	43.8	219
Antimony	4.2	21
Arsenic	3.9	19.5
Barium	4.98	24.9

Analyte	Maximum Concentration	Action Level (Aqueous)
Beryllium	1.4	7
Cadmium	1.94	9.7
Chromium	1.1	5.5
Cobalt	2	10
Copper	21	105
Magnesium	158	790
Manganese	2.66	13.3
Nickel	2.82	14.1
Potassium	89.5	448
Vanadium	1.6	8
Zinc	39.3	196

Samples affected: The action levels apply to all aqueous environmental samples. Field QC blanks are not appropriate to qualify from laboratory blanks during data validation.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. Positive results for aluminum, arsenic, barium, beryllium, chromium, cobalt, copper, nickel, vanadium, and zinc in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for antimony, cadmium, magnesium, manganese, and potassium because all concentrations exceeded the associated blank action levels or were non-detected.

- The LCS percent recovery (%R) for mercury was less than the lower QC limit of 80%. The associated non-detected results were qualified as biased low (UL).

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several contaminants were detected in the laboratory blanks. One analyte recovery was less than the lower QC limit in the LCS. ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF15-GW7			WOD-WFF15-GW7F			WOD-WFF16-GW3			WOD-WFF16-GW3F		
Laboratory ID:	B0432-02C			B0432-05A			B0432-03C			B0432-06A		
Sample Date:	03/14/03			03/14/03			03/14/03			03/14/03		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L		
Aluminum	116	B	A	20.8	B	A	1530			40.8	B	A
Antimony	3	U		3	U		3	U		3	U	
Arsenic	15.6	B	A	15.1	B	A	3	U		3	U	
Barium	68.1			70.6			37.1			22	B	A
Beryllium	0.66	B	A	0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U		0.7	U		0.7	U	
Calcium	4130			4880			1230			1140		
Chromium	0.88	B	A	0.63	B	A	2.2	B	A	0.71	B	A
Cobalt	4.1	B	A	5	B	A	2	B	A	1.9	B	A
Copper	15.2	B	A	7.1	B	A	14.4	B	A	6.3	B	A
Iron	16400			17700			1570			26	U	
Lead	68.6			54.7			4	U		4	U	
Magnesium	4350			4760			1520			1390		
Manganese	641			663			15.5			13.6		
Mercury	0.13	UL	E	0.14	UL	E	0.13	UL	E	0.14	UL	E
Nickel	2.8	B	A	3.3	B	A	3.6	B	A	3	B	A
Potassium	1900			1930			1160			1020		
Selenium	9	U		9	U		9	U		9	U	
Silver	2	U		2	U		2	U		2	U	
Sodium	7290			7660			2810			2910		
Thallium	3	U		3	U		3	U		3	U	
Vanadium	2.4	B	A	1.6	B	A	4.3	B	A	0.7	U	
Zinc	37	B	A	26.1	B	A	37.3	B	A	19.7	B	A

DATA SUMMARY OF INORGANIC RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	RB-031403			RB-031403F		
Laboratory ID:	B0432-04C			B0432-07A		
Sample Date:	03/14/03			03/14/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L		
Aluminum	17	U		17	U	
Antimony	3	U		3	U	
Arsenic	3	U		3	U	
Barium	4.5	B	A	4	U	
Beryllium	0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U	
Calcium	240	U		240	U	
Chromium	1	B	A	1.1	B	A
Cobalt	1.8	B	A	1.4	B	A
Copper	9.2	B	A	5.2	B	A
Iron	26	U		26	U	
Lead	4	U		4	U	
Magnesium	59.9	B	A	43	B	A
Manganese	0.8	U		0.8	U	
Mercury	0.14	UL	E	0.14	UL	E
Nickel	3.4	B	A	2.5	B	A
Potassium	78	U		78	U	
Selenium	9	U		9	U	
Silver	2	U		2	U	
Sodium	83	U		83	U	
Thallium	3	U		3	U	
Vanadium	0.7	U		0.7	U	
Zinc	27.3	B	A	15.7	B	A

Remove "B" Qualifiers from field QC Blanks

DATA SUMMARY OF INORGANIC RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:

B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.

U -- Value is a non-detected result as reported by the laboratory.

UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\M_B0432.DBF data retrieved on: 05/28/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix (soil/water): WATER Lab Sample ID: B0432-02C

Level (low/med): MED Date Received: 03/15/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	116	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	15.6	B		P
7440-39-3	Barium	68.1	B		P
7440-41-7	Beryllium	0.66	B		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4130			P
7440-47-3	Chromium	0.88	B	*	P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	15.2	B	*	P
7439-89-6	Iron	16400			P
7439-92-1	Lead	68.6			P
7439-95-4	Magnesium	4350			P
7439-96-5	Manganese	641			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.8	B		P
7440-09-7	Potassium	1900			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	7290			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.4	B		P
7440-66-6	Zinc	37.0	B	*	P
	Cyanide			BK 3/20/03	NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF15GW7F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix (soil/water): WATER Lab Sample ID: B0432-05A

Level (low/med): MED Date Received: 03/15/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.8	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	15.1	B		P
7440-39-3	Barium	70.6	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	4880			P
7440-47-3	Chromium	0.63	B	*	P
7440-48-4	Cobalt	5.0	B		P
7440-50-8	Copper	7.1	B	*	P
7439-89-6	Iron	17700			P
7439-92-1	Lead	54.7			P
7439-95-4	Magnesium	4760			P
7439-96-5	Manganese	663			P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	3.3	B		P
7440-09-7	Potassium	1930			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	7660			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.6	B		P
7440-66-6	Zinc	26.1	B	*	P
	Cyanide			RL 3/24/03	NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0432__

Matrix (soil/water): WATER_ Lab Sample ID: B0432-03C_____

Level (low/med): MED____ Date Received: 03/15/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1530			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	37.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1230			P
7440-47-3	Chromium	2.2	B	*	P
7440-48-4	Cobalt	2.0	B		P
7440-50-8	Copper	14.4	B	*	P
7439-89-6	Iron	1570			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	1520			P
7439-96-5	Manganese	15.5	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	3.6	B		P
7440-09-7	Potassium	1160			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	2810			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	4.3	B		P
7440-66-6	Zinc	37.3	B	*	P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

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Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix (soil/water): WATER Lab Sample ID: B0432-06A

Level (low/med): MED Date Received: 03/15/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.8	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	22.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1140			P
7440-47-3	Chromium	0.71	B	*	P
7440-48-4	Cobalt	1.9	B		P
7440-50-8	Copper	6.3	B	*	P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	1390			P
7439-96-5	Manganese	13.6	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	1020			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	2910			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	19.7	B	*	P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix (soil/water): WATER Lab Sample ID: B0432-04C

Level (low/med): MED Date Received: 03/15/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.0	B	*	P
7440-48-4	Cobalt	1.8	B		P
7440-50-8	Copper	9.2	B	*	P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	59.9	B		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	3.4	B		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	27.3	B	*	P
	Cyanide				NR

pw 3/20/03

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Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031403F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0432

Matrix (soil/water): WATER Lab Sample ID: B0432-07A

Level (low/med): MED Date Received: 03/15/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.1	B	*	P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	5.2	B	*	P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	43.0	B		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	2.5	B		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	15.7	B	*	P
	Cyanide				NR

RM 3/27/03

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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APPENDIX C

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0432
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl	TCL VOC + MTBE 40 ml VOA vial HCl	TOC 1 liter Amber Glass	TCL SVOC 1 liter Amber Glass	500 ml poly HNO3	TAL Metals 500 ml poly HNO3	Dissolved metals 500 ml poly HNO3 Shaded = Filtered	Unfiltered Nitrate							COMMENTS
TB-031403	3/14/03 0720		X	X			01	2	2														Trip Blank
WOD-WFF15-MW7 G cm 3/14/03	3/14/03 0955		X	X			02		2	2	1	1	1		1								
WOD-WFF16-MW3 G cm 3/14/03	3/14/03 1000		X	X			03		2	2	1	1	1		1								
RB-031403	3/14/03 1200		X	X			04		2	1	1	1	1		1								Rinsate Blank
WOD-WFF15-MW7F G cm 3/14/03	3/14/03 0955		X	X			05							1									
WOD-WFF16-MW3F G cm 3/14/03	3/14/03 1000		X	X			06							1									
RB-031403 F	3/14/03 1200		X	X			07							1									Rinsate Blank
	/																						
	/																						
	/																						
	/																						
	/																						

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charlie Mayer	3/14/03 1830	Tim Shulman	3/15/03 0930	Trip Blank provided by Laboratory Rinse Blank seeing Book P516 For source Shipped Via Federal Express Airbill NO 8286 8464 5109	4°C
		/		/		
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for seven aqueous samples that were collected on March 14, 2003, and received at Mitkem on March 15, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussion with the client. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

000001

Lab control sample: spike recoveries were within the QC limits r.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2,4-dimethylphenol, hexachlorocyclopentadiene and 3,3'-dichlorobenzidine and high recovery of 4-chloroaniline and n-nitrosodiphenylamine, .

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/23/03

3
BLANKS

Lab Name: MITKEM_CORPORATION_____ Contract: ____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0432___

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	-17.9	B	17.0	U	17.0	U	43.768 218.8	B	P
Antimony 21	4.2	B	3.0	U	3.0	B	3.1	B	3.000	U	P
Arsenic 19.5	3.9	B	3.5	B	3.0	U	3.4	B	3.000	U	P
Barium	4.0	U	4.0	U	4.0	U	4.0	U	4.984 24.9	B	P
Beryllium 7	1.4	B	0.5	U	0.5	U	0.5	U	0.975	B	P
Cadmium	1.0	B	0.7	U	0.7	U	0.7	U	1.945 9.7	B	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium 5.5	1.1	B	0.6	U	0.6	U	0.6	U	1.048	B	P
Cobalt 10	2.0	B	1.3	B	1.5	B	0.9	B	1.517	B	P
Copper	14.6	B	6.7	B	6.9	B	5.6	B	21.022 105	B	P
Iron	-35.0	B	-75.4	B	-59.7	B	-68.1	B	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	-23.0	B	11.4	B	12.6	B	40.6	B	158.505 792	B	P
Manganese	0.8	U	0.8	U	0.8	U	0.8	U	2.657 13.28	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel	2.2	B	1.5	B	2.1	B	1.6	B	2.824 14.12	B	P
Potassium 447.5	89.5	B	78.0	U	78.0	U			78.000	U	P
Selenium	9.0	U	9.0	U	9.0	U	9.0	U	9.000	U	P
Silver	2.0	U	2.0	U	2.0	U	2.0	U	2.000	U	P
Sodium	83.0	U	83.0	U	83.0	U			83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Vanadium 8	1.6	B	0.8	B	0.8	B	0.7	U	1.114	B	P
Zinc	20.6	B	9.0	B	9.5	B	7.0	U	39.319 196.6	B	P
Cyanide											

000072

7

LABORATORY CONTROL SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0432___

Solid LCS Source: _____

Aqueous LCS Source: HIGH_PURITY__

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Aluminum	9100.0	9124.6	100.3						
Antimony	455.0	433.7	95.3						
Arsenic	455.0	436.0	95.8						
Barium	9100.0	9307.4	102.3						
Beryllium	227.0	232.4	102.4						
Cadmium	227.0	219.8	96.8						
Calcium	22700.0	22653.6	99.8						
Chromium	910.0	924.7	101.6						
Cobalt	2270.0	2367.6	104.3						
Copper	1130.0	1171.7	103.7						
Iron	4550.0	4601.9	101.1						
Lead	455.0	440.7	96.9						
Magnesium	22700.0	23055.5	101.6						
Manganese	2270.0	2291.4	100.9						
Mercury	4.6	3.0	65.2						
Nickel	2270.0	2296.5	101.2						
Potassium	22700.0	22317.8	98.3						
Selenium	455.0	431.7	94.9						
Silver	1130.0	1230.1	108.9						
Sodium	22700.0	22383.7	98.6						
Thallium	455.0	445.2	97.8						
Vanadium	2270.0	2293.3	101.0						
Zinc	2270.0	2379.2	104.8						
Cyanide									

000048

TETRA TECH NUS

PHIL- 17188

TO: G. GLENN **DATE:** MAY 28, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOC, CHLORIDE, NITRATE, NITRITE, AND SULFATE
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0432

SAMPLES: 3/Aqueous/

WOD-WFF15-GW7
WOD-WFF16-GW3
RB-031403

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0432 consists of 2 aqueous environmental samples (designated WOD-) and one rinsate blank (designated RB-). All samples were analyzed for Total Organic Carbon (TOC), chloride, nitrate, nitrite, and sulfate. No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on March 14, 2003. TOC samples were analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island. Chloride, nitrate, nitrite, and sulfate were analyzed by STL Connecticut of Shelton, Connecticut.

TOC analyses were conducted using EPA Method 415.1. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA Method 300.0.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The nitrate and nitrite samples were analyzed two days outside the 48 hour holding time. The results and detection limits for nitrate and nitrite were qualified estimated (J/UJ).

NOTES

The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Sulfate	0.34 mg/L	1.7 mg/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. No qualifications were required for sulfate because all concentrations exceeded the associated blank action levels.

EXECUTIVE SUMMARY

Laboratory Performance: Sulfate was detected in a laboratory blank. Nitrate and nitrite fractions were analyzed outside holding times.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDG B0432 -AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF15-GW7**			**WOD-WFF16-GW3**			**RB-031403**		
Laboratory ID:	**B0432-02B**			**B0432-03B**			**B0432-04B**		
Sample Date:	**03/14/03**			**03/14/03**			**03/14/03**		
Duplicate:									
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/L**			**mg/L**			**mg/L**		
Total Organic Carbon	13			6	U		6	U	
Data Qualifiers:									
U -- Value is a non-detected result as reported by the laboratory.									
Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\TOC_B0432.DBF data retrieved on: 05/28/03									

DATA SUMMARY OF CHLORIDE, NITRATE, NITRITE, AND SULFATE RESULTS
SDG B0432 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**WOD-WFF15-GW7**			**WOD-WFF16-GW3**			**RB-031403**		
Laboratory ID:	**203244-001**			**203244-002**			**203244-003**		
Sample Date:	**03/14/03**			**03/14/03**			**03/14/03**		
Duplicate:									
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/L**			**mg/L**			**mg/L**		
Chloride	8.1			4.2			0.15	U	
Nitrate	0.033	J	H	0.23	J	H	0.084	J	H
Nitrite	0.003	UJ	H	0.003	UJ	H	0.003	UJ	H
Sulfate	6.4			4.7			0.34		

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

U -- Value is a non-detected result as reported by the laboratory.

UJ -- Non-detected result is considered estimated due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0432\SUB_B0432.DBF data retrieved on: 05/28/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF15GW7
Lab ID: B0432-02

Project: Wallops Island
Collection Date: 03/14/03 9:55

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	13		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW3
Lab ID: B0432-03

Project: Wallops Island
Collection Date: 03/14/03 10:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *10-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: RB-031403
Lab ID: B0432-04

Project: Wallops Island
Collection Date: 03/14/03 12:00

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/18/2003 14:03	6204

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

000010

LABORATORY TEST RESULTS

Job Number: 203244

Date:03/26/2003

CUSTOMER: MITKEM | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Customer Sample ID: B0432-02D
Date Sampled.....: 03/14/2003
Time Sampled.....: 09:55
Sample Matrix.....: Water

Laboratory Sample ID: 203244-1
Date Received.....: 03/18/2003
Time Received.....: 09:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	8.1			0.15	1.0	1	mg/L	15385		03/18/03 1539	ddm
	Nitrate as N (NO3-N)	0.033	B		0.002	0.10	1	mg/L	15385		03/18/03 1539	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15385		03/18/03 1539	ddm
	Sulfate	6.4			0.012	1.0	1	mg/L	15385		03/18/03 1539	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203244

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0432-03D
Date Sampled.....: 03/14/2003
Time Sampled.....: 10:00
Sample Matrix.....: Water

Laboratory Sample ID: 203244-2
Date Received.....: 03/18/2003
Time Received.....: 09:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	4.2			0.15	1.0	1	mg/L	15385		03/18/03 1621	ddm
	Nitrate as N (NO3-N)	0.23			0.002	0.10	1	mg/L	15385		03/18/03 1621	ddm
	Nitrite as N (NO2-N)	ND		U	0.003	0.10	1	mg/L	15385		03/18/03 1621	ddm
	Sulfate	4.7			0.012	1.0	1	mg/L	15385		03/18/03 1621	ddm

00000004

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203244

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0432-04D
Date Sampled.....: 03/14/2003
Time Sampled.....: 12:00
Sample Matrix.....: Water

Laboratory Sample ID: 203244-3
Date Received.....: 03/18/2003
Time Received.....: 09:20

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	ND	U		0.15	1.0	1	mg/L	15385		03/18/03 1702	ddm
	Nitrate as N (NO3-N)	0.084	B		0.002	0.10	1	mg/L	15385		03/18/03 1702	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15385		03/18/03 1702	ddm
	Sulfate	0.34	B		0.012	1.0	1	mg/L	15385		03/18/03 1702	ddm

* In Description = Dry Wgt.

APPENDIX C

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 4919685	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0432
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza III 661 Anderson Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 845

CLIENT P.O.#:

REQUESTED ANALYSES: 40ml VOA vial HCl; TCL VOC, MTBE; 40ml VOA vial HCl; TOC; 1 liter Amber Glass; TCL SVOC; 1 liter Amber Glass; 500 ml 1:1 HNO3; TAL Metals; 500 ml 1:1 HNO3; Dissolved metals; 500 ml 1:1 HNO3 Filtered per Client; Sulfide; Nitrate

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40ml VOA vial HCl	TCL VOC, MTBE	40ml VOA vial HCl	TOC	1 liter Amber Glass	TCL SVOC	1 liter Amber Glass	500 ml 1:1 HNO3	TAL Metals	500 ml 1:1 HNO3	Dissolved metals	500 ml 1:1 HNO3 Filtered per Client	Sulfide	Nitrate	COMMENTS
TB-031403	3/14/03 0720		X	X			01	2	2														Trip Blank
WOD-WFF15-MW7 G cm 3/14/03	3/14/03 0955		X	X			02		2	2	1	1	1		1								
WOD-WFF16-MW3 G cm 3/14/03	3/14/03 1000		X	X			03		2	2	1	1	1		1								
RB-031403	3/14/03 1200		X	X			04		2	1	1	1	1		1								Rinsate Blank
WOD-WFF15-MW7F G cm 3/14/03	3/14/03 0955		X	X			05									1							
WOD-WFF16-MW3F G cm 3/14/03	3/14/03 1000		X	X			06									1							
RB-031403 F	3/14/03 1200		X	X			07									1							Rinsate Blank
	/																						
	/																						
	/																						
	/																						
	/																						

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	Charles Wright	3/14/03 1830	Tim Shulman	3/15/03 0930
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank provided by Laboratory Rinse Blank seeing Book P 516 for source Shipped Via Federal Express Airbill NO 8286 8464 5109

COOLER TEMP: 4°C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for seven aqueous samples that were collected on March 14, 2003, and received at Mitkem on March 15, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms, following discussion with the client. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits r.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Alkanes were determined as part of TICs. Alkanes are reported in the Alkane Narrative Report following the SDG narrative.

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 2,4-dimethylphenol, hexachlorocyclopentadiene and 3,3'-dichlorobenzidine and high recovery of 4-chloroaniline and n-nitrosodiphenylamine, .

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Spike recoveries were within the QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF15GW7 for metals except mercury and on sample WFF15GW3 for mercury. Replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/23/03

SEVERN TRENT STL

STL Report : 203244
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Samples were received out of hold for nitrate and nitrite analyses. STL authorized to continues analyses.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl Lu Casciola for
Jeffrey C. Curran
Laboratory Manager

March 26, 2003
Date

QUALITY CONTROL RESULTS

Job Number.: 203244

Report Date.: 03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Test Method.....: 300.0
Method Description.: Ion Chromatography Analysis
Parameter.....: Sulfate

Batch.....: 15385
Equipment Code....: LACHET 3

Analyst...: ddm
Test Code.: SO4

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
												03/18/2003	1257
STD	15385-007	W03CWRK025	mg/L	1.00000		1.00000							
ICV	15385-009	W03CWRK018	mg/L	50.80800		50.00000		102			90-110	03/18/2003	1324
ICB	15385-010		mg/L	0.32700	B							03/18/2003	1338
CCV	15385-011	W03CWRK018	mg/L	50.91600		50.00000		102		%	90-110	03/18/2003	1351
CCB	15385-012		mg/L	0.01200	U							03/18/2003	1404
MS	15385-013	W03CSPK001	mg/L	19.40500		20.00000	0.31100	95	B		75-125	03/18/2003	1418
LCS	15385-014	W03CLCS005	mg/L	8.40800		9.21000		91		%	85-115	03/18/2003	1431
LCS	15385-015	W03CLCS005	mg/L	8.95900		9.21000		97		%	85-115	03/18/2003	1445
MB	15385-016		mg/L	0.31100	B							03/18/2003	1458
MD	203244-1		mg/L	6.42400			6.41500	0.1			20.0	03/18/2003	1554
MS	203244-1	W03CSPK001	mg/L	26.20900		20.00000	6.41500	99			75-125	03/18/2003	1608
CCV	15385-023	W03CWRK018	mg/L	51.49300		50.00000		103		%	90-110	03/18/2003	1635
CCB	15385-024		mg/L	0.01200	U							03/18/2003	1648
MD	203253-2		mg/L	41.15900			40.58100	1.4			20.0	03/18/2003	1755
MS	203253-2	W03CSPK001	mg/L	60.11500		20.00000	40.58100	98			75-125	03/18/2003	1809
CCV	15385-034	W03CWRK018	mg/L	52.66800		50.00000		105		%	90-110	03/18/2003	1903
CCB	15385-035		mg/L	0.01200	U							03/18/2003	1916
CCV	15385-036	W03CWRK018	mg/L	51.17100		50.00000		102		%	90-110	03/19/2003	0950
CCB	15385-037		mg/L	0.31500	B							03/19/2003	1004
CCV	15385-047	W03CWRK018	mg/L	53.27700		50.00000		107		%	90-110	03/19/2003	1218
CCB	15385-048		mg/L	0.32000	B							03/19/2003	1232

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **G. GLENN** **DATE:** **MAY 20, 2003**

FROM: **BERNARD F SPADA III** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- VOC/SVOC/PCB**
CTO 848, NASA WALLOPS ISLAND
SDG B0439

SAMPLES: 3/Aqueous

TB-031703* WOD-MW4 WOD-WFF16-GW6

Overview

The sample set for CTO 848 NASA Wallops Island, SDG B0439 consists of one (1) trip blank, and two (2) environmental aqueous samples. The environmental samples were all analyzed for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), and polychlorinated biphenyls (PCB). The trip blank denoted with an asterisk (*) was analyzed for VOC only.

The samples were collected by Tetra Tech NUS on March 17, 2003 and analyzed by Mitkem Corporation. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Methods 8260B, 8270C, and 8082 analytical and reporting protocols.

All samples were successfully analyzed. The findings offered in this report are based upon a general review of all available data including: data completeness, holding times, initial/continuing calibrations, laboratory method blank results, surrogate spike recoveries, blank spike/blank spike duplicate results, internal standard recoveries, chromatographic resolution, compound identification, compound quantitation and detection limits. Areas of concern are listed below.

Major

- None.

Minor

- The following compound was detected in the method blank:

Compound	Maximum Concentration	Blank Action Level
Methylene chloride	1.0 ug/L	10 ug/L

Sample aliquot and dilution factors were taken into consideration when applying the blank action levels. No qualifications were made on this basis.

- The semivolatile continuing calibration performed on April 3 at 12:40 exceeded the 25% (and

was >50%) percent difference quality control criteria for 4-nitroaniline and 3,3'-dichlorobenzidine. All results for the aforementioned compounds were qualified as estimated (UJ).

Notes

There were several inconsistencies between the compound lists in the statement of work (SOW) and the results submitted by the laboratory. No action was taken on this basis because the project office approved the variance from the SOW.

The volatile initial calibration performed on March 23 exceeded the 30% (but was <50%) relative percent difference (RPD) quality control criteria for carbon disulfide. No qualifications were made on this basis because the results for carbon disulfide were non-detected.

The volatile continuing calibration performed on March 26 at 08:00 exceeded the 25% (but was <50%) difference quality control criteria for dichlorodifluoromethane. No qualifications were made on this basis because the results for dichlorodifluoromethane were non-detected.

The volatile blank spike was below the laboratory's percent recovery quality control criteria for MTBE. No qualifications were made on this basis.

The semivolatile continuing calibration performed on April 3 at 12:40 exceeded the 25% (but was <50%) percent difference quality control criteria for 2,4-dinitrophenol. No qualifications were made on this basis because the results for 2,4-dinitrophenol were non-detected.

The semivolatile blank spike was below the percent recovery quality control criteria for 4-methylphenol, 4-chloro-3-methylphenol, 2-nitroaniline, and 3-nitroaniline. No action was taken on this basis.

The semivolatile blank spike exceeded the laboratory's percent recovery quality control criteria for N-nitrosodiphenylamine. No qualifications were made on this basis because the results for N-nitrosodiphenylamine were non-detected.

All of the PCB continuing calibrations exceeded the 15% difference quality control criteria for Aroclor 1016, Aroclor 1260, and the surrogate decachlorobiphenyl on the RTXCLPPEST 2 column. No qualifications were made on this basis because the RTXCLPPEST column was compliant.

Executive Summary

Laboratory Performance: Qualifications were made based on calibration non-compliances, method blank contamination, and blank spike recovery non-compliances.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to U.S. EPA National Functional Guidelines for Data Validation as modified by EPA Region III (9/94) and the NFESC guidelines entitled Navy IRCDQM (Sept. 1999). The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

Appendix A – Qualified Analytical Results
Appendix B – Results as Reported by the Laboratory
Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	TB-031703
samp_date	3/17/2003
lab_id	B0439-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	46		
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	TB-031703
samp_date	3/17/2003
lab_id	B0439-01A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	48		
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	WOD-MW4
samp_date	3/17/2003
lab_id	B0439-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-MW4
samp_date	3/17/2003
lab_id	B0439-02A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

nsample	WOD-WFF16-GW6
samp_date	3/17/2003
lab_id	B0439-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
1,1,1-TRICHLOROETHANE	1	U	
1,1,2,2-TETRACHLOROETHANE	1	U	
1,1,2-TRICHLOROETHANE	1	U	
1,1,2-TRICHLOROTRIFLUOROETHANE	1	U	
1,1-DICHLOROETHANE	1	U	
1,1-DICHLOROETHENE	1	U	
1,2,4-TRICHLOROBENZENE	1	U	
1,2,4-TRIMETHYLBENZENE	1	U	
1,2-DIBROMO-3-CHLOROPROPANE	1	U	
1,2-DIBROMOETHANE	1	U	
1,2-DICHLOROBENZENE	1	U	
1,2-DICHLOROETHANE	1	U	
1,2-DICHLOROPROPANE	1	U	
1,3,5-TRIMETHYLBENZENE	1	U	
1,3-DICHLOROBENZENE	1	U	
1,4-DICHLOROBENZENE	1	U	
2-BUTANONE	5	U	
2-HEXANONE	5	U	
4-METHYL-2-PENTANONE	5	U	
ACETONE	5	U	
BENZENE	1	U	
BROMODICHLOROMETHANE	1	U	
BROMOFORM	1	U	
BROMOMETHANE	1	U	
CARBON DISULFIDE	1	U	
CARBON TETRACHLORIDE	1	U	
CHLOROBENZENE	1	U	
CHLORODIBROMOMETHANE	1	U	
CHLOROETHANE	1	U	
CHLOROFORM	1	U	

nsample	WOD-WFF16-GW6
samp_date	3/17/2003
lab_id	B0439-03A
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
CHLOROMETHANE	1	U	
CIS-1,2-DICHLOROETHENE	1	U	
CIS-1,3-DICHLOROPROPENE	1	U	
CYCLOHEXANE	1	U	
DICHLORODIFLUOROMETHANE	1	U	
ETHYLBENZENE	1	U	
ISOPROPYLBENZENE	1	U	
M+P-XYLENES	1	U	
METHYL ACETATE	1	U	
METHYL CYCLOHEXANE	1	U	
METHYL TERT-BUTYL ETHER	1	U	
METHYLENE CHLORIDE	2	U	
O-XYLENE	1	U	
STYRENE	1	U	
TETRACHLOROETHENE	1	U	
TOLUENE	1	U	
TOTAL XYLENES	1	U	
TRANS-1,2-DICHLOROETHENE	1	U	
TRANS-1,3-DICHLOROPROPENE	1	U	
TRICHLOROETHENE	1	U	
TRICHLOROFLUOROMETHANE	1	U	
VINYL CHLORIDE	1	U	

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-MW4		nsample	WOD-MW4		nsample	WOD-WFF16-GW6	
samp_date	3/17/2003		samp_date	3/17/2003		samp_date	3/17/2003	
lab_id	B0439-02E		lab_id	B0439-02E		lab_id	B0439-03E	
qc_type	NM		qc_type	NM		qc_type	NM	
units	UG/L		units	UG/L		units	UG/L	
Pct_Solids	0		Pct_Solids	0		Pct_Solids	0	
DUP_OF:			DUP_OF:			DUP_OF:		

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	U	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	C
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	UJ	C
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

Parameter	Result	Val Qual	Qual Code
2,2'-OXYBIS(1-CHLOROPROPANE)	5	U	
2,4,5-TRICHLOROPHENOL	20	U	
2,4,6-TRICHLOROPHENOL	5	U	
2,4-DICHLOROPHENOL	5	U	
2,4-DIMETHYLPHENOL	5	U	
2,4-DINITROPHENOL	20	U	
2,4-DINITROTOLUENE	5	U	
2,6-DINITROTOLUENE	5	U	
2-CHLORONAPHTHALENE	5	U	
2-CHLOROPHENOL	5	U	
2-METHYLNAPHTHALENE	5	U	
2-METHYLPHENOL	5	U	
2-NITROANILINE	20	UJ	
2-NITROPHENOL	5	U	
3,3'-DICHLOROBENZIDINE	5	UJ	C
3-NITROANILINE	20	U	
4,6-DINITRO-2-METHYLPHENOL	20	U	
4-BROMOPHENYL PHENYL ETHER	5	U	
4-CHLORO-3-METHYLPHENOL	5	U	
4-CHLOROANILINE	5	U	
4-CHLOROPHENYL PHENYL ETHER	5	U	
4-METHYLPHENOL	5	U	
4-NITROANILINE	20	UJ	C
4-NITROPHENOL	20	U	
ACENAPHTHENE	5	U	
ACENAPHTHYLENE	5	U	
ANTHRACENE	5	U	
BENZO(A)ANTHRACENE	5	U	
BENZO(A)PYRENE	5	U	
BENZO(B)FLUORANTHENE	5	U	

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-WFF16-GW6
samp_date	3/17/2003
lab_id	B0439-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
BENZO(G,H,I)PERYLENE	5	U	
BENZO(K)FLUORANTHENE	5	U	
BIS(2-CHLOROETHOXY)METHANE	5	U	
BIS(2-CHLOROETHYL)ETHER	5	U	
BIS(2-ETHYLHEXYL)PHTHALATE	5	U	
BUTYL BENZYL PHTHALATE	5	U	
CHRYSENE	5	U	
DIBENZO(A,H)ANTHRACENE	5	U	
DIBENZOFURAN	5	U	
DIETHYL PHTHALATE	5	U	
DIMETHYL PHTHALATE	5	U	
DI-N-BUTYL PHTHALATE	5	U	
DI-N-OCTYL PHTHALATE	5	U	
FLUORANTHENE	5	U	
FLUORENE	5	U	
HEXACHLOROBENZENE	5	U	
HEXACHLOROBUTADIENE	5	U	
HEXACHLOROCYCLOPENTADIENE	5	U	
HEXACHLOROETHANE	5	U	
INDENO(1,2,3-CD)PYRENE	5	U	
ISOPHORONE	5	U	
NAPHTHALENE	5	U	
NITROBENZENE	5	U	
N-NITROSO-DI-N-PROPYLAMINE	5	U	
N-NITROSODIPHENYLAMINE	5	U	
PENTACHLOROPHENOL	20	U	
PHENANTHRENE	5	U	
PHENOL	5	U	
PYRENE	5	U	

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION: P

nsample	WOD-MW4
samp_date	3/17/2003
lab_id	B0439-02E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

nsample	WOD-WFF16-GW6
samp_date	3/17/2003
lab_id	B0439-03E
qc_type	NM
units	UG/L
Pct_Solids	0
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	1.0	U	
AROCLOR-1221	1.0	U	
AROCLOR-1232	1.0	U	
AROCLOR-1242	1.0	U	
AROCLOR-1248	1.0	U	
AROCLOR-1254	1.0	U	
AROCLOR-1260	1.0	U	

Appendix B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5147

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	46	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	48	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5147

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5147

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5146

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5146

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5146

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5148

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5148

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5148

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2710

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2710

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2710

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2711

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2711

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2711

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WOD-MW4

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0120F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/18/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW6

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-03E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0121F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/18/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/26/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

Appendix C

Support Documentation

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 1:19 PM
To: Sedlmyer, Ed; Schloer, Doug; Spada, Bernie; Staffen, Seth
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Note from Russ.

In his final paragraph, he stated that they are not concerned over "missing SVOCs". It seems as though a mistake was made when translating the project requirements.

In the second to the last paragraph, he means bromochloromethane.

Bottom line: Review data as received from the laboratory and in a general manner, note the difference between what was reported by the lab and what was requested in the SOW. No need to specifically list compounds. State that the project office was contacted and that they approved the variance from the SOW.

Thanks.

-----Original Message-----
From: Sloboda, Russell
Sent: Thursday, May 08, 2003 1:01 PM
To: Samchuck, Joseph
Cc: Ritchie, Megan; Glenn, Garth
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

As we discussed on the phone, I looked up the issues regarding TCL analytes in the work plan and QAP. I did not find any phone notes from 2 months ago when Garth and I had a conference call with MITKEM regarding SVOC TCL analyte lists.

Regarding the overlap between VOCs and SVOCs, proceed as we discussed over the phone and retain all reported Form I analytes in each respective validation report. The dichlorobenzenes and trichlorbenzene will be sorted out for risk assessment here in King of Prussia after we have assimilated the entire database. There are different fraction fields in the database so the results won't be confused. We will evaluate the best data to retain for risk assessment here at that time. While the lower detection limit data in theory should be better, I have seen exceptions in the past where there were detections in the SVOC fraction but not VOC fraction and in such cases it would be presumed that the matrix of the sample affected purge efficiency for the heaviest VOCs.

Regarding bromochlorobenzene, I verified there is no mention of this compound as a historically detected contaminant at Wallops Island sites of interest. Do not ask the lab to provide additional data or make analysis and reporting changes for this compound.

Regarding 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum being requested for soil analysis but instead reported based on a TIC search, it is not necessary to have the laboratory add these compounds to the TCL list at this late date in the project because there are no historical detections of these compounds identified in the work plan or QAPP. The reason that the SVOC TCL list was different for soil and water is a consequence of the template used for this table from another project. Garth indicated that he wants the data to be validated as received and reported by the laboratory because this is not a major issue. However, the laboratory should not be listing any compound on the TCL Form I target compound section if it is not in any standards run so if uncalibrated compounds were reported on Form Is then these compounds should be deleted or rejected.

-----Original Message-----
From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:00 AM

To: Sloboda, Russell
Subject: FW: NASA, Wallops Is. organic data validation for CTO 848.

Russ,

fyi.
-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

Joe,

Regarding the subject data validation assignment, I've encountered some disparity between what is being reported by Mitkem and what was actually requested in the statement of work. This may be useful information for making some sort of global request to the lab.

For the aqueous samples:

The lab failed to report the VOC: bromochloromethane (Seth had already alerted me to this).
The lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.
The lab reported a total of 9 compounds (VOC and SVOC) in addition to the requested analytes.

For the soil samples:

The lab failed to report the SVOCs: 1,1-biphenyl, acetophenone, atrazine, benzaldehyde, and caprolactum. Interestingly, the case narrative acknowledges this oversight and explains that the presence of these particular compounds will be determined via TIC library search. Do you know if this approach ok with the PM? BTW- I didn't find these compounds in the SVOC calibration summaries or quan reports.

Again, the lab reported 1,2,4-trichlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene and 1,4-dichlorobenzene in both the VOC and SVOC analytical fractions. These compounds were not requested SVOCs in soils and the DL is much lower via 8260; therefore, they will be deleted from the SVOC database.

Only xylene isomers were reported but not requested for the soil samples in my SDG.

Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

Doug Schloer
Environmental Scientist
TETRA TECH NUS, Inc.
661 Andersen Drive
Foster Plaza 7
Pittsburgh, PA 15220-2745
Telephone: (412) 921-8961
FAX: (412) 921-4040
schloerd@ttnus.com
http://www.ttnus.com
http://www.tetratech.com

Spada, Bernie

From: Samchuck, Joseph
Sent: Thursday, May 08, 2003 10:09 AM
To: Schloer, Doug
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: RE: NASA, Wallops Is. organic data validation for CTO 848.

Russ Sloboda is checking the compound lists for us. As for the Chlorobromomethane, it is not needed.

Also, Russ asked that we not remove any compounds that are in both fractions such as the dichlorobenzenes. He can sort out the compounds using the fraction. So don't delete any compounds. If you have already do this, let me know the SDG and fraction so that I can unsubmit the data and you can make the changes and reprint forms.

-----Original Message-----
From: Schloer, Doug
Sent: Wednesday, May 07, 2003 12:20 PM
To: Samchuck, Joseph
Cc: Staffen, Seth; Sedlmyer, Ed; Spada, Bernie
Subject: NASA, Wallops Is. organic data validation for CTO 848.

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Seth, Bernie and Ed; I imagine you guys are making the bulk of the requests from the lab, so if there is something else that I have missed that I should be looking out for please let me know.

Doug

B0439

HOLDING TIME

05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	WOD-MW4	203259-001	NORMAL	B0439	CL	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	CL	03/17/03	/ /	03/19/03	0	0	2
%	LCSW1	LCS-6177	LCS	B0439	HG	/ /	03/18/03	03/19/03	0	1	0
UG/L	PBW1	MB-6177	M_BLANK	B0439	HG	/ /	03/18/03	03/19/03	0	1	0
UG/L	WOD-MW4	B0439-02D	NORMAL	B0439	HG	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-WFF16-GW6	B0439-03D	NORMAL	B0439	HG	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-MW4F	B0439-04A	NORMAL	B0439	HGF	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-WFF16-GW6F	B0439-05A	NORMAL	B0439	HGF	03/17/03	03/18/03	03/19/03	1	1	2
%	LCSW	LCS-6171	LCS	B0439	M	/ /	03/18/03	03/18/03	0	0	0
UG/L	PBW	MB-6171	M_BLANK	B0439	M	/ /	03/18/03	03/18/03	0	0	0
UG/L	WOD-MW4	B0439-02D	NORMAL	B0439	M	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-WFF16-GW6	B0439-03D	NORMAL	B0439	M	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-MW4F	B0439-04A	NORMAL	B0439	MF	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-WFF16-GW6F	B0439-05A	NORMAL	B0439	MF	03/17/03	03/18/03	03/18/03	1	0	1
MG/L	WOD-MW4	203259-001	NORMAL	B0439	NTA	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	NTA	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-MW4	203259-001	NORMAL	B0439	NTI	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	NTI	03/17/03	/ /	03/19/03	0	0	2
%	SBLK3G	MB-6282	M_BLANK	B0439	OS	/ /	03/24/03	04/03/03	0	10	0
%	SBLK3GLCS	LCS-6282	LCS	B0439	OS	/ /	03/24/03	04/03/03	0	10	0
%	WOD-MW4	B0439-02E	NORMAL	B0439	OS	03/17/03	03/24/03	04/03/03	7	10	17
UG/L	WOD-WFF16-GW6	B0439-03E	NORMAL	B0439	OS	03/17/03	03/24/03	04/03/03	7	10	17
%	TB-031703	B0439-01A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	VBLK5X	V5B0326A	M_BLANK	B0439	OV	/ /	03/26/03	03/26/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5XLCS	V5L0326A	LCS	B0439	OV	/ /	03/26/03	03/26/03	0	0	0
%	WOD-MW4	B0439-02A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	WOD-WFF16-GW6	B0439-03A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	BBLK1A	MB-6197	M_BLANK	B0439	PCB	/ /	03/19/03	03/25/03	0	6	0
%	BBLK1ALCS	LCS-6197	LCS	B0439	PCB	/ /	03/19/03	03/25/03	0	6	0
%	WOD-MW4	B0439-02E	NORMAL	B0439	PCB	03/17/03	03/19/03	03/26/03	2	7	9
%	WOD-WFF16-GW6	B0439-03E	NORMAL	B0439	PCB	03/17/03	03/19/03	03/26/03	2	7	9
MG/L	WOD-MW4	203259-001	NORMAL	B0439	SO4	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	SO4	03/17/03	/ /	03/19/03	0	0	2
%	LCS-6217	LCS-6217	LCS	B0439	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	MB-6217	MB-6217	M_BLANK	B0439	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	WOD-MW4	B0439-02B	NORMAL	B0439	TOC	03/17/03	03/19/03	03/19/03	2	0	2
MG/L	WOD-WFF16-GW6	B0439-03B	NORMAL	B0439	TOC	03/17/03	03/19/03	03/19/03	2	0	2

MITKEM CORPORATION

"Environmental Testing For The New Millennium"

April 22, 2003

Tetra Tech NUS, Inc.
600 Clark Avenue
King of Prussia, PA 19406
Attn: Mr. Garth Glenn

RE: Client Project: CTO – 848, NASA Wallops Flight Facility
Mitkem Lab Project # B0439

Dear Mr. Glenn:

Enclosed please find the data report of the required analyses for the samples associated with the above referenced project.

If you have any questions regarding this report, please call me.

We appreciate your business.

Sincerely,

Agnes R. Ng
CLP Project Manager

175 Metro Center Boulevard • Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499 • www.mitkem.com

MITKEM CORPORATION

* Data Summary Pack *

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0439

Mitkem Project ID: B0439

April 22, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 17, 2003, and received at Mitkem on March 18, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of methyl tert-butyl ether.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 4-methylphenol, 4-chloro-3-methylphenol, 2-nitroaniline and 3-nitroaniline and high recovery of n-nitrosodiphenylamine.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/22/03

MITKEM CORPORATION

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CHAIN-OF-CUSTODY RECORD

REPORT TO

COMPANY: Tetra Tech NUS
PHONE: 610 491 9688
NAME: Garth Glenn
FAX: 610 491 9645
ADDRESS: 600 Clark Avenue Suite 3
CITY/ST/ZIP: King of Prussia PA 19406

INVOICE TO

COMPANY: Tetra Tech NUS
PHONE:
NAME:
FAX:
ADDRESS: Foster Plaza VII 661 Andersen Drive
CITY/ST/ZIP: Pittsburgh PA

LAB PROJECT #: B0439
TURNAROUND TIME:

CLIENT PROJECT NAME: NASA WFF
CLIENT PROJECT #: CTO 848
CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA Vials HCl Low Conc TCL VOC WATER; 40 ml VOA Vials HCl TCL VOC; 1 Liter Amber Glass TCL SVOC; 1 Liter Amber Glass TCL PCB; 500 ml Poly HNO3 TAL Metals; Composite Sample Chloride Sulfate Nitrate; 500 ml Poly HNO3 Dissolved Metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vials HCl Low Conc TCL VOC WATER	40 ml VOA Vials HCl TCL VOC	1 Liter Amber Glass TCL SVOC	1 Liter Amber Glass TCL PCB	500 ml Poly HNO3 TAL Metals	Composite Sample Chloride Sulfate Nitrate	500 ml Poly HNO3 Dissolved Metals	COMMENTS
TB-031703	3/17/03 0950		X	X			01	2	2							Trip Blank
WOD-MW4	3/17/03 1330		X	X			02	8	2	2	1	1	1	1		
WOD-WFF16-GW6	3/17/03 1550		X	X			03	8	2	2	1	1	1	1		
WOD-MW4F	3/17/03 1330		X	X			04	1							1	
WOD-WFF16-GW6F	3/17/03 1550		X	X			05	1							1	
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/17/03 1700	[signature]	3-18-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank water provided by the Lab
Shipped via Federal Express
Airbill No 8286 8464 4959

COOLER TEMP: 2C

0000007

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Lab File ID: V5E5000 BFB Injection Date: 03/23/03

Instrument ID: V5 BFB Injection Time: 1009

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.1
75	30.0 - 60.0% of mass 95	41.5
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	76.9
175	5.0 - 9.0% of mass 174	5.4 (7.1)1
176	95.0 - 101.0% of mass 174	73.8 (95.9)1
177	5.0 - 9.0% of mass 176	4.8 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505R	V5S0323A	V5E5001	03/23/03	1028
02	VSTD0055R	V5S0323B	V5E5002	03/23/03	1056
03	VSTD2005R	V5S0323D	V5E5004	03/23/03	1207
04	VSTD1005R	V5S0323E	V5E5005	03/23/03	1235
05	VSTD0205R	V5S0323F	V5E5006	03/23/03	1303
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6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

	COMPOUND	RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
	Dichlorodifluoromethane	0.296	0.242	0.255	0.246	0.256	0.259	8.2
*	Chloromethane	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
	Vinyl Chloride	0.449	0.346	0.362	0.357	0.365	0.376	11.1
	Bromomethane	0.290	0.233	0.232	0.216	0.188	0.232	16.0
	Chloroethane	0.176	0.147	0.209	0.159	0.140	0.166	16.4
	Trichlorofluoromethane	0.355	0.309	0.360	0.344	0.341	0.342	5.8
	1,1-Dichloroethene	0.278	0.252	0.294	0.278	0.274	0.275	5.5
	Acetone	0.073	0.055	0.054	0.049	0.046	0.055	18.6
	Carbon Disulfide	1.029	0.531	0.995	0.547	0.784	0.777	30.5
	Methylene Chloride	0.326	0.316	0.320	0.329	0.331	0.324	2.0
	trans-1,2-Dichloroethene	0.292	0.286	0.306	0.321	0.322	0.305	5.3
	Methyl tert-butyl ether	0.759	0.652	0.604	0.645	0.632	0.658	9.0
*	1,1-Dichloroethane	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
	2-Butanone	0.140	0.118	0.103	0.113	0.106	0.116	12.5
	cis-1,2-Dichloroethene	0.308	0.293	0.312	0.328	0.331	0.314	4.9
	Chloroform	0.460	0.434	0.463	0.480	0.474	0.462	3.8
	1,1,1-Trichloroethane	0.305	0.298	0.315	0.321	0.318	0.311	3.1
	Carbon Tetrachloride	0.243	0.239	0.264	0.280	0.279	0.261	7.4
	1,2-Dichloroethane	0.306	0.294	0.295	0.305	0.295	0.299	2.0
	Benzene	1.079	1.026	1.063	1.118	1.110	1.079	3.5
	Trichloroethene	0.276	0.261	0.278	0.294	0.300	0.282	5.5
	1,2-Dichloropropane	0.284	0.276	0.283	0.297	0.289	0.286	2.8
	Bromodichloromethane	0.323	0.316	0.335	0.353	0.358	0.337	5.5
	cis-1,3-Dichloropropene	0.371	0.382	0.426	0.441	0.453	0.415	8.7
	4-Methyl-2-pentanone	0.260	0.230	0.211	0.229	0.236	0.233	7.6
	Toluene	1.134	1.074	1.127	1.170	1.168	1.135	3.5
	trans-1,3-Dichloropropene	0.288	0.314	0.360	0.367	0.381	0.342	11.5
	1,1,2-Trichloroethane	0.228	0.229	0.227	0.244	0.249	0.235	4.5
	Tetrachloroethene	0.315	0.302	0.313	0.335	0.338	0.321	4.8
	2-Hexanone	0.239	0.235	0.193	0.227	0.218	0.222	8.2
	Dibromochloromethane	0.322	0.334	0.360	0.383	0.389	0.358	8.2
	1,2-Dibromoethane	0.358	0.360	0.350	0.383	0.381	0.366	4.1
*	Chlorobenzene	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
	Ethylbenzene	0.536	0.520	0.523	0.564	0.566	0.542	4.0
	m,p-Xylene	0.669	0.643	0.655	0.702	0.677	0.669	3.4
	o-Xylene	0.648	0.636	0.646	0.688	0.678	0.659	3.5
	Xylene (Total)	0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Styrene		1.017	1.059	1.131	1.180	1.148	1.107	6.1
Bromoform	*	0.174	0.212	0.242	0.260	0.274	0.232	17.2*
Isopropylbenzene		1.581	1.531	1.567	1.699	1.696	1.615	4.8
1,1,2,2-Tetrachloroethane	*	1.016	0.945	0.810	0.926	0.922	0.924	8.0*
1,3,5-Trimethylbenzene		2.916	2.614	2.610	2.755	2.702	2.719	4.6
1,2,4-Trimethylbenzene		2.806	2.620	2.628	2.778	2.736	2.714	3.1
1,3-Dichlorobenzene		1.584	1.511	1.542	1.638	1.633	1.582	3.5
1,4-Dichlorobenzene		1.677	1.564	1.560	1.652	1.659	1.622	3.5
1,2-Dichlorobenzene		1.436	1.430	1.430	1.538	1.522	1.471	3.7
1,2-Dibromo-3-chloropropane		0.084	0.092	0.085	0.107	0.110	0.096	12.9
1,2,4-Trichlorobenzene		0.569	0.686	0.659	0.831	0.883	0.726	17.8
1,1,2-Trichlo-1,2,2-trifluor		0.249	0.220	0.214	0.195	0.186	0.213	11.5
Methyl Acetate		0.254	0.222	0.182	0.204	0.196	0.212	13.2
Cyclohexane		0.505	0.421	0.444	0.438	0.432	0.448	7.4
Methylcyclohexane		0.494	0.409	0.417	0.425	0.416	0.432	8.1
Dibromofluoromethane		0.268	0.252	0.268	0.284	0.284	0.271	5.0
1,2-Dichloroethane-d4		0.058	0.057	0.060	0.062	0.061	0.060	3.9
Toluene-d8		1.356	1.222	1.253	1.326	1.298	1.291	4.2
Bromofluorobenzene		0.548	0.482	0.492	0.531	0.525	0.516	5.4

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

	EPA SAMPLE NO.	SMC1 #	SMC2 (DCE) #	SMC3 (TOL) #	OTHER (BFB) #	TOT OUT
01	VBLK5X	101	100	103	95	0
02	V5XLCS	102	97	99	96	0
03	WOD-MW4	98	93	102	90	0
04	TB-031703	98	94	103	87	0
05	WFF16GW6	99	95	102	88	0
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		QC LIMITS
SMC1	= Dibromofluoromethane	(78-117)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(62-124)
SMC3 (TOL)	= Toluene-d8	(81-116)
OTHER (BFB)	= Bromofluorobenzene	(74-126)

Column to be used to flag recovery values

* Values outside of contract required QC limits

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Lab File ID: V5E5140 BFB Injection Date: 03/26/03

Instrument ID: V5 BFB Injection Time: 0732

GC Column: DB-624 ID: 0.25 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	16.0
75	30.0 - 60.0% of mass 95	40.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	50.0 - 100.0% of mass 95	77.7
175	5.0 - 9.0% of mass 174	5.5 (7.1)1
176	95.0 - 101.0% of mass 174	75.4 (97.0)1
177	5.0 - 9.0% of mass 176	4.8 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0505X	V5S0326A	V5E5141	03/26/03	0800
02	VBLK5X	V5B0326A	V5E5142	03/26/03	0828
03	V5XLCS	V5L0326A	V5E5144	03/26/03	0924
04	WOD-MW4	B0439-02A	V5E5146	03/26/03	1020
05	TB-031703	B0439-01A	V5E5147	03/26/03	1048
06	WFF16GW6	B0439-03A	V5E5148	03/26/03	1116
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FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: V5 Calibration Date: 03/26/03 Time: 0800

Lab File ID: V5E5141 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D	
Dichlorodifluoromethane	0.259	0.184	0.01	29.0	20.0	<-
Chloromethane	0.410	0.365	0.1	11.0	20.0	
Vinyl Chloride	0.376	0.345	0.01	8.2	20.0	
Bromomethane	0.232	0.240	0.01	3.4	20.0	
Chloroethane	0.166	0.185	0.01	11.4	20.0	
Trichlorofluoromethane	0.342	0.335	0.01	2.0	20.0	
1,1-Dichloroethene	0.275	0.300	0.01	9.1	20.0	
Acetone	0.055	0.051	0.01	7.3	20.0	
Carbon Disulfide	0.777	0.792	0.01	1.9	20.0	
Methylene Chloride	0.324	0.334	0.01	3.1	20.0	
trans-1,2-Dichloroethene	0.305	0.320	0.01	4.9	20.0	
Methyl tert-butyl ether	0.658	0.498	0.01	24.3	20.0	<-
1,1-Dichloroethane	0.492	0.530	0.1	7.7	20.0	
2-Butanone	0.116	0.097	0.01	16.4	20.0	
cis-1,2-Dichloroethene	0.314	0.326	0.01	3.8	20.0	
Chloroform	0.462	0.492	0.01	6.5	20.0	
1,1,1-Trichloroethane	0.311	0.341	0.01	9.6	20.0	
Carbon Tetrachloride	0.261	0.297	0.01	13.8	20.0	
1,2-Dichloroethane	0.299	0.314	0.01	5.0	20.0	
Benzene	1.079	1.159	0.01	7.4	20.0	
Trichloroethene	0.282	0.288	0.01	2.1	20.0	
1,2-Dichloropropane	0.286	0.310	0.01	8.4	20.0	
Bromodichloromethane	0.337	0.355	0.01	5.3	20.0	
cis-1,3-Dichloropropene	0.415	0.431	0.01	3.8	20.0	
4-Methyl-2-pentanone	0.233	0.208	0.01	10.7	20.0	
Toluene	1.135	1.199	0.01	5.6	20.0	
trans-1,3-Dichloropropene	0.342	0.353	0.01	3.2	20.0	
1,1,2-Trichloroethane	0.235	0.235	0.01	0.0	20.0	
Tetrachloroethene	0.321	0.315	0.01	1.9	20.0	
2-Hexanone	0.222	0.186	0.01	16.2	20.0	
Dibromochloromethane	0.358	0.357	0.01	0.3	20.0	
1,2-Dibromoethane	0.366	0.346	0.01	5.5	20.0	
Chlorobenzene	1.059	1.070	0.3	1.0	20.0	
Ethylbenzene	0.542	0.541	0.01	0.2	20.0	
m,p-Xylene	0.669	0.678	0.01	1.3	20.0	
o-Xylene	0.659	0.669	0.01	1.5	20.0	
Xylene (Total)	0.666	0.675	0.01	1.4	20.0	

FORM 7
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: V5 Calibration Date: 03/26/03 Time: 0800

Lab File ID: V5E5141 Init. Calib. Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Init. Calib. Times: 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Styrene	1.107	1.165	0.01	5.2	20.0
Bromoform	0.232	0.230	0.1	0.9	20.0
Isopropylbenzene	1.615	1.628	0.01	0.8	20.0
1,1,2,2-Tetrachloroethane	0.924	0.822	0.3	11.0	20.0
1,3,5-Trimethylbenzene	2.719	2.673	0.01	1.7	20.0
1,2,4-Trimethylbenzene	2.714	2.721	0.01	0.2	20.0
1,3-Dichlorobenzene	1.582	1.576	0.01	0.4	20.0
1,4-Dichlorobenzene	1.622	1.615	0.01	0.4	20.0
1,2-Dichlorobenzene	1.471	1.481	0.01	0.7	20.0
1,2-Dibromo-3-chloropropane	0.096	0.083	0.01	13.5	20.0
1,2,4-Trichlorobenzene	0.726	0.684	0.01	5.8	20.0
1,1,2-Trichlo-1,2,2-trifluor	0.213	0.199	0.01	6.6	20.0
Methyl Acetate	0.212	0.203	0.01	4.2	20.0
Cyclohexane	0.448	0.427	0.01	4.7	20.0
Methylcyclohexane	0.432	0.386	0.01	10.6	20.0
Dibromofluoromethane	0.271	0.281	0.01	3.7	20.0
1,2-Dichloroethane-d4	0.060	0.059	0.01	1.7	20.0
Toluene-d8	1.291	1.304	0.01	1.0	20.0
Bromofluorobenzene	0.516	0.506	0.01	1.9	20.0

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: V5B0326A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5142

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	1	J
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: V5B0326A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5142

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK5X

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: V5B0326A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5142

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
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30.					

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: V5XLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		31	62	48-135
Chloromethane	50		46	92	60-118
Vinyl Chloride	50		47	94	65-113
Bromomethane	50		52	104	73-122
Chloroethane	50		58	116	72-118
Trichlorofluoromethane	50		47	94	68-129
1,1-Dichloroethene	50		55	110	67-121
Acetone	50		47	94	38-161
Carbon Disulfide	50		52	104	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		36	72*	75-123
1,1-Dichloroethane	50		53	106	83-116
2-Butanone	50		38	76	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		54	108	81-122
Carbon Tetrachloride	50		55	110	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		50	100	77-121
1,2-Dichloropropane	50		52	104	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		50	100	78-119
4-Methyl-2-pentanone	50		40	80	57-138
Toluene	50		51	102	81-121
trans-1,3-Dichloroprope	50		50	100	85-118
1,1,2-Trichloroethane	50		48	96	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: V5XLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Tetrachloroethene	50		47	94	73-121
2-Hexanone	50		36	72	53-145
Dibromochloromethane	50		48	96	80-124
1,2-Dibromoethane	50		45	90	80-124
Chlorobenzene	50		49	98	82-118
Ethylbenzene	50		48	96	80-122
Xylene (Total)	150		150	100	81-121
Styrene	50		51	102	77-128
Bromoform	50		45	90	77-130
Isopropylbenzene	50		49	98	58-148
1,1,2,2-Tetrachloroetha	50		42	84	76-125
1,3,5-Trimethylbenzene	50		49	98	76-116
1,2,4-Trimethylbenzene	50		50	100	77-117
1,3-Dichlorobenzene	50		49	98	80-116
1,4-Dichlorobenzene	50		48	96	80-114
1,2-Dichlorobenzene	50		48	96	81-116
1,2-Dibromo-3-chloropro	50		38	76	71-126
1,2,4-Trichlorobenzene	50		42	84	67-114
1,1,2-Trichlo-1,2,2-tri	50		44	88	70-130
Methyl Acetate	50		44	88	70-130
Cyclohexane	50		45	90	70-130
Methylcyclohexane	50		41	82	70-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 1 out of 50 outside limits

COMMENTS: _____

TETRA TECH NUS, INC. **CALCULATION WORKSHEET** PAGE _____ OF _____

CLIENT NASA Wallops Island CTO-848		JOB NUMBER Jb-4740 SDG-B0439	
SUBJECT Sample Calculation			
BASED ON		DRAWING NUMBER	
BY Bernard F Spada III	CHECKED BY	APPROVED BY	DATE 5/7/03

Sample TB-031703

Methylene chloride = 48 ug/L

$$MeCL = \frac{(460427)(50\ ug/L)}{(1463895)(0.324)} = 48.54\ ug/L$$

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5147

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	46	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	48	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031703

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: B0439-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5147

Level: (low/med) LOW Date Received: 03/18/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

Data File: \\AVOGADRO\USERDATA\Organic\voa\v5.i\030326.B\V5E5147.D
Report Date: 03-Apr-2003 14:10

Mitkem Corporation

Method 8260 Water and Medium Soil

Data file : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030326.B\V5E5147.D
Lab Smp Id: B0439-01A Client Smp ID: TB-031703
Inj Date : 26-MAR-2003 10:48
Operator : TRA Inst ID: v5.i
Smp Info : TETRA,B0439-01A,TB-031703,V5B0326A,B0439
Misc Info : 18-MAR-03
Comment :
Method : \\AVOGADRO\USERDATA\Organic\voa\v5.i\030326.B\v58260.m
Meth Date : 03-Apr-2003 14:08 mtl Quant Type: ISTD
Cal Date : 23-MAR-2003 13:03 Cal File: V5E5006.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: CTO848.sub
Target Version: 4.03
Processing Host: TARGET6

Concentration Formula: Amt * DF * Uf * 5/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	ng unit correction factor
Vo	5.000	Sample Volume purged (mL)

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (ug/L)
9 Acetone	43	3.439	3.420	(0.549)	75399	46.3536	46
14 Methylene Chloride	84	3.883	3.863	(0.620)	460427	48.4563	48
$ 30 Dibromofluoromethane	113	5.596	5.577	(0.893)	390663	49.2186	49
$ 35 1,2-Dichloroethane-d4	102	5.931	5.922	(0.947)	82053	46.9169	47
* 38 Fluorobenzene	96	6.266	6.257	(1.000)	1463895	50.0000	
$ 47 Toluene-d8	98	7.891	7.882	(0.833)	1352722	51.6819	52
* 57 Chlorobenzene-d5	117	9.477	9.468	(1.000)	1013851	50.0000	
$ 68 Bromofluorobenzene	95	10.827	10.827	(1.142)	455567	43.5465	44
* 81 1,4-Dichlorobenzene-d4	152	12.215	12.216	(1.000)	353708	50.0000	

TLR 4/3/03

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Lab File ID: S3C2672 DFTPP Injection Date: 04/02/03

Instrument ID: S3 DFTPP Injection Time: 1101

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.7
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	48.9
70	Less than 2.0% of mass 69	0.3 (0.5)1
127	40.0 - 60.0% of mass 198	49.8
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.7
275	10.0 - 30.0% of mass 198	27.4
365	Greater than 1.0% of mass 198	3.47
441	Present, but less than mass 443	11.4
442	40.0 - 99.9% of mass 198	78.0
443	17.0 - 23.0% of mass 442	15.1 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503Q	SS0402A	S3C2673	04/02/03	1121
02	SSTD1203Q	SS0402B	S3C2674	04/02/03	1235
03	SSTD0103Q	SS0402C	S3C2675	04/02/03	1317
04	SSTD1603Q	SS0402D	S3C2676	04/02/03	1421
05	SSTD0203Q	SS0402E	S3C2677	04/02/03	1502
06	SSTD0803Q	SS0402F	S3C2678	04/02/03	1544
07					
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6B

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date(s): 04/02/03 04/02/03

Calibration Time(s): 1121 1544

LAB FILE ID: RRF10 =S3C2675 RRF20 =S3C2677
RRF50 =S3C2673 RRF80 =S3C2678 RRF120=S3C2674

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
Phenol	*	1.667		1.852	1.670	1.703			*
bis(2-Chloroethyl)Ether	*	1.320		1.426	1.336	1.336			*
2-Chlorophenol	*	1.368		1.450	1.368	1.344			*
2-Methylphenol	*	1.140		1.328	1.248	1.237			*
2,2'-oxybis(1-Chloropropane)	*	2.157		2.187	2.028	2.010			*
4-Methylphenol	*	1.119		1.368	1.305	1.294			*
N-Nitroso-di-n-propylamine	*	0.990		1.058	0.998	0.961			*
Hexachloroethane	*	0.586		0.573	0.550	0.537			*
Nitrobenzene	*	0.378		0.419	0.402	0.403			*
Isophorone	*	0.538		0.568	0.538	0.528			*
2-Nitrophenol	*	0.173		0.218	0.207	0.210			*
2,4-Dimethylphenol	*	0.294		0.342	0.322	0.324			*
2,4-Dichlorophenol	*	0.253		0.304	0.285	0.291			*
Naphthalene	*	1.124		1.166	1.097	1.096			*
4-Chloroaniline	*	0.078		0.088	0.075	0.077			*
bis(2-Chloroethoxy)methane	*	0.428		0.463	0.435	0.438			*
Hexachlorobutadiene	*	0.162		0.169	0.160	0.160			*
4-Chloro-3-Methylphenol	*	0.269		0.337	0.320	0.323			*
2-Methylnaphthalene	*	0.936		0.986	0.941	0.939			*
Hexachlorocyclopentadiene	*	0.177		0.243	0.247	0.238			*
2,4,6-Trichlorophenol	*	0.326		0.382	0.356	0.357			*
2,4,5-Trichlorophenol	*		0.324	0.378	0.377	0.373			*
2-Chloronaphthalene	*	1.149		1.225	1.149	1.144			*
2-Nitroaniline	*		0.460	0.538	0.502	0.491			*
Dimethylphthalate	*	1.295		1.416	1.326	1.306			*
Acenaphthylene	*	1.910		2.024	1.879	1.854			*
2,6-Dinitrotoluene	*	0.300		0.335	0.311	0.289			*
3-Nitroaniline	*		0.265	0.294	0.279	0.289			*
Acenaphthene	*	1.197		1.262	1.187	1.178			*
2,4-Dinitrophenol	*		0.066	0.121	0.142	0.135			*
4-Nitrophenol	*		0.085	0.110	0.114	0.113			*
Dibenzofuran	*	2.085		2.219	2.088	2.057			*
2,4-Dinitrotoluene	*	0.328		0.424	0.410	0.386			*
Diethylphthalate	*	1.286		1.346	1.240	1.190			*
4-Chlorophenyl-phenylether	*	0.615		0.654	0.617	0.618			*
Fluorene	*	1.336		1.389	1.314	1.298			*
4-Nitroaniline	*		0.213	0.225	0.195	0.195			*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date(s): 04/02/03 04/02/03

Calibration Time(s): 1121 1544

LAB FILE ID: RRF10 =S3C2675 RRF20 =S3C2677
RRF50 =S3C2673 RRF80 =S3C2678 RRF120=S3C2674

COMPOUND		RRF10	RRF20	RRF50	RRF80	RRF120	$\overline{RRF}$	% RSD	
4,6-Dinitro-2-methylphenol	*		0.117	0.148	0.146	0.142			*
N-Nitrosodiphenylamine (1)	*	0.321		0.316	0.285	0.269			*
4-Bromophenyl-phenylether	*	0.214		0.232	0.220	0.218			*
Hexachlorobenzene	*	0.254		0.247	0.238	0.233			*
Pentachlorophenol	*		0.081	0.122	0.114	0.124			*
Phenanthrene	*	1.163		1.189	1.122	1.114			*
Anthracene	*	1.113		1.144	1.103	1.084			*
Di-n-butylphthalate	*	1.382		1.384	1.304	1.296			*
Fluoranthene	*	1.058		1.068	1.032	1.012			*
Pyrene	*	1.542		1.556	1.416	1.396			*
Butylbenzylphthalate	*	0.760		0.780	0.683	0.695			*
3,3'-Dichlorobenzidine		0.272		0.202	0.166	0.183			
Benzo(a)anthracene	*	1.130		1.181	1.105	1.094			*
Chrysene	*	1.134		1.114	1.056	1.037			*
bis(2-Ethylhexyl)phthalate	*	1.086		1.122	0.930	1.000			*
Di-n-octylphthalate	*	2.730		2.880	2.387	2.487			*
Benzo(b)fluoranthene	*	1.615		1.643	1.634	1.653			*
Benzo(k)fluoranthene	*	1.632		1.730	1.574	1.523			*
Benzo(a)pyrene	*	1.413		1.462	1.377	1.360			*
Indeno(1,2,3-cd)pyrene	*	1.575		1.596	1.531	1.551			*
Dibenzo(a,h)anthracene	*	1.307		1.356	1.304	1.336			*
Benzo(g,h,i)perylene	*	1.236		1.332	1.260	1.303			*
Nitrobenzene-d5		0.398		0.440	0.418	0.417			*
2-Fluorobiphenyl	*	1.443		1.522	1.418	1.414			*
Terphenyl-d14	*	1.152		1.186	1.084	1.072			*
Phenol-d5	*	1.365		1.683	1.574	1.570			*
2-Fluorophenol	*	1.002		1.248	1.140	1.204			*
2,4,6-Tribromophenol	*	0.095		0.110	0.105	0.106			*
2-Chlorophenol-d4	*	1.373		1.458	1.362	1.350			*
1,2-Dichlorobenzene-d4	*	0.858		0.944	0.882	0.872			*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date(s): 04/02/03 04/02/03

Calibration Time(s): 1121 1544

LAB FILE ID: RRF160=S3C2676

COMPOUND	RRF160					$\overline{RRF}$	% RSD
Phenol	* 1.614					1.701	5.3*
bis(2-Chloroethyl)Ether	* 1.240					1.332	4.9*
2-Chlorophenol	* 1.308					1.368	3.8*
2-Methylphenol	* 1.181					1.227	5.8*
2,2'-oxybis(1-Chloropropane)	* 1.931					2.063	5.2*
4-Methylphenol	* 1.267					1.271	7.3*
N-Nitroso-di-n-propylamine	* 0.922					0.986	5.1*
Hexachloroethane	* 0.516					0.552	5.0*
Nitrobenzene	* 0.398					0.400	3.7*
Isophorone	* 0.518					0.538	3.4*
2-Nitrophenol	* 0.205					0.203	8.5*
2,4-Dimethylphenol	* 0.321					0.321	5.4*
2,4-Dichlorophenol	* 0.285					0.284	6.6*
Naphthalene	* 1.078					1.112	3.1*
4-Chloroaniline	* 0.070					0.078	8.4*
bis(2-Chloroethoxy)methane	* 0.433					0.439	3.2*
Hexachlorobutadiene	* 0.158					0.162	2.6*
4-Chloro-3-Methylphenol	* 0.321					0.314	8.4*
2-Methylnaphthalene	* 0.911					0.943	2.9*
Hexachlorocyclopentadiene	* 0.240					0.229	12.7*
2,4,6-Trichlorophenol	* 0.355					0.355	5.5*
2,4,5-Trichlorophenol	* 0.375					0.365	6.3*
2-Chloronaphthalene	* 1.138					1.161	3.1*
2-Nitroaniline	* 0.487					0.496	5.7*
Dimethylphthalate	* 1.242					1.317	4.8*
Acenaphthylene	* 1.828					1.899	4.0*
2,6-Dinitrotoluene	* 0.287					0.304	6.5*
3-Nitroaniline	* 0.296					0.285	4.5*
Acenaphthene	* 1.169					1.199	3.1*
2,4-Dinitrophenol	* 0.137					0.120	25.9*
4-Nitrophenol	* 0.112					0.107	11.5*
Dibenzofuran	* 2.022					2.094	3.6*
2,4-Dinitrotoluene	* 0.378					0.385	9.6*
Diethylphthalate	* 1.164					1.245	5.9*
4-Chlorophenyl-phenylether	* 0.615					0.624	2.7*
Fluorene	* 1.278					1.323	3.2*
4-Nitroaniline	* 0.175					0.201	9.5*

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date(s): 04/02/03 04/02/03

Calibration Time(s): 1121 1544

LAB FILE ID: RRF160=S3C2676

COMPOUND		RRF160						$\overline{RRF}$	% RSD
4,6-Dinitro-2-methylphenol	*	0.152						0.141	9.8*
N-Nitrosodiphenylamine (1)	*	0.259						0.290	9.5*
4-Bromophenyl-phenylether	*	0.214						0.220	3.2*
Hexachlorobenzene	*	0.241						0.243	3.3*
Pentachlorophenol	*	0.124						0.113	16.1*
Phenanthrene	*	1.081						1.134	3.7*
Anthracene	*	1.044						1.098	3.4*
Di-n-butylphthalate	*	1.281						1.329	3.7*
Fluoranthene	*	1.010						1.036	2.6*
Pyrene	*	1.332						1.448	6.7*
Butylbenzylphthalate	*	0.646						0.713	7.8*
3,3'-Dichlorobenzidine		0.158						0.196	23.3
Benzo(a)anthracene	*	1.079						1.118	3.6*
Chrysene	*	1.010						1.070	4.9*
bis(2-Ethylhexyl)phthalate	*	0.914						1.010	9.1*
Di-n-octylphthalate	*	2.253						2.547	10.0*
Benzo(b)fluoranthene	*	1.620						1.633	1.0*
Benzo(k)fluoranthene	*	1.551						1.602	5.1*
Benzo(a)pyrene	*	1.349						1.392	3.3*
Indeno(1,2,3-cd)pyrene	*	1.587						1.568	1.7*
Dibenzo(a,h)anthracene	*	1.361						1.333	2.0*
Benzo(g,h,i)perylene	*	1.320						1.290	3.2*
Nitrobenzene-d5		0.413						0.417	3.5*
2-Fluorobiphenyl	*	1.395						1.438	3.5*
Terphenyl-d14	*	1.025						1.104	5.9*
Phenol-d5	*	1.497						1.538	7.6*
2-Fluorophenol	*	1.138						1.146	8.1*
2,4,6-Tribromophenol	*	0.108						0.105	5.4*
2-Chlorophenol-d4	*	1.288						1.366	4.4*
1,2-Dichlorobenzene-d4	*	0.842						0.880	4.4*

(1) Cannot be seperated from Diphenylamine

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

2C
WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLK3G	66	70	72	15	28	69	62	71	0
02	S3GLCS	60	70	70	13	26	78	61	69	0
03	WOD-MW4	55	69	60	6	21	73	53	65	0
04	WFF16GW6	53	70	61	12	25	66	57	63	0
05										
06										
07										
08										
09										
10										
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30										

		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(48-106)	
S2 (FBP)	= 2-Fluorobiphenyl	(38-120)	
S3 (TPH)	= Terphenyl-d14	(31-133)	
S4 (PHL)	= Phenol-d5	(0-120)	
S5 (2FP)	= 2-Fluorophenol	(1-103)	
S6 (TBP)	= 2,4,6-Tribromophenol	(37-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(28-107)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(37-106)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Lab File ID: S3C2700 DFTPP Injection Date: 04/03/03

Instrument ID: S3 DFTPP Injection Time: 1219

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 60.0% of mass 198	46.4
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	46.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	40.0 - 60.0% of mass 198	49.2
197	Less than 1.0% of mass 198	0.0
198	Base Peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.8
275	10.0 - 30.0% of mass 198	28.6
365	Greater than 1.0% of mass 198	3.39
441	Present, but less than mass 443	12.9
442	40.0 - 99.9% of mass 198	85.4
443	17.0 - 23.0% of mass 442	16.6 (19.4)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD0503S	SS0403A	S3C2701	04/03/03	1240
02	SBLK3G	MB-6282	S3C2708	04/03/03	1811
03	S3GLCS	LCS-6282	S3C2709	04/03/03	1852
04	WOD-MW4	B0439-02E	S3C2710	04/03/03	1933
05	WFF16GW6	B0439-03E	S3C2711	04/03/03	2014
06					
07					
08					
09					
10					
11					
12					
13					
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19					
20					
21					
22					

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date: 04/03/03 Time: 1240

Lab File ID: S3C2701 Init. Calib. Date(s): 04/02/03 04/02/03

Init. Calib. Times: 1121 1544

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.701	1.680	0.05	1.2	20.0
bis(2-Chloroethyl)Ether	1.332	1.376	0.05	3.3	100
2-Chlorophenol	1.368	1.402	0.05	2.5	100
2-Methylphenol	1.227	1.255	0.05	2.3	100
2,2'-oxybis(1-Chloropropane)	2.063	2.144	0.05	3.9	100
4-Methylphenol	1.271	1.238	0.05	2.6	100
N-Nitroso-di-n-propylamine	0.986	0.850	0.05	13.8	100
Hexachloroethane	0.552	0.603	0.05	9.2	100
Nitrobenzene	0.400	0.396	0.05	1.0	100
Isophorone	0.538	0.559	0.05	3.9	100
2-Nitrophenol	0.203	0.192	0.05	5.4	20.0
2,4-Dimethylphenol	0.321	0.325	0.05	1.2	100
2,4-Dichlorophenol	0.284	0.269	0.05	5.3	20.0
Naphthalene	1.112	1.151	0.05	3.5	100
4-Chloroaniline	0.078	0.078	0.05	0.0	100
bis(2-Chloroethoxy)methane	0.439	0.438	0.05	0.2	100
Hexachlorobutadiene	0.162	0.173	0.05	6.8	20.0
4-Chloro-3-Methylphenol	0.314	0.308	0.05	1.9	20.0
2-Methylnaphthalene	0.943	0.978	0.05	3.7	100
Hexachlorocyclopentadiene	0.229	0.240	0.05	4.8	100
2,4,6-Trichlorophenol	0.355	0.355	0.05	0.0	100
2,4,5-Trichlorophenol	0.365	0.286	0.05	21.6	100
2-Chloronaphthalene	1.161	1.177	0.05	1.4	100
2-Nitroaniline	0.496	0.435	0.05	12.3	100
Dimethylphthalate	1.317	1.366	0.05	3.7	100
Acenaphthylene	1.899	1.966	0.05	3.5	100
2,6-Dinitrotoluene	0.304	0.315	0.05	3.6	100
3-Nitroaniline	0.285	0.275	0.05	3.5	100
Acenaphthene	1.199	1.237	0.05	3.2	20.0
2,4-Dinitrophenol	0.120	0.064	0.05	46.7	100
4-Nitrophenol	0.107	0.082	0.05	23.4	100
Dibenzofuran	2.094	2.132	0.05	1.8	100
2,4-Dinitrotoluene	0.385	0.387	0.05	0.5	100
Diethylphthalate	1.245	1.316	0.05	5.7	100
4-Chlorophenyl-phenylether	0.624	0.640	0.05	2.6	100
Fluorene	1.323	1.357	0.05	2.6	100
4-Nitroaniline	0.201	0.315	0.05	56.7	100

FORM 7
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: S3 Calibration Date: 04/03/03 Time: 1240

Lab File ID: S3C2701 Init. Calib. Date(s): 04/02/03 04/02/03

Init. Calib. Times: 1121 1544

GC Column: DB-5MS ID: 0.25 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
4,6-Dinitro-2-methylphenol	0.141	0.117	0.05	17.0	100
N-Nitrosodiphenylamine	0.290	0.308	0.05	6.2	20.0
4-Bromophenyl-phenylether	0.220	0.229	0.05	4.1	100
Hexachlorobenzene	0.243	0.246	0.05	1.2	100
Pentachlorophenol	0.113	0.093	0.05	17.7	20.0
Phenanthrene	1.134	1.185	0.05	4.5	100
Anthracene	1.098	1.174	0.05	6.9	100
Di-n-butylphthalate	1.329	1.459	0.05	9.8	100
Fluoranthene	1.036	1.216	0.05	17.4	20.0
Pyrene	1.448	1.325	0.05	8.5	100
Butylbenzylphthalate	0.713	0.642	0.05	10.0	100
3,3'-Dichlorobenzidine	0.196	0.299	0.05	52.6	100
Benzo(a)anthracene	1.118	1.159	0.05	3.7	100
Chrysene	1.070	1.137	0.05	6.3	100
bis(2-Ethylhexyl)phthalate	1.010	0.926	0.05	8.3	100
Di-n-octylphthalate	2.547	2.144	0.05	15.8	20.0
Benzo(b)fluoranthene	1.633	1.528	0.05	6.4	100
Benzo(k)fluoranthene	1.602	1.656	0.05	3.4	100
Benzo(a)pyrene	1.392	1.474	0.05	5.9	20.0
Indeno(1,2,3-cd)pyrene	1.568	1.838	0.05	17.2	100
Dibenzo(a,h)anthracene	1.333	1.551	0.05	16.4	100
Benzo(g,h,i)perylene	1.290	1.529	0.05	18.5	100
Nitrobenzene-d5	0.417	0.415	0.05	0.5	100
2-Fluorobiphenyl	1.438	1.482	0.05	3.0	100
Terphenyl-d14	1.104	0.989	0.05	10.4	100
Phenol-d5	1.538	1.527	0.05	0.7	100
2-Fluorophenol	1.146	1.119	0.05	2.4	100
2,4,6-Tribromophenol	0.105	0.103	0.05	1.9	100
2-Chlorophenol-d4	1.366	1.382	0.05	1.2	100
1,2-Dichlorobenzene-d4	0.880	0.978	0.05	11.1	100

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: MB-6282

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2708

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLK3G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: MB-6282

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2708

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

SBLK3G

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: MB-6282

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S3C2708

Level: (low/med) LOW Date Received: _____

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/24/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/03/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
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26.					
27.					
28.					
29.					
30.					

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: S3GLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		3	12	0-127
bis(2-Chloroethyl)Ether	25		15	60	46-109
2-Chlorophenol	25		15	60	22-117
2-Methylphenol	25		10	40	40-104
2,2'-oxybis(1-Chloropro	25		18	72	10-134
4-Methylphenol	25		6	24*	35-106
N-Nitroso-di-n-prop.(1)	25		16	64	44-122
Hexachloroethane	25		16	64	24-104
Nitrobenzene	25		14	56	47-112
Isophorone	25		26	104	48-118
2-Nitrophenol	25		13	52	29-122
2,4-Dimethylphenol	25		13	52	14-109
2,4-Dichlorophenol	25		8	32	31-122
Naphthalene	25		17	68	38-117
4-Chloroaniline	25		14	56	0-152
bis(2-Chloroethoxy)meth	25		16	64	49-112
Hexachlorobutadiene	25		15	60	28-109
4-Chloro-3-Methylphenol	25		10	40*	48-117
2-Methylnaphthalene	25		11	44	43-113
Hexachlorocyclopentadie	25		13	52	34-103
2,4,6-Trichlorophenol	25		16	64	34-127
2,4,5-Trichlorophenol	25		9	36	32-131
2-Chloronaphthalene	25		16	64	47-116
2-Nitroaniline	25		8	32*	51-120
Dimethylphthalate	25		19	76	53-124
Acenaphthylene	25		18	72	50-119
2,6-Dinitrotoluene	25		18	72	52-122
3-Nitroaniline	25		4	16*	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: S3GLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		18	72	50-121
2,4-Dinitrophenol	25		5	20	0-144
4-Nitrophenol	25		3	12	0-160
Dibenzofuran	25		13	52	51-122
2,4-Dinitrotoluene	25		14	56	52-126
Diethylphthalate	25		21	84	53-126
4-Chlorophenyl-phenylet	25		18	72	50-124
Fluorene	25		18	72	52-125
4-Nitroaniline	25		12	48	47-117
4,6-Dinitro-2-methylphe	25		10	40	3-151
N-Nitrosodiphenylamine	25		45	180*	50-150
4-Bromophenyl-phenyleth	25		19	76	51-124
Hexachlorobenzene	25		20	80	52-124
Pentachlorophenol	25		12	48	5-125
Phenanthrene	25		20	80	52-128
Anthracene	25		21	84	52-127
Di-n-butylphthalate	25		24	96	56-132
Fluoranthene	25		24	96	53-130
Pyrene	25		19	76	53-131
Butylbenzylphthalate	25		19	76	54-128
3,3'-Dichlorobenzidine	25		19	76	41-117
Benzo(a)anthracene	25		21	84	56-124
Chrysene	25		22	88	53-123
bis(2-Ethylhexyl)phthal	25		20	80	56-127
Di-n-octylphthalate	25		16	64	59-138
Benzo(b)fluoranthene	25		20	80	58-126
Benzo(k)fluoranthene	25		22	88	60-124
Benzo(a)pyrene	25		22	88	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: S3GLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Indeno(1,2,3-cd)pyrene	25		24	96	23-152
Dibenzo(a,h)anthracene	25		23	92	60-122
Benzo(g,h,i)perylene	25		22	88	57-124

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 5 out of 59 outside limits

COMMENTS: _____

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

GC Column: RTXCLPPEST 2 ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 6.80 DCB: 22.17

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	6.80	22.17
02	AR1242BL1	AR1242BL1	12/21/02	0206	6.81	22.18
03	AR1242BL2	AR1242BL2	12/21/02	0241	6.80	22.17
04	AR1242BL3	AR1242BL3	12/21/02	0316	6.80	22.17
05	AR1242BL4	AR1242BL4	12/21/02	0352	6.80	22.17
06	AR1242BL5	AR1242BL5	12/21/02	0427	6.80	22.17
07	AR1248BL1	AR1248BL1	12/21/02	0502	6.81	22.18
08	AR1248BL2	AR1248BL2	12/21/02	0538	6.80	22.17
09	AR1248BL3	AR1248BL3	12/21/02	0613	6.80	22.17
10	AR1248BL4	AR1248BL4	12/21/02	0649	6.80	22.17
11	AR1248BL5	AR1248BL5	12/21/02	0724	6.80	22.17
12	AR2154BL1	AR2154BL1	12/21/02	0759	6.81	22.18
13	AR2154BL2	AR2154BL2	12/21/02	0835	6.81	22.18
14	AR2154BL3	AR2154BL3	12/21/02	0910	6.80	22.18
15	AR2154BL4	AR2154BL4	12/21/02	0945	6.81	22.18
16	AR2154BL5	AR2154BL5	12/21/02	1020	6.80	22.18
17	AR1660BL1	AR1660BL1	12/21/02	1056	6.81	22.18
18	AR1660BL2	AR1660BL2	12/21/02	1131	6.81	22.18
19	AR1660BL3	AR1660BL3	12/21/02	1207	6.81	22.17
20	AR1660BL4	AR1660BL4	12/21/02	1242	6.80	22.17
21	AR1660BL5	AR1660BL5	12/21/02	1317	6.80	22.17
22	AR1660BB	AR1660BB	03/25/03	1343	6.76	22.11
23	BBLK1A	MB-6197	03/25/03	1453	6.76	22.11
24	B1ALCS	LCS-6197	03/25/03	1528	6.76	22.11
25	AR1660BC	AR1660BC	03/25/03	2122	6.76	22.11
26	WOD-MW4	B0439-02E	03/26/03	0019	6.76	22.12
27	WFF16GW6	B0439-03E	03/26/03	0054	6.76	22.12
28	AR1660BD	AR1660BD	03/26/03	0501	6.76	22.11
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 8
PCB ANALYTICAL SEQUENCE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

GC Column: RTXCLPPEST ID: 0.53 (mm) Init. Calib. Date(s): 12/21/02 12/21/02

Instrument ID: E1

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MEAN SURROGATE RT FROM INITIAL CALIBRATION
TCX: 8.46 DCB: 25.37

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	TCX RT #	DCB RT #
01	AR1232BL3	AR1232BL3	12/21/02	0130	8.46	25.37
02	AR1242BL1	AR1242BL1	12/21/02	0206	8.46	25.37
03	AR1242BL2	AR1242BL2	12/21/02	0241	8.46	25.37
04	AR1242BL3	AR1242BL3	12/21/02	0316	8.46	25.37
05	AR1242BL4	AR1242BL4	12/21/02	0352	8.46	25.37
06	AR1242BL5	AR1242BL5	12/21/02	0427	8.46	25.37
07	AR1248BL1	AR1248BL1	12/21/02	0502	8.46	25.37
08	AR1248BL2	AR1248BL2	12/21/02	0538	8.46	25.37
09	AR1248BL3	AR1248BL3	12/21/02	0613	8.46	25.37
10	AR1248BL4	AR1248BL4	12/21/02	0649	8.46	25.37
11	AR1248BL5	AR1248BL5	12/21/02	0724	8.46	25.37
12	AR2154BL1	AR2154BL1	12/21/02	0759	8.46	25.37
13	AR2154BL2	AR2154BL2	12/21/02	0835	8.46	25.37
14	AR2154BL3	AR2154BL3	12/21/02	0910	8.46	25.37
15	AR2154BL4	AR2154BL4	12/21/02	0945	8.46	25.38
16	AR2154BL5	AR2154BL5	12/21/02	1020	8.46	25.38
17	AR1660BL1	AR1660BL1	12/21/02	1056	8.46	25.38
18	AR1660BL2	AR1660BL2	12/21/02	1131	8.46	25.38
19	AR1660BL3	AR1660BL3	12/21/02	1207	8.46	25.37
20	AR1660BL4	AR1660BL4	12/21/02	1242	8.46	25.37
21	AR1660BL5	AR1660BL5	12/21/02	1317	8.46	25.37
22	AR1660BB	AR1660BB	03/25/03	1343	8.44	25.34
23	BBLK1A	MB-6197	03/25/03	1453	8.44	25.34
24	B1ALCS	LCS-6197	03/25/03	1528	8.44	25.34
25	AR1660BC	AR1660BC	03/25/03	2122	8.44	25.34
26	WOD-MW4	B0439-02E	03/26/03	0019	8.44	25.34
27	WFF16GW6	B0439-03E	03/26/03	0054	8.44	25.34
28	AR1660BD	AR1660BD	03/26/03	0501	8.44	25.34
29						
30						
31						
32						

QC LIMITS

TCX = Tetrachloro-m-xylene (+/- 0.05 MINUTES)
DCB = Decachlorobiphenyl (+/- 0.10 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299F RF0.5: E1D8300F RF1: E1D8301F
RF2.5: E1D8302F RF5: E1D8303F

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	14110.000	12826.000	12085.000	10928.400	9716.800
(2)	29070.000	25996.000	24341.000	21846.800	19326.000
(3)	16750.000	15228.000	14378.000	13058.000	11597.600
Aroclor-1221	5460.000	5504.000	5234.000	4875.200	4485.200
(2)	4200.000	4072.000	3799.000	3449.200	3133.200
(3)	15370.000	13860.000	12454.000	10762.000	9536.600
Aroclor-1232			11590.000		
(2)			7447.000		
(3)			11362.000		
Aroclor-1242	22040.000	20604.000	19459.000	17220.400	15332.800
(2)	12430.000	12092.000	11558.000	10300.400	9201.600
(3)	10980.000	10446.000	10015.000	8962.000	7983.800
Aroclor-1248	17610.000	17002.000	15027.000	13898.400	12399.000
(2)	20620.000	19860.000	17641.000	16575.200	14808.400
(3)	19430.000	18572.000	16697.000	15860.000	14228.400
Aroclor-1254	18680.000	16086.000	14585.000	12646.400	11393.400
(2)	30680.000	28502.000	25877.000	23467.200	21139.800
(3)	26330.000	24438.000	22396.000	20153.600	18537.400
Aroclor-1260	35060.000	31518.000	29905.000	26858.400	23934.800
(2)	48090.000	42850.000	40246.000	36780.800	32984.600
(3)	25640.000	24692.000	23594.000	21921.600	19892.200
Tetrachloro-m-xylene	468500.00	510500.00	531100.00	524960.00	481730.00
Decachlorobiphenyl	697500.00	628700.00	583550.00	526980.00	469760.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	11933.2400	14.2
(2)	AVRG	24115.9600	15.5
(3)	AVRG	14202.3200	13.9
Aroclor-1221	AVRG	5111.68000	8.4
(2)	AVRG	3730.68000	11.8
(3)	AVRG	12396.5200	18.8
Aroclor-1232	AVRG	11590.0000	0.0
(2)	AVRG	7447.00000	0.0
(3)	AVRG	11362.0000	0.0
Aroclor-1242	AVRG	18931.2400	14.1
(2)	AVRG	11116.4000	12.1
(3)	AVRG	9677.36000	12.4
Aroclor-1248	AVRG	15187.2800	14.2
(2)	AVRG	17900.9200	13.3
(3)	AVRG	16957.4800	12.3
Aroclor-1254	AVRG	14678.1600	19.5
(2)	AVRG	25933.2000	14.7
(3)	AVRG	22371.0000	14.0
Aroclor-1260	AVRG	29455.2400	14.5
(2)	AVRG	40190.2800	14.3
(3)	AVRG	23147.9600	9.9
Tetrachloro-m-xylene	AVRG	503358.000	5.4
Decachlorobiphenyl	AVRG	581298.000	15.2

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RF0.1: E1D8299R RF0.5: E1D8300R RF1: E1D8301R
RF2.5: E1D8302R RF5: E1D8303R

COMPOUND	RF0.1	RF0.5	RF1	RF2.5	RF5
Aroclor-1016	52950.000	49124.000	47593.000	44661.200	40483.400
(2)	29670.000	25156.000	23914.000	22091.600	20086.400
(3)	25460.000	21444.000	20439.000	18978.000	17367.200
Aroclor-1221	9320.000	8796.000	8332.000	7790.000	7256.200
(2)	7130.000	6548.000	6057.000	5506.000	5035.600
(3)	24000.000	20718.000	18728.000	16536.000	15014.000
Aroclor-1232			17557.000		
(2)			11773.000		
(3)			20896.000		
Aroclor-1242	39790.000	37792.000	37172.000	34340.800	31591.800
(2)	22040.000	19744.000	18792.000	17126.400	15643.200
(3)	20110.000	19192.000	18476.000	17442.800	16440.800
Aroclor-1248	29750.000	28084.000	25208.000	24294.000	22304.200
(2)	34310.000	31632.000	28477.000	28020.400	25953.600
(3)	37610.000	34342.000	31242.000	31133.200	29053.400
Aroclor-1254	43470.000	36630.000	32949.000	29369.200	27175.600
(2)	51420.000	49292.000	45916.000	42516.800	40196.600
(3)	40200.000	38130.000	36441.000	34414.000	32956.600
Aroclor-1260	57230.000	47432.000	44303.000	40690.000	37391.600
(2)	51170.000	47998.000	45836.000	44298.000	41940.200
(3)	71400.000	65122.000	64047.000	62343.600	60012.200
Tetrachloro-m-xylene	694500.00	711000.00	748000.00	786440.00	767690.00
Decachlorobiphenyl	812000.00	737000.00	700050.00	671420.00	636620.00

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	CURVE	COEFFICENT A1	%RSD OR R^2
Aroclor-1016	AVRG	46962.3200	10.0
(2)	AVRG	24183.6000	14.9
(3)	AVRG	20737.6400	14.7
Aroclor-1221	AVRG	8298.84000	9.8
(2)	AVRG	6055.32000	13.7
(3)	AVRG	18999.2000	18.6
Aroclor-1232	AVRG	17557.0000	0.0
(2)	AVRG	11773.0000	0.0
(3)	AVRG	20896.0000	0.0
Aroclor-1242	AVRG	36137.3200	8.9
(2)	AVRG	18669.1200	13.1
(3)	AVRG	18332.3200	7.8
Aroclor-1248	AVRG	25928.0400	11.5
(2)	AVRG	29678.6000	11.1
(3)	AVRG	32676.1200	10.2
Aroclor-1254	AVRG	33918.7600	19.0
(2)	AVRG	45868.2800	10.1
(3)	AVRG	36428.3200	7.9
Aroclor-1260	AVRG	45409.3200	16.8
(2)	AVRG	46248.4400	7.6
(3)	AVRG	64584.9600	6.6
Tetrachloro-m-xylene	AVRG	741526.000	5.2
Decachlorobiphenyl	AVRG	711418.000	9.4

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299F RT2: E1D8300F RT3: E1D8301F
RT4: E1D8302F RT5: E1D8303F

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.040	12.030	12.030	12.020	12.020
(2)	10.490	10.490	10.480	10.480	10.480
(3)	10.870	10.860	10.860	10.850	10.850
Aroclor-1221	7.470	7.470	7.470	7.470	7.460
(2)	7.920	7.920	7.920	7.920	7.920
(3)	8.040	8.040	8.040	8.040	8.040
Aroclor-1232			8.030		
(2)			9.120		
(3)			10.480		
Aroclor-1242	10.480	10.480	10.480	10.480	10.480
(2)	10.860	10.860	10.860	10.850	10.850
(3)	12.030	12.030	12.030	12.020	12.020
Aroclor-1248	12.030	12.020	12.020	12.020	12.020
(2)	13.210	13.200	13.200	13.200	13.200
(3)	13.260	13.260	13.260	13.260	13.260
Aroclor-1254	13.090	13.090	13.090	13.090	13.090
(2)	14.860	14.860	14.860	14.860	14.860
(3)	16.840	16.830	16.830	16.830	16.830
Aroclor-1260	16.840	16.830	16.830	16.820	16.820
(2)	18.610	18.600	18.600	18.590	18.590
(3)	19.330	19.320	19.320	19.310	19.310
Tetrachloro-m-xylene	6.810	6.810	6.810	6.800	6.800
Decachlorobiphenyl	22.180	22.180	22.170	22.170	22.170

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST 2 ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.028	11.950	12.090
(2)	10.484	10.407	10.547
(3)	10.858	10.777	10.917
Aroclor-1221	7.468	7.393	7.533
(2)	7.920	7.847	7.987
(3)	8.040	7.967	8.107
Aroclor-1232	8.030	7.963	8.103
(2)	9.120	9.053	9.193
(3)	10.480	10.410	10.550
Aroclor-1242	10.480	10.410	10.550
(2)	10.856	10.780	10.920
(3)	12.026	11.950	12.090
Aroclor-1248	12.022	11.953	12.093
(2)	13.202	13.127	13.267
(3)	13.260	13.190	13.330
Aroclor-1254	13.090	13.020	13.160
(2)	14.860	14.790	14.930
(3)	16.832	16.763	16.903
Aroclor-1260	16.828	16.750	16.890
(2)	18.598	18.523	18.663
(3)	19.318	19.237	19.377
Tetrachloro-m-xylene	6.806	6.747	6.847
Decachlorobiphenyl	22.174	22.067	22.267

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

LAB FILE ID: RT1: E1D8299R RT2: E1D8300R RT3: E1D8301R
RT4: E1D8302R RT5: E1D8303R

COMPOUND	RT1	RT2	RT3	RT4	RT5
Aroclor-1016	12.800	12.800	12.800	12.800	12.790
(2)	13.190	13.190	13.190	13.180	13.180
(3)	14.540	14.540	14.540	14.530	14.530
Aroclor-1221	9.530	9.530	9.530	9.530	9.530
(2)	9.980	9.980	9.980	9.990	9.990
(3)	10.170	10.170	10.170	10.170	10.170
Aroclor-1232			10.170		
(2)			11.440		
(3)			12.790		
Aroclor-1242	12.790	12.800	12.800	12.800	12.800
(2)	13.180	13.190	13.190	13.180	13.180
(3)	15.710	15.720	15.720	15.710	15.710
Aroclor-1248	14.530	14.530	14.530	14.530	14.530
(2)	15.600	15.600	15.600	15.600	15.600
(3)	15.710	15.710	15.720	15.720	15.720
Aroclor-1254	16.250	16.250	16.250	16.250	16.250
(2)	17.480	17.480	17.480	17.480	17.490
(3)	19.530	19.530	19.530	19.530	19.530
Aroclor-1260	18.590	18.590	18.590	18.580	18.580
(2)	19.530	19.530	19.520	19.520	19.520
(3)	21.230	21.230	21.220	21.220	21.220
Tetrachloro-m-xylene	8.460	8.460	8.460	8.460	8.460
Decachlorobiphenyl	25.380	25.380	25.370	25.370	25.370

FORM 6
PCB INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date(s): 12/21/02 12/21/02

Column: RTXCLPPEST ID: 0.53 (mm) Calibration Time(s): 0130 1317

COMPOUND	MEAN RT	RT WINDOW FROM	RT WINDOW TO
Aroclor-1016	12.798	12.723	12.863
(2)	13.186	13.113	13.253
(3)	14.536	14.460	14.600
Aroclor-1221	9.530	9.463	9.603
(2)	9.984	9.917	10.057
(3)	10.170	10.103	10.243
Aroclor-1232	10.170	10.097	10.237
(2)	11.440	11.373	11.513
(3)	12.790	12.723	12.863
Aroclor-1242	12.798	12.727	12.867
(2)	13.184	13.113	13.253
(3)	15.714	15.643	15.783
Aroclor-1248	14.530	14.463	14.603
(2)	15.600	15.530	15.670
(3)	15.716	15.647	15.787
Aroclor-1254	16.250	16.183	16.323
(2)	17.482	17.417	17.557
(3)	19.530	19.463	19.603
Aroclor-1260	18.586	18.513	18.653
(2)	19.524	19.450	19.590
(3)	21.224	21.147	21.287
Tetrachloro-m-xylene	8.460	8.407	8.507
Decachlorobiphenyl	25.374	25.270	25.470

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/25/03 Time: 1343

Lab File ID: E1E0102F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10487.000	0.01	12.1	15.0	
(2)	24115.960	20265.000	0.01	16.0	15.0	<-
(3)	14202.320	11678.000	0.01	17.8	15.0	<-
Aroclor-1260	29455.240	23849.000	0.01	19.0	15.0	<-
(2)	40190.280	36285.000	0.01	9.7	15.0	
(3)	23147.960	18593.000	0.01	19.7	15.0	<-
Tetrachloro-m-xylene	503358.00	474900.00	0.01	5.6	15.0	
Decachlorobiphenyl	581298.00	490650.00	0.01	15.6	15.0	<-

15.3

16.1

FORM VII PCB

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/25/03 Time: 1343

Lab File ID: E1E0102R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	42888.000	0.01	8.7	15.0	
(2)	24183.600	21578.000	0.01	10.8	15.0	
(3)	20737.640	25829.000	0.01	24.6	15.0	<-
Aroclor-1260	45409.320	41532.000	0.01	8.5	15.0	
(2)	46248.440	42941.000	0.01	7.2	15.0	
(3)	64584.960	62197.000	0.01	3.7	15.0	
Tetrachloro-m-xylene	741526.00	738450.00	0.01	0.4	15.0	
Decachlorobiphenyl	711418.00	727100.00	0.01	2.2	15.0	

14.7

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/25/03 Time: 2122

Lab File ID: E1E0115F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	10086.000	0.01	15.5	15.0	<-
(2)	24115.960	19392.000	0.01	19.6	15.0	<-
(3)	14202.320	11250.000	0.01	20.8	15.0	<-
Aroclor-1260	29455.240	21537.000	0.01	26.9	15.0	<-
(2)	40190.280	33133.000	0.01	17.6	15.0	<-
(3)	23147.960	16369.000	0.01	29.3	15.0	<-
Tetrachloro-m-xylene	503358.00	475400.00	0.01	5.6	15.0	
Decachlorobiphenyl	581298.00	468450.00	0.01	19.4	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/25/03 Time: 2122

Lab File ID: E1E0115R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	42161.000	0.01	10.2	15.0	
(2)	24183.600	21413.000	0.01	11.4	15.0	
(3)	20737.640	25444.000	0.01	22.7	15.0	<-
Aroclor-1260	45409.320	40141.000	0.01	11.6	15.0	
(2)	46248.440	41982.000	0.01	9.2	15.0	
(3)	64584.960	60581.000	0.01	6.2	15.0	
Tetrachloro-m-xylene	741526.00	747100.00	0.01	0.8	15.0	
Decachlorobiphenyl	711418.00	733150.00	0.01	3.0	15.0	

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/26/03 Time: 0501

Lab File ID: E1E0128F Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST 2 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	11933.240	9876.000	0.01	17.2	15.0	<-
(2)	24115.960	18450.000	0.01	23.5	15.0	<-
(3)	14202.320	10759.000	0.01	24.2	15.0	<-
Aroclor-1260	29455.240	21339.000	0.01	27.6	15.0	<-
(2)	40190.280	32261.000	0.01	19.7	15.0	<-
(3)	23147.960	15503.000	0.01	33.0	15.0	<-
Tetrachloro-m-xylene	503358.00	472350.00	0.01	6.2	15.0	
Decachlorobiphenyl	581298.00	461350.00	0.01	20.6	15.0	<-

FORM 7
PCB CONTINUING CALIBRATION CHECK

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Instrument ID: E1 Calibration Date: 03/26/03 Time: 0501

Lab File ID: E1E0128R Init. Calib. Date(s): 12/21/02 12/21/02

Init. Calib. Times: 1056 1317

GC Column: RTXCLPPEST ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF1	MIN RRF	%D	MAX %D	
Aroclor-1016	46962.320	41402.000	0.01	11.8	15.0	
(2)	24183.600	21152.000	0.01	12.5	15.0	
(3)	20737.640	25218.000	0.01	21.6	15.0	<-
Aroclor-1260	45409.320	40351.000	0.01	11.1	15.0	
(2)	46248.440	42070.000	0.01	9.0	15.0	
(3)	64584.960	60388.000	0.01	6.5	15.0	
Tetrachloro-m-xylene	741526.00	755800.00	0.01	1.9	15.0	
Decachlorobiphenyl	711418.00	742550.00	0.01	4.4	15.0	

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

BBLK1A

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix: (soil/water) WATER Lab Sample ID: MB-6197

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0104F

% Moisture: _____ decanted: (Y/N)___ Date Received: _____

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/19/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 03/25/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 2
WATER PCB SURROGATE RECOVERY

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

GC Column(1): RTXCLPPEST 2 ID: 0.53 (mm) GC Column(2): RTXCLPPEST ID: 0.53 (mm)

	CLIENT SAMPLE NO.	TCX 1 %REC #	TCX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #	OTHER (1)	OTHER (2)	TOT OUT
01	BBLK1A	78	86	71	88			0
02	B1ALCS	78	82	73	88			0
03	WOD-MW4	76	85	39	50			0
04	WFF16GW6	77	86	63	83			0
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
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28								
29								
30								

ADVISORY
QC LIMITS

S1 (TCX) = Tetrachloro-m-xylene (29-158)
S2 (DCB) = Decachlorobiphenyl (30-164)

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate diluted out

FORM 3
WATER PCB LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix Spike - Sample No.: B1ALCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Aroclor-1016	10		8.2	82	45-162
Aroclor-1260	10		8.5	85	54-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 0 outside limits
Spike Recovery: 0 out of 2 outside limits

COMMENTS: _____

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**G. GLENN**	**DATE:**	**MAY 7, 2003**
FROM:	**ETHAN G. LEE**	**COPIES:**	**DV FILE**

SUBJECT: **INORGANIC DATA VALIDATION - TAL METALS AND MISCELLANEOUS PARAMETERS**
CTO-848 NASA WALLOPS ISLAND
SAMPLE DELIVERY GROUP (SDG) – B0439

SAMPLES: 2/AQUEOUS/

WOD-MW4 WOD-WFF16-GW6

Overview

The sample set for CTO 848, NASA Wallops Island, SDG B0439, consists of two (2) aqueous environmental samples.

All samples were analyzed for total and dissolved target analyte list (TAL) metals, chloride, nitrate, nitrite, sulfate, and total organic carbon (TOC). Samples analyzed for dissolved metals are appended with the suffix "-F". The samples were collected by Tetra Tech NUS March 17, 2003 and analyzed by Mitkem Corporation under Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria. Chloride, nitrate, nitrite, and sulfate were analyzed by Severn Trent Laboratories Connecticut. Metals analyses except mercury were conducted using SW846 method 6010B. Mercury analyses were conducted using SW846 method 7470A. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA method 300. TOC analyses were conducted using EPA method 415.1.

Summary

All analytes were successfully analyzed. The findings offered in this report are based upon a general review of all available data. The data review was based on data completeness, holding times, calibration data, laboratory method/preparation blanks, interference check sample (ICS) results, matrix spike results, laboratory duplicate results, laboratory control sample (LCS) results, ICP serial dilution results, detection limits, and analyte quantitation.

All metals analyses, with the exception of mercury, were conducted using Inductively Coupled Plasma (ICP) methodologies. Mercury analyses were conducted using Cold Vapor Atomic Absorption (CVAA) methodology.

Minor Problems

- The following contaminants were detected in the laboratory method/preparation blanks at the following maximum concentrations:

Analyte	Maximum Concentration	Action Level
Aluminum[(1)]	43.768 ug/L	218.84 ug/L
Antimony	4.2 ug/L	21.0 ug/L
Arsenic	3.9 ug/L	19.5 ug/L
Barium[(1)]	4.984 ug/L	24.92 ug/L
Beryllium	1.4 ug/L	7.0 ug/L
Cadmium[(1)]	1.945 ug/L	9.725 ug/L
Chromium	1.1 ug/L	5.5 ug/L
Cobalt	2.0 ug/L	10.0 ug/L
Copper[(1)]	21.022 ug/L	105.11 ug/L
Magnesium[(1)]	158.505 ug/L	792.525 ug/L
Manganese[(1)]	2.657 ug/L	13.285 ug/L
Nickel[(1)]	2.824 ug/L	14.12 ug/L
Potassium	89.5 ug/L	447.5 ug/L
Vanadium	1.6 ug/L	8.0 ug/L
Zinc[(1)]	39.319 ug/L	196.595 ug/L
Sulfate	0.327 mg/L	1.635 mg/L

[(1)] Maximum concentration present in aqueous preparation blank.

An action level of 5X the maximum concentration was used to evaluate the sample data for blank contamination. Sample aliquot and dilution factors, if applicable, were taken into consideration when evaluating for blank contamination. Positive results less than the action level for aluminum, arsenic, beryllium, chromium, cobalt, copper, manganese, nickel, vanadium, and zinc were qualified (B) as a result of blank contamination. No validation action was required for the remaining analytes because the results were either greater than the action level or they were nondetects.

Notes

The result in the database for aluminum in sample WOD-MW4 did not match the result reported on the Form 1. The data reviewer amended the database for this sample.

Matrix spike, laboratory duplicate, and ICP serial dilution analyses were not performed for metals in this SDG.

Executive Summary

Laboratory Performance: Several analytes were present in the laboratory method/preparation blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review", April 1993 and the NFESC document entitled "Navy IRCDQM" (September 1999).

The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Ethan G. Lee
Environmental Scientist

Tetra Tech NUS
Joseph A. Samchuck
Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as reported by the Laboratory
3. Appendix C - Support Documentation

Data Qualifier Key:

U - Value is a nondetect as reported by the laboratory.

B - Positive result is considered to be an artifact of blank contamination and should not be considered present.

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

A = Lab Blank Contamination
B = Field Blank Contamination
C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
C01 = GC/MS Tuning Noncompliance
D = MS/MSD Recovery Noncompliance
E = LCS/LCSD Recovery Noncompliance
F = Lab Duplicate Imprecision
G = Field Duplicate Imprecision
H = Holding Time Exceedance
I = ICP Serial Dilution Noncompliance
J = GFAA PDS - GFAA MSA's $r < 0.995$
K = ICP Interference - includes ICS % R Noncompliance
L = Instrument Calibration Range Exceedance
M = Sample Preservation Noncompliance
N = Internal Standard Noncompliance
N01 = Internal Standard Recovery Noncompliance Dioxins
N02 = Recovery Standard Noncompliance Dioxins
N03 = Clean-up Standard Noncompliance Dioxins
O = Poor Instrument Performance (i.e., base-time drifting)
P = Uncertainty near detection limit (< 2 x IDL for inorganics and <CRQL for organics)
Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
R = Surrogates Recovery Noncompliance
S = Pesticide/PCB Resolution
T = % Breakdown Noncompliance for DDT and Endrin
U = % Difference between columns/detectors >25% for positive results determined via GC/HPLC
V = Non-linear calibrations; correlation coefficient $r < 0.995$
W = EMPC result
X = Signal to noise response drop
Y = Percent solids <30%
Z = Uncertainty at 2 sigma deviation is less than sample activity

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-MW4	nsample	WOD-WFF16-GW6
samp_date	3/17/2003	samp_date	3/17/2003
lab_id	B0439-02D	lab_id	B0439-03D
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	8220		
ANTIMONY	3.0	U	
ARSENIC	4.6	B	A
BARIUM	52.4		
BERYLLIUM	1.1	B	A
CADMIUM	0.70	U	
CALCIUM	5940		
CHROMIUM	6.1		
COBALT	3.4	B	A
COPPER	31.9	B	A
IRON	2210		
LEAD	5.1		
MAGNESIUM	1690		
MANGANESE	18.8		
MERCURY	0.14	U	
NICKEL	5.2	B	A
POTASSIUM	2980		
SELENIUM	9.0	U	
SILVER	2.9		
SODIUM	9370		
THALLIUM	3.0	U	
VANADIUM	9.9		
ZINC	62.3	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	109	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	44.7		
BERYLLIUM	0.62	B	A
CADMIUM	0.70	U	
CALCIUM	40500		
CHROMIUM	0.99	B	A
COBALT	2.3	B	A
COPPER	21.2	B	A
IRON	50.6		
LEAD	4.0	U	
MAGNESIUM	6590		
MANGANESE	17.3		
MERCURY	0.14	U	
NICKEL	3.2	B	A
POTASSIUM	1590		
SELENIUM	9.0	U	
SILVER	2.0		
SODIUM	8710		
THALLIUM	3.0	U	
VANADIUM	0.88	B	A
ZINC	42.6	B	A

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-MW4F	nsample	WOD-WFF16-GW6F
samp_date	3/17/2003	samp_date	3/17/2003
lab_id	B0439-04A	lab_id	B0439-05A
qc_type	NM	qc_type	NM
units	UG/L	units	UG/L
Pct_Solids	0	Pct_Solids	0
DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
ALUMINUM	3470		
ANTIMONY	3.0	U	
ARSENIC	3.4	B	A
BARIUM	25.2		
BERYLLIUM	0.66	B	A
CADMIUM	0.70	U	
CALCIUM	5360		
CHROMIUM	3.1	B	A
COBALT	2.6	B	A
COPPER	16.4	B	A
IRON	951		
LEAD	4.0	U	
MAGNESIUM	1440		
MANGANESE	11.0	B	A
MERCURY	0.13	U	
NICKEL	4.0	B	A
POTASSIUM	2810		
SELENIUM	9.0	U	
SILVER	2.0		
SODIUM	9520		
THALLIUM	3.0	U	
VANADIUM	4.6	B	A
ZINC	38.6	B	A

Parameter	Result	Val Qual	Qual Code
ALUMINUM	41.5	B	A
ANTIMONY	3.0	U	
ARSENIC	3.0	U	
BARIUM	42.0		
BERYLLIUM	0.50	U	
CADMIUM	0.70	U	
CALCIUM	41000		
CHROMIUM	0.69	B	A
COBALT	2.2	B	A
COPPER	12.5	B	A
IRON	26.0	U	
LEAD	4.0	U	
MAGNESIUM	6630		
MANGANESE	17.7		
MERCURY	0.13	U	
NICKEL	2.9	B	A
POTASSIUM	1640		
SELENIUM	9.0	U	
SILVER	2.0	U	
SODIUM	8560		
THALLIUM	3.0	U	
VANADIUM	0.74	B	A
ZINC	28.6	B	A

PROJ_NO: 4740

SDG: B0439 MEDIA: WATER DATA FRACTION:

nsample	WOD-MW4
samp_date	3/17/2003
lab_id	203259-001
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	5.6		
NITRATE	MG/L	0.74		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	9.1		
TOTAL ORGANIC CARBON	MG/L	6	U	

nsample	WOD-WFF16-GW6
samp_date	3/17/2003
lab_id	203259-002
qc_type	NM
Pct_Solids	0
DUP_OF:	

Parameter	units	Result	Val Qual	Qual Code
CHLORIDE	MG/L	12		
NITRATE	MG/L	12		
NITRITE	MG/L	0.10	U	
SULFATE	MG/L	38		
TOTAL ORGANIC CARBON	MG/L	7.5		

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0439__

Matrix (soil/water): WATER_ Lab Sample ID: B0439-02D_____

Level (low/med): MED Date Received: 03/18/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8220			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	4.6	B		P
7440-39-3	Barium	52.4	B		P
7440-41-7	Beryllium	1.1	B		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	5940			P
7440-47-3	Chromium	6.1	B		P
7440-48-4	Cobalt	3.4	B		P
7440-50-8	Copper	31.9			P
7439-89-6	Iron	2210			P
7439-92-1	Lead	5.1	B		P
7439-95-4	Magnesium	1690			P
7439-96-5	Manganese	18.8	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	5.2	B		P
7440-09-7	Potassium	2980	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.9	B		P
7440-23-5	Sodium	9370			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	9.9	B		P
7440-66-6	Zinc	62.3			P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture:

Color After: _____ Clarity After: Artifacts: _____

Comments:

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U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.
WFF16GW6

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

Matrix (soil/water): WATER Lab Sample ID: B0439-03D

Level (low/med): MED Date Received: 03/18/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	109	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	44.7	B		P
7440-41-7	Beryllium	0.62	B		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	40500			P
7440-47-3	Chromium	0.99	B		P
7440-48-4	Cobalt	2.3	B		P
7440-50-8	Copper	21.2	B		P
7439-89-6	Iron	50.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6590			P
7439-96-5	Manganese	17.3	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	3.2	B		P
7440-09-7	Potassium	1590	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	B		P
7440-23-5	Sodium	8710			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.88	B		P
7440-66-6	Zinc	42.6	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WOD-MW4F

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0439__

Matrix (soil/water): WATER Lab Sample ID: B0439-04A

Level (low/med): MED____ Date Received: 03/18/03____

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3470			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.4	B		P
7440-39-3	Barium	25.2	B		P
7440-41-7	Beryllium	0.66	B		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	5360			P
7440-47-3	Chromium	3.1	B		P
7440-48-4	Cobalt	2.6	B		P
7440-50-8	Copper	16.4	B		P
7439-89-6	Iron	951			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	1440			P
7439-96-5	Manganese	11.0	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	4.0	B		P
7440-09-7	Potassium	2810	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	B		P
7440-23-5	Sodium	9520			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	4.6	B		P
7440-66-6	Zinc	38.6	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: Artifacts: _____

Comments:

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U.S. EPA - CLP

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW6F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0439___

Matrix (soil/water): WATER_ Lab Sample ID: B0439-05A_____

Level (low/med): MED____ Date Received: 03/18/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.5	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	42.0	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	41000			P
7440-47-3	Chromium	0.69	B		P
7440-48-4	Cobalt	2.2	B		P
7440-50-8	Copper	12.5	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	6630			P
7439-96-5	Manganese	17.7	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	2.9	B		P
7440-09-7	Potassium	1640	B		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.0	U		P
7440-23-5	Sodium	8560			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.74	B		P
7440-66-6	Zinc	28.6	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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LABORATORY TEST RESULTS

Job Number: 203259

Date:03/26/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0439-02C
Date Sampled.....: 03/17/2003
Time Sampled.....: 13:30
Sample Matrix.....: Water

Laboratory Sample ID: 203259-1
Date Received.....: 03/19/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	5.6			0.15	1.0	1	mg/L	15385		03/19/03 1111	ddm
	Nitrate as N (NO3-N)	0.74			0.002	0.10	1	mg/L	15385		03/19/03 1111	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15385		03/19/03 1111	ddm
	Sulfate	9.1			0.012	1.0	1	mg/L	15385		03/19/03 1111	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *21-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WOD-MW4
Lab ID: B0439-02
Project: Wallops Island
Collection Date: 03/17/03 13:30

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203259

Date:03/26/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Customer Sample ID: B0439-03C
Date Sampled.....: 03/17/2003
Time Sampled.....: 15:50
Sample Matrix.....: Water

Laboratory Sample ID: 203259-2
Date Received.....: 03/19/2003
Time Received.....: 09:05

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	12			0.15	1.0	1	mg/L	15385		03/19/03 1124	ddm
	Nitrate as N (NO3-N)	12			0.002	0.10	1	mg/L	15385		03/19/03 1205	ddm
	Nitrite as N (NO2-N)	ND		U	0.003	0.10	1	mg/L	15385		03/19/03 1124	ddm
	Sulfate	38			0.012	1.0	1	mg/L	15385		03/19/03 1124	ddm

* In Description = Dry Wgt.

Mitkem Corporation

Date: *21-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW6
Lab ID: B0439-03

Project: Wallops Island
Collection Date: 03/17/03 15:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	7.5		6.0	mg/L	1	03/19/2003 11:05	6217

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

APPENDIX C

SUPPORT DOCUMENTATION

B0439

HOLDING TIME
05/05/03

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
MG/L	WOD-MW4	203259-001	NORMAL	B0439	CL	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	CL	03/17/03	/ /	03/19/03	0	0	2
%	LCSW1	LCS-6177	LCS	B0439	HG	/ /	03/18/03	03/19/03	0	1	0
UG/L	PBW1	MB-6177	M_BLANK	B0439	HG	/ /	03/18/03	03/19/03	0	1	0
UG/L	WOD-MW4	B0439-02D	NORMAL	B0439	HG	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-WFF16-GW6	B0439-03D	NORMAL	B0439	HG	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-MW4F	B0439-04A	NORMAL	B0439	HGF	03/17/03	03/18/03	03/19/03	1	1	2
UG/L	WOD-WFF16-GW6F	B0439-05A	NORMAL	B0439	HGF	03/17/03	03/18/03	03/19/03	1	1	2
%	LCSW	LCS-6171	LCS	B0439	M	/ /	03/18/03	03/18/03	0	0	0
UG/L	PBW	MB-6171	M_BLANK	B0439	M	/ /	03/18/03	03/18/03	0	0	0
UG/L	WOD-MW4	B0439-02D	NORMAL	B0439	M	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-WFF16-GW6	B0439-03D	NORMAL	B0439	M	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-MW4F	B0439-04A	NORMAL	B0439	MF	03/17/03	03/18/03	03/18/03	1	0	1
UG/L	WOD-WFF16-GW6F	B0439-05A	NORMAL	B0439	MF	03/17/03	03/18/03	03/18/03	1	0	1
MG/L	WOD-MW4	203259-001	NORMAL	B0439	NTA	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	NTA	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-MW4	203259-001	NORMAL	B0439	NTI	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	NTI	03/17/03	/ /	03/19/03	0	0	2
%	SBLK3G	MB-6282	M_BLANK	B0439	OS	/ /	03/24/03	04/03/03	0	10	0
%	SBLK3GLCS	LCS-6282	LCS	B0439	OS	/ /	03/24/03	04/03/03	0	10	0
%	WOD-MW4	B0439-02E	NORMAL	B0439	OS	03/17/03	03/24/03	04/03/03	7	10	17
UG/L	WOD-WFF16-GW6	B0439-03E	NORMAL	B0439	OS	03/17/03	03/24/03	04/03/03	7	10	17
%	TB-031703	B0439-01A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	VBLK5X	V5B0326A	M_BLANK	B0439	OV	/ /	03/26/03	03/26/03	0	0	0

Units	Nsample	Lab Id	Qc Type	Sdg	Sort	Samp Date	Extr Date	Anal Date	SAMP_DATE TO EXTR_DATE	EXTR_DATE TO ANAL_DATE	SAMP_DATE TO ANAL_DATE
%	VBLK5XLCS	V5L0326A	LCS	B0439	OV	/ /	03/26/03	03/26/03	0	0	0
%	WOD-MW4	B0439-02A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	WOD-WFF16-GW6	B0439-03A	NORMAL	B0439	OV	03/17/03	03/26/03	03/26/03	9	0	9
%	BBLK1A	MB-6197	M_BLANK	B0439	PCB	/ /	03/19/03	03/25/03	0	6	0
%	BBLK1ALCS	LCS-6197	LCS	B0439	PCB	/ /	03/19/03	03/25/03	0	6	0
%	WOD-MW4	B0439-02E	NORMAL	B0439	PCB	03/17/03	03/19/03	03/26/03	2	7	9
%	WOD-WFF16-GW6	B0439-03E	NORMAL	B0439	PCB	03/17/03	03/19/03	03/26/03	2	7	9
MG/L	WOD-MW4	203259-001	NORMAL	B0439	SO4	03/17/03	/ /	03/19/03	0	0	2
MG/L	WOD-WFF16-GW6	203259-002	NORMAL	B0439	SO4	03/17/03	/ /	03/19/03	0	0	2
%	LCS-6217	LCS-6217	LCS	B0439	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	MB-6217	MB-6217	M_BLANK	B0439	TOC	/ /	03/19/03	03/19/03	0	0	0
MG/L	WOD-MW4	B0439-02B	NORMAL	B0439	TOC	03/17/03	03/19/03	03/19/03	2	0	2
MG/L	WOD-WFF16-GW6	B0439-03B	NORMAL	B0439	TOC	03/17/03	03/19/03	03/19/03	2	0	2

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0439
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza XII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CTO 848

CLIENT P.O.#:

REQUESTED ANALYSES

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vials HCl Low Conc	TCL VOC Matrix 40 ml VOA Vials HCl	TOC 1 Liter Amber Glass	TCL SVOC 1 Liter Amber Glass	TCL PCB 500 ml Poly HNO3	TAL Metals 500 ml Poly HNO3 Chloride Sulfate Unpres Nitrate	500 ml Poly HNO3 Dissolved Metals	COMMENTS
TB-031703	3/17/03 / 0950		X	X			01	2	2							Trip Blank
WOD-MW4	3/17/03 / 1330		X	X			02	8	2	2✓	1	1	1✓	1✓		
WOD-WFF16-GW6	3/17/03 / 1550		X	X			03	8	2	2✓	1	1	1✓	1✓		
WOD-MW41F	3/17/03 / 1330		X	X			04	1							1✓	
WOD-WFF16-GW6F	3/17/03 / 1550		X	X			05	1							1✓	
	/															
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TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/17/03 / 1700	[signature]	3-18-03 / 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank water provided by the Lab
Shipped Via Federal Express
Airbill No 8286 8464 4459

COOLER TEMP: 2c

0000007

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

Analytical Data Package for Tetra Tech NUS, Inc.

Client Project: CTO – 848, NASA Wallops Flight Facility

SDG# B0439

Mitkem Project ID: B0439

April 22, 2003

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for five aqueous samples that were collected on March 17, 2003, and received at Mitkem on March 18, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of methyl tert-butyl ether.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of 4-methylphenol, 4-chloro-3-methylphenol, 2-nitroaniline and 3-nitroaniline and high recovery of n-nitrosodiphenylamine.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
04/22/03

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

SOW No.: ILM04.0

EPA Sample No.	Lab Sample ID
WFF16GW6	B0439-03D
WFF16GW6F	B0439-05A
WOD-MW4	B0439-02D
WOD-MW4F	B0439-04A

Were ICP interelement corrections applied ? Yes/No YES

Were ICP background corrections applied ? Yes/No YES

If yes - were raw data generated before application of background corrections ? Yes/No NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Name: Robin A. Comm

Date: 4/1/13 Title: Chem I

ANALYTICAL REPORT

JOB NUMBER: 203259

Prepared For:

MITKEM
175 Metro Center Boulevard
Warwick, RI 02886-1755

Project: NITRATE SULFATE

Attention: Paul Senecal

Date: 03/26/2003

Signature

3/26/03
Date

Name: Johanna L. Dubauskas

Title: Project Manager

E-Mail: jdubauskas@stl-inc.com

STL Connecticut
128 Long Hill Cross Road
Shelton, CT 06484

This Report Contains (72) Pages

SEVERN TRENT **STL**

STL Report : 203259
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Jeffrey G. Curran
Laboratory Manager

March 26, 2003
Date

U.S. EPA - CLP

3
BLANKS

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: ____ SAS No.: SDG No.: B0439

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	-17.9	B	17.0	U			43.768	B	P
Antimony	4.2	B	3.0	U	3.0	B			3.000	U	P
Arsenic	3.9	B	3.5	B	3.0	U			3.000	U	P
Barium	4.0	U	4.0	U	4.0	U			4.984	B	P
Beryllium	1.4	B	0.5	U	0.5	U			0.978	B	P
Cadmium	1.0	B	0.7	U	0.7	U			1.945	B	P
Calcium	240.0	U	240.0	U	240.0	U			240.000	U	P
Chromium	1.1	B	0.6	U	0.6	U			1.048	B	P
Cobalt	2.0	B	1.3	B	1.5	B			1.517	B	P
Copper	14.6	B	6.7	B	6.9	B			21.022	B	P
Iron	-35.0	B	-75.4	B	-59.7	B			26.000	U	P
Lead	4.0	U	4.0	U	4.0	U			4.000	U	P
Magnesium	-23.0	B	11.4	B	12.6	B			158.505	B	P
Manganese	0.8	U	0.8	U	0.8	U			2.657	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.126	U	CV
Nickel	2.2	B	1.5	B	2.1	B			2.824	B	P
Potassium	89.5	B	78.0	U	78.0	U			78.000	U	P
Selenium	9.0	U	9.0	U	9.0	U			9.000	U	P
Silver	2.0	U	2.0	U	2.0	U			2.000	U	P
Sodium	83.0	U	83.0	U	83.0	U			83.000	U	P
Thallium	3.0	U	3.0	U	3.0	U			3.000	U	P
Vanadium	1.6	B	0.8	B	0.8	B			1.114	B	P
Zinc	20.6	B	9.0	B	9.5	B			39.319	B	P
Cyanide											

Mitkem Corporation

Date: *17-Apr-03*

CLIENT: Tetra Tech NUS, Inc.
Work Order: B0439
Project: Wallops Island

ANALYTICAL QC SUMMARY REPORT

TestCode: E415.1_TOC_W

Sample ID **MB-6217**	SampType: **MBLK**	TestCode: **E415.1_TOC_W**			Prep Date: **3/19/03**		Run ID: **TOC1_030319A**	
Client ID: **MB-6217**	Batch ID: **6217**	Units: **mg/L**			Analysis Date: **3/19/03**		SeqNo: **88231**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	ND	6.0									

Sample ID **LCS-6217**	SampType: **LCS**	TestCode: **E415.1_TOC_W**			Prep Date: **3/19/03**		Run ID: **TOC1_030319A**	
Client ID: **LCS-6217**	Batch ID: **6217**	Units: **mg/L**			Analysis Date: **3/19/03**		SeqNo: **88232**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	54.9	6.0	54.1	0	101	80	120	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

000376

QUALITY CONTROL RESULTS

Job Number.: 203259 Report Date.: 03/26/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15385 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: CHL
Parameter.....: Chloride

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15385-002	W03CWRK020	mg/L	50.00000		50.00000						03/18/2003	1150
STD	15385-003	W03CWRK021	mg/L	30.00000		30.00000						03/18/2003	1203
STD	15385-004	W03CWRK022	mg/L	10.00000		10.00000						03/18/2003	1217
STD	15385-005	W03CWRK023	mg/L	4.00000		4.00000						03/18/2003	1230
STD	15385-006	W03CWRK024	mg/L	1.00000		1.00000						03/18/2003	1244
STD	15385-007	W03CWRK025	mg/L	0.50000 B		0.50000						03/18/2003	1257
ICV	15385-009	W03CWRK018	mg/L	24.71100		25.00000		99			90-110	03/18/2003	1324
ICB	15385-010		mg/L	0.14700 U								03/18/2003	1338
CCV	15385-011	W03CWRK018	mg/L	24.80700		25.00000		99		%	90-110	03/18/2003	1351
CCB	15385-012		mg/L	0.14700 U								03/18/2003	1404
MS	15385-013	W03CSPK001	mg/L	23.95100		24.00000	0.14700 U	100			75-125	03/18/2003	1418
LCS	15385-014	W03CLCS005	mg/L	10.01700		11.40000		88		%	85-115	03/18/2003	1431
MB	15385-016		mg/L	0.14700 U								03/18/2003	1458
MD	203244-1		mg/L	8.23100			8.13400	1.2			20.0	03/18/2003	1554
MS	203244-1	W03CSPK001	mg/L	32.12700		24.00000	8.13400	100			75-125	03/18/2003	1608
CCV	15385-023	W03CWRK018	mg/L	24.74600		25.00000		99		%	90-110	03/18/2003	1635
CCB	15385-024		mg/L	0.14700 U								03/18/2003	1648
CCV	15385-034	W03CWRK018	mg/L	24.98500		25.00000		100		%	90-110	03/18/2003	1903
CCB	15385-035		mg/L	0.14700 U								03/18/2003	1916
CCV	15385-036	W03CWRK018	mg/L	24.88000		25.00000		100		%	90-110	03/19/2003	0950
CCB	15385-037		mg/L	0.14700 U								03/19/2003	1004
MD	203253-2		mg/L	93.94900			94.40800	0.5			20.0	03/19/2003	1044
MS	203253-2	W03CSPK001	mg/L	218.87900		120.00000	94.40800	104			75-125	03/19/2003	1057
CCV	15385-047	W03CWRK018	mg/L	24.61000		25.00000		98		%	90-110	03/19/2003	1218
CCB	15385-048		mg/L	0.14700 U								03/19/2003	1232

Test Method.....: 300.0 Batch.....: 15385 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15385-002	W03CWRK020	mg/L	5.00000		5.00000						03/18/2003	1150
STD	15385-003	W03CWRK021	mg/L	3.00000		3.00000						03/18/2003	1203
STD	15385-004	W03CWRK022	mg/L	1.00000		1.00000						03/18/2003	1217
STD	15385-005	W03CWRK023	mg/L	0.40000		0.40000						03/18/2003	1230
STD	15385-006	W03CWRK024	mg/L	0.10000		0.10000						03/18/2003	1244
STD	15385-007	W03CWRK025	mg/L	0.05000 B		0.05000						03/18/2003	1257
ICV	15385-009	W03CWRK018	mg/L	2.49200		2.50000		100			90-110	03/18/2003	1324
ICB	15385-010		mg/L	0.00200 U								03/18/2003	1338
CCV	15385-011	W03CWRK018	mg/L	2.50200		2.50000		100		%	90-110	03/18/2003	1351
CCB	15385-012		mg/L	0.00200 U								03/18/2003	1404
MS	15385-013	W03CSPK001	mg/L	1.98400		2.00000	0.00200 U	99			75-125	03/18/2003	1418
LCS	15385-014	W03CLCS005	mg/L	10.95700		9.71000		113		%	85-115	03/18/2003	1431
LCS	15385-015	W03CLCS005	mg/L	8.89800		9.71000		92		%	85-115	03/18/2003	1445
MB	15385-016		mg/L	0.00200 U								03/18/2003	1458
MD	203244-1		mg/L	0.03600 B			0.03300 B	0.0030			0.1000	03/18/2003	1554
MS	203244-1	W03CSPK001	mg/L	1.96200		2.00000	0.03300 B	96			75-125	03/18/2003	1608
CCV	15385-023	W03CWRK018	mg/L	2.51800		2.50000		101		%	90-110	03/18/2003	1635
CCB	15385-024		mg/L	0.00200 U								03/18/2003	1648
MD	203253-2		mg/L	1.57000			1.56400	0.4			20.0	03/18/2003	1755
MS	203253-2	W03CSPK001	mg/L	3.66200		2.00000	1.56400	105			75-125	03/18/2003	1809

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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QUALITY CONTROL RESULTS

Job Number.: 203259 Report Date.: 03/26/2003

CUSTOMER: NITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15385 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO3
Parameter.....: Nitrate as N (NO3-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
CCV	15385-034	W03CWRK018	mg/L	2.55000		2.50000		102		%	90-110	03/18/2003	1903
CCB	15385-035		mg/L	0.00200 U								03/18/2003	1916
CCV	15385-036	W03CWRK018	mg/L	2.51100		2.50000		100		%	90-110	03/19/2003	0950
CCB	15385-037		mg/L	0.00200 U								03/19/2003	1004
CCV	15385-047	W03CWRK018	mg/L	2.52700		2.50000		101		%	90-110	03/19/2003	1218
CCB	15385-048		mg/L	0.00200 U								03/19/2003	1232

Test Method.....: 300.0 Batch.....: 15385 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15385-002	W03CWRK020	mg/L	5.00000		5.00000						03/18/2003	1150
STD	15385-003	W03CWRK021	mg/L	3.00000		3.00000						03/18/2003	1203
STD	15385-004	W03CWRK022	mg/L	1.00000		1.00000						03/18/2003	1217
STD	15385-005	W03CWRK023	mg/L	0.40000		0.40000						03/18/2003	1230
STD	15385-006	W03CWRK024	mg/L	0.10000		0.10000						03/18/2003	1244
STD	15385-007	W03CWRK025	mg/L	0.05000 B		0.05000						03/18/2003	1257
ICV	15385-009	W03CWRK018	mg/L	2.42100		2.50000		97			90-110	03/18/2003	1324
ICB	15385-010		mg/L	0.00300 U								03/18/2003	1338
CCV	15385-011	W03CWRK018	mg/L	2.42300		2.50000		97		%	90-110	03/18/2003	1351
CCB	15385-012		mg/L	0.00300 U								03/18/2003	1404
MS	15385-013	W03CSPK001	mg/L	1.88200		2.00000	0.00300 U	94			75-125	03/18/2003	1418
LCS	15385-014	W03CLCS005	mg/L	5.46200		5.00000		109		%	85-115	03/18/2003	1431
LCS	15385-015	W03CLCS005	mg/L	4.91300		5.00000		98		%	85-115	03/18/2003	1445
MB	15385-016		mg/L	0.00300 U								03/18/2003	1458
MD	203244-1		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/18/2003	1554
MS	203244-1	W03CSPK001	mg/L	1.86900		2.00000	0.00300 U	93			75-125	03/18/2003	1608
CCV	15385-023	W03CWRK018	mg/L	2.38300		2.50000		95		%	90-110	03/18/2003	1635
CCB	15385-024		mg/L	0.00300 U								03/18/2003	1648
MD	203253-2		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/18/2003	1755
MS	203253-2	W03CSPK001	mg/L	1.59000		2.00000	0.00300 U	80			75-125	03/18/2003	1809
CCV	15385-034	W03CWRK018	mg/L	2.40100		2.50000		96		%	90-110	03/18/2003	1903
CCB	15385-035		mg/L	0.00300 U								03/18/2003	1916
CCV	15385-036	W03CWRK018	mg/L	2.39600		2.50000		96		%	90-110	03/19/2003	0950
CCB	15385-037		mg/L	0.00300 U								03/19/2003	1004
CCV	15385-047	W03CWRK018	mg/L	2.36300		2.50000		95		%	90-110	03/19/2003	1218
CCB	15385-048		mg/L	0.00300 U								03/19/2003	1232

Test Method.....: 300.0 Batch.....: 15385 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15385-002	W03CWRK020	mg/L	100.00000		100.00000						03/18/2003	1150
STD	15385-003	W03CWRK021	mg/L	60.00000		60.00000						03/18/2003	1203
STD	15385-004	W03CWRK022	mg/L	20.00000		20.00000						03/18/2003	1217
STD	15385-005	W03CWRK023	mg/L	8.00000		8.00000						03/18/2003	1230
STD	15385-006	W03CWRK024	mg/L	2.00000		2.00000						03/18/2003	1244

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

QUALITY CONTROL RESULTS

Job Number.: 203259

Report Date.: 03/26/2003

CUSTOMER: MITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0
Method Description.: Ion Chromatography Analysis
Parameter.....: Sulfate

Batch.....: 15385
Equipment Code....: LACHET 3

Analyst...: ddm
Test Code.: S04

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc. F	*	Limits	Date	Time
STD	15385-007	W03CWRK025	mg/L	1.00000		1.00000					03/18/2003	1257
ICV	15385-009	W03CWRK018	mg/L	50.80800		50.00000		102		90-110	03/18/2003	1324
ICB	15385-010		mg/L	0.32700 B							03/18/2003	1338
CCV	15385-011	W03CWRK018	mg/L	50.91600		50.00000		102	%	90-110	03/18/2003	1351
CCB	15385-012		mg/L	0.01200 U							03/18/2003	1404
MS	15385-013	W03CSPK001	mg/L	19.40500		20.00000	0.31100 B	95		75-125	03/18/2003	1418
LCS	15385-014	W03CLCS005	mg/L	8.40800		9.21000		91	%	85-115	03/18/2003	1431
LCS	15385-015	W03CLCS005	mg/L	8.95900		9.21000		97	%	85-115	03/18/2003	1445
MB	15385-016		mg/L	0.31100 B							03/18/2003	1458
MD	203244-1		mg/L	6.42400			6.41500	0.1		20.0	03/18/2003	1554
MS	203244-1	W03CSPK001	mg/L	26.20900		20.00000	6.41500	99		75-125	03/18/2003	1608
CCV	15385-023	W03CWRK018	mg/L	51.49300		50.00000		103	%	90-110	03/18/2003	1635
CCB	15385-024		mg/L	0.01200 U							03/18/2003	1648
MD	203253-2		mg/L	41.15900			40.58100	1.4		20.0	03/18/2003	1755
MS	203253-2	W03CSPK001	mg/L	60.11500		20.00000	40.58100	98		75-125	03/18/2003	1809
CCV	15385-034	W03CWRK018	mg/L	52.66800		50.00000		105	%	90-110	03/18/2003	1903
CCB	15385-035		mg/L	0.01200 U							03/18/2003	1916
CCV	15385-036	W03CWRK018	mg/L	51.17100		50.00000		102	%	90-110	03/19/2003	0950
CCB	15385-037		mg/L	0.31500 B							03/19/2003	1004
CCV	15385-047	W03CWRK018	mg/L	53.27700		50.00000		107	%	90-110	03/19/2003	1218
CCB	15385-048		mg/L	0.32000 B							03/19/2003	1232

* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

ICP ID Number: OPTIMA_2A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		6	0.5	P
Cadmium	226.50		6	0.7	P
Calcium	227.55		800	240.0	P
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium			5000		NR
Selenium	196.03		30	9.0	P
Silver	328.07		30	2.0	P
Sodium			1000		NR
Thallium	190.80		20	3.0	P
Vanadium	292.40		50	0.7	P
Zinc	206.20		50	7.0	P
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

ICP ID Number: OPTIMA_1A Date: 02/01/03

Flame AA ID Number:

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.21		200	17.0	P
Antimony	206.83		20	3.0	P
Arsenic	188.98		20	3.0	P
Barium	233.53		200	4.0	P
Beryllium	313.11		6	0.5	P
Cadmium	226.50		6	0.7	P
Calcium			800		NR
Chromium	267.72		20	0.6	P
Cobalt	228.62		50	0.9	P
Copper	324.75		30	4.0	P
Iron	273.96		200	26.0	P
Lead	220.35		10	4.0	P
Magnesium	279.08		500	8.0	P
Manganese	257.61		50	0.8	P
Mercury			0.2		NR
Nickel	231.60		50	0.8	P
Potassium	766.49		5000	78.0	P
Selenium			30		NR
Silver			30		NR
Sodium	589.59		1000	83.0	P
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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INSTRUMENT DETECTION LIMITS (QUARTERLY)

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0439

ICP ID Number: Date: 02/01/03

Flame AA ID Number: COMM_FIMS

Furnace AA ID Number:

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum			200		NR
Antimony			20		NR
Arsenic			20		NR
Barium			200		NR
Beryllium			6		NR
Cadmium			6		NR
Calcium			800		NR
Chromium			20		NR
Cobalt			50		NR
Copper			30		NR
Iron			200		NR
Lead			10		NR
Magnesium			500		NR
Manganese			50		NR
Mercury	253.70		0.2	0.1	CV
Nickel			50		NR
Potassium			5000		NR
Selenium			30		NR
Silver			30		NR
Sodium			1000		NR
Thallium			20		NR
Vanadium			50		NR
Zinc			50		NR
Cyanide			20		NR

Comments:

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM_ Case No.: SAS No.: SDG No.: B0439

Method: P

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/18/03		50
PBW	03/18/03		50
WFF16GW6	03/18/03		50
WFF16GW6F	03/18/03		50
WOD-MW4	03/18/03		50
WOD-MW4F	03/18/03		50

FORM XIII - IN SW846

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PREPARATION LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM__ Case No.: _____ SAS No.: _____ SDG No.: B0439

Method: CV_

EPA Sample No.	Preparation Date	Weight (gram)	Volume (mL)
LCSW	03/18/03		128
PBW	03/18/03		126
WFF16GW6	03/18/03		144
WFF16GW6F	03/18/03		130
WOD-MW4	03/18/03		136
WOD-MW4F	03/18/03		134

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ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0439

Instrument ID Number: OPTIMA_2A_____ Method: P___

Start Date: 03/18/03 End Date: 03/18/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1620		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S1	1.00	1626		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S2	1.00	1628		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
S3	1.00	1632		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1636																										
ZZZZZZ	1.00	1639																										
ICV	1.00	1654		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICB	1.00	1658		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ICSA	1.00	1702		X						X				X		X												
ICSAB	1.00	1705		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
PBW	1.00	1708		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
LCSW	1.00	1712		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WOD-MW4	1.00	1716		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF16GW6	1.00	1720		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WOD-MW4F	1.00	1724		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
WFF16GW6F	1.00	1728		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1732		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1736		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
ZZZZZZ	1.00	1741																										
ZZZZZZ	1.00	1745																										
ZZZZZZ	1.00	1749																										
ZZZZZZ	1.00	1753																										
ZZZZZZ	1.00	1757																										
ICSA	1.00	1801		X						X				X		X												
ICSAB	1.00	1804		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCV	1.00	1806		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	
CCB	1.00	1810		X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X		X	X	X	

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0439__

Instrument ID Number: OPTIMA_1A_____ Method: P__

Start Date: 03/19/03___ End Date: 03/19/03___

EPA Sample No.	D/F	Time	%R	Analytes																								
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	0943																		X							
S1	1.00	0946																		X							
S2	1.00	0948																		X							
S3	1.00	0950																		X							
ZZZZZZ	1.00	0953																									
ICV	1.00	0955																		X							
ICB	1.00	0957																		X							
ICSA	1.00	0959																									
ICSAB	1.00	1002																		X							
PBW	1.00	1004																		X							
LCSW	1.00	1006																		X							
WOD-MW4	1.00	1009																		X							
WFF16GW6	1.00	1011																		X							
WOD-MW4F	1.00	1013																		X							
WFF16GW6F	1.00	1015																		X							
ZZZZZZ	1.00	1018																									
CCV	1.00	1020																		X							
CCB	1.00	1022																		X							
ZZZZZZ	1.00	1025																									
ZZZZZZ	1.00	1027																									
ZZZZZZ	1.00	1029																									
ZZZZZZ	1.00	1032																									
ZZZZZZ	1.00	1034																									
ZZZZZZ	1.00	1036																									
ZZZZZZ	1.00	1039																									
ICSA	1.00	1041																									
ICSAB	1.00	1043																		X							
CCV	1.00	1046																		X							
CCB	1.00	1048																		X							

FORM XIV - IN SW846

U.S. EPA - CLP

14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: SDG No.: B0439__

Instrument ID Number: OPTIMA_1A_____ Method: P

Start Date: 03/19/03___ End Date: 03/19/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1051																				X				
S1	1.00	1053																				X				
S2	1.00	1055																				X				
S3	1.00	1057																				X				
ZZZZZZ	1.00	1100																								
ICV	1.00	1102																				X				
ICB	1.00	1104																				X				
ICSA	1.00	1107																								
ICSAB	1.00	1109																				X				
PBW	1.00	1111																				X				
LCSW	1.00	1114																				X				
WOD-MW4	1.00	1116																				X				
WFF16GW6	1.00	1118																				X				
WOD-MW4F	1.00	1120																				X				
WFF16GW6F	1.00	1123																				X				
ZZZZZZ	1.00	1125																								
CCV	1.00	1127																				X				
CCB	1.00	1130																				X				
ZZZZZZ	1.00	1132																								
ZZZZZZ	1.00	1134																								
ZZZZZZ	1.00	1137																								
ZZZZZZ	1.00	1139																								
ZZZZZZ	1.00	1141																								
ZZZZZZ	1.00	1144																								
ZZZZZZ	1.00	1146																								
ICSA	1.00	1148																								
ICSAB	1.00	1151																				X				
CCV	1.00	1153																				X				
CCB	1.00	1155																				X				

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14
ANALYSIS RUN LOG

Lab Name: MITKEM_CORPORATION Contract: _____

Lab Code: MITKEM Case No.: SAS No.: _____ SDG No.: B0439__

Instrument ID Number: COMM_FIMS Method: CV_

Start Date: 03/19/03___ End Date: 03/19/03

EPA Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
S0	1.00	1007																X								
S0.2	1.00	1008																X								
S1	1.00	1009																X								
S2	1.00	1011																X								
S5	1.00	1012																X								
S10	1.00	1013																X								
ICV	1.00	1015																X								
ICB	1.00	1016																X								
PBW	1.00	1017																X								
LCSW	1.00	1019																X								
ZZZZZZ	1.00	1020																								
ZZZZZZ	1.00	1021																								
ZZZZZZ	1.00	1023																								
ZZZZZZ	1.00	1024																								
ZZZZZZ	1.00	1025																								
ZZZZZZ	1.00	1027																								
CCV	1.00	1028																X								
CCB	1.00	1029																X								
ZZZZZZ	1.00	1031																								
ZZZZZZ	1.00	1032																								
WOD-MW4	1.00	1033																X								
WFF16GW6	1.00	1035																X								
WOD-MW4F	1.00	1036																X								
WFF16GW6F	1.00	1037																X								
ZZZZZZ	1.00	1039																								
ZZZZZZ	1.00	1040																								
CCV	1.00	1041																X								
CCB	1.00	1042																X								

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Zn 206.200	250066.5	2.3792	mg/L	0.01774	2.3792	mg/L	0.01774	0.75%
Na 330.237	47362.9	22.305	mg/L	0.1072	22.305	mg/L	0.1072	0.48%
Cd 226.502	79539.5	0.2198	mg/L	0.00153	0.2198	mg/L	0.00153	0.70%
Ti 334.940	1116.1	0.0009	mg/L	0.00015	0.0009	mg/L	0.00015	16.75%
Ca 227.546	14230.3	22.654	mg/L	0.0018	22.654	mg/L	0.0018	0.01%

Sequence No.: 16
Sample ID: B0439-02D,6171
Analyst:
Sample Wt: Sample: WOD-MW4
Dilution:

Autosampler Location: 19
Date Collected: 3/18/2003 5:15:19 PM
Sample Prep Volume:
Data Type: Original

0.0061 mg/L x 1000 = 6.1 µg/L ✓

Mean Data: B0439-02D,6171

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	822.2	0.0029	mg/L	0.00007	0.0029	mg/L	0.00007	2.46%
Al 308.215	409095.5	8.2181	mg/L	0.03013	8.2181	mg/L	0.03013	0.37%
As 188.979	9.4	0.0046	mg/L	0.00020	0.0046	mg/L	0.00020	4.42%
Ba 233.527	4562.5	0.0524	mg/L	0.00071	0.0524	mg/L	0.00071	1.36%
Be 313.107	8812.9	0.0011	mg/L	0.00005	0.0011	mg/L	0.00005	4.46%
Co 228.616	171.4	0.0034	mg/L	0.00005	0.0034	mg/L	0.00005	1.34%
Cr 267.716	2212.9	0.0061	mg/L	0.00019	0.0061	mg/L	0.00019	3.09%
Cu 324.752	14861.7	0.0319	mg/L	0.00357	0.0319	mg/L	0.00357	11.19%
Fe 273.955	118653.0	2.2139	mg/L	0.01769	2.2139	mg/L	0.01769	0.80%
Mg 279.077	80533.3	1.6937	mg/L	0.01247	1.6937	mg/L	0.01247	0.74%
Mn 257.610	7204.2	0.0188	mg/L	0.00001	0.0188	mg/L	0.00001	0.05%
Ni 231.604	388.6	0.0052	mg/L	0.00004	0.0052	mg/L	0.00004	0.74%
Pb 220.353	98.4	0.0051	mg/L	0.00050	0.0051	mg/L	0.00050	9.85%
Sb 206.836	3.3	0.0012	mg/L	0.00108	0.0012	mg/L	0.00108	93.62%
Se 196.026	-4.2	-0.0014	mg/L	0.00151	-0.0014	mg/L	0.00151	107.37%
Tl 190.801	0.8	0.0007	mg/L	0.00198	0.0007	mg/L	0.00198	291.73%
V 292.402	3797.2	0.0099	mg/L	0.00036	0.0099	mg/L	0.00036	3.65%
Zn 206.200	6567.2	0.0623	mg/L	0.00495	0.0623	mg/L	0.00495	7.95%
Na 330.237	15945.4	7.5610	mg/L	0.10938	7.5610	mg/L	0.10938	1.45%
Cd 226.502	224.8	0.0006	mg/L	0.00009	0.0006	mg/L	0.00009	17.00%
Ti 334.940	192377.9	0.1586	mg/L	0.00587	0.1586	mg/L	0.00587	3.70%
Ca 227.546	3717.4	5.9440	mg/L	0.01728	5.9440	mg/L	0.01728	0.29%

Sequence No.: 17
Sample ID: B0439-03D,6171
Analyst:
Sample Wt:
Dilution:

Autosampler Location: 20
Date Collected: 3/18/2003 5:19:24 PM
Sample Prep Volume:
Data Type: Original

Mean Data: B0439-03D,6171

Analyte	Mean Corrected Intensity	Calib Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Ag 328.068	899.2	0.0020	mg/L	0.00023	0.0020	mg/L	0.00023	11.57%
Al 308.215	5419.1	0.1089	mg/L	0.00842	0.1089	mg/L	0.00842	7.74%
As 188.979	5.1	0.0024	mg/L	0.00031	0.0024	mg/L	0.00031	12.65%
Ba 233.527	3891.8	0.0447	mg/L	0.00056	0.0447	mg/L	0.00056	1.26%
Be 313.107	5635.6	0.0006	mg/L	0.00005	0.0006	mg/L	0.00005	7.32%
Co 228.616	109.3	0.0023	mg/L	0.00001	0.0023	mg/L	0.00001	0.23%
Cr 267.716	358.5	0.0010	mg/L	0.00031	0.0010	mg/L	0.00031	31.50%
Cu 324.752	9960.9	0.0212	mg/L	0.00123	0.0212	mg/L	0.00123	5.79%
Fe 273.955	2714.1	0.0506	mg/L	0.00222	0.0506	mg/L	0.00222	4.38%
Mg 279.077	313208.0	6.5868	mg/L	0.04942	6.5868	mg/L	0.04942	0.75%
Mn 257.610	6709.6	0.0173	mg/L	0.00004	0.0173	mg/L	0.00004	0.23%
Ni 231.604	237.6	0.0032	mg/L	0.00009	0.0032	mg/L	0.00009	2.90%
Pb 220.353	3.5	0.0002	mg/L	0.00015	0.0002	mg/L	0.00015	65.92%
Sb 206.836	5.8	0.0017	mg/L	0.00045	0.0017	mg/L	0.00045	26.96%
Se 196.026	-4.8	-0.0022	mg/L	0.00226	-0.0022	mg/L	0.00226	104.83%
Tl 190.801	-5.8	-0.0023	mg/L	0.00171	-0.0023	mg/L	0.00171	73.71%
V 292.402	334.8	0.0009	mg/L	0.00003	0.0009	mg/L	0.00003	3.45%
Zn 206.200	4522.7	0.0426	mg/L	0.00223	0.0426	mg/L	0.00223	5.24%
Na 330.237	15761.1	7.3928	mg/L	0.06405	7.3928	mg/L	0.06405	0.87%
Cd 226.502	166.4	0.0005	mg/L	0.00003	0.0005	mg/L	0.00003	6.14%

TETRA TECH NUS

PHIL-17058

TO: G. GLENN **DATE:** MAY 21, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: ORGANIC DATA REVIEW – VOCS, SVOCS, AND PCBS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0456

SAMPLES: 7/Aqueous/

WOD-WFF16-GW1	WOD-WFF16-GW17	TB-031803
WOD-WFF16-GW3	FB-031803	
WOD-WFF16-GW7	RB-031803	

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0456, consists of 4 aqueous environmental samples (designated WOD-), one field blank (designated FB-), one rinsate blank (designated RB-), and one trip blank (designated TB-). The trip blank was analyzed for target compound list (TCL) volatiles and all other samples were analyzed for TCL volatiles, semivolatiles, and polychlorinated biphenyls (PCBs). One field duplicate pair (WOD-WFF16-GW7/WOD-WFF16-GW17) was included in this SDG.

The samples were collected by Tetra Tech NUS on March 18, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Methods 8260B for volatiles, 8270C for semivolatiles, and 8082 for PCBs.

SUMMARY

All compounds, with the exception of acetone, were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until extraction and analysis, GC/MS instrument tuning, GC chromatographic performance tests, initial/continuing calibrations, laboratory and field quality control (QC) blank results, surrogate spike recoveries, Internal Standard (IS) areas, Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries, Laboratory Control Spike/Laboratory Control Spike Duplicate (LCS/LCSD) recoveries, field duplicate results, compound identification, compound quantitation, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MAJOR PROBLEMS

VOLATILE FRACTION

- The initial calibration relative response factors (RRFs) for acetone were less than the quality control (QC) limit of 0.05. Positive results are considered biased low (L) and non-detected results are rejected (UR). Data qualification for sample WOD-WFF16-GW17 was based upon a more significant issue (blank qualification).

MINOR PROBLEMS

VOLATILE FRACTION

- The following table summarizes the compounds detected as contaminants in the laboratory blanks or field QC blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Acetone*	49 ug/L	490 ug/L
Methylene Chloride*	50 ug/L	500 ug/L

* - Indicates compound was detected at a maximum level in a field QC blank.

Samples affected: The action levels apply to all aqueous environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size, percent solids, and dilution factors. Positive results for acetone and methylene chloride in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B).

- The LCS recovery for MTBE was less than the lower QC limit of 72%. The associated non-detected results for MTBE were qualified as biased low (UL).

SEMIVOLATILE FRACTION

- The LCS recovery for 2,4-dimethylphenol was less than the lower QC limit of 14%. The associated non-detected results for 2,4-dimethylphenol were qualified as biased low (UL).

NOTES

The semivolatile fraction LCS/LCSD percent recoveries exceeded the upper QC limits for isophorone, 4-chloroaniline, and N-nitrosodiphenylamine. No action was taken because there were no positive results for these compounds.

No other problems were identified during this review.

EXECUTIVE SUMMARY

Laboratory Performance: One compound had an initial calibration RRF less than 0.05 in the volatile fraction. Methylene chloride was detected in the volatile laboratory blank. One compound recovery was less than the QC limit in the LCS for the volatile fraction. One compound recovery was less than the QC limit in the LCS for the semivolatile fraction. Three compound recoveries exceeded QC limits in the LCS for the semivolatile fraction.

Other Factors Affecting Data Quality: Acetone and methylene chloride were detected at maximum concentrations in the field QC blanks.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17		
Laboratory ID:	B0456-06A			B0456-04A			B0456-02A			B0456-08A		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1	U		1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U		5	U	
Acetone	5	UR	C	5	UR	C	5	UR	C	4	B	B
Benzene	1	U		1	U		1	U		1	U	
Bromodichloromethane	1	U		1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U		1	U	
Chloromethane	1	U		1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U		1	U	
Ethylbenzene	1	U		1	U		1	U		1	U	
Isopropylbenzene	1	U		1	U		1	U		1	U	
m,p-xylene	1	U		1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	UL	E	1	UL	E	1	UL	E	1	UL	E
Methylcyclohexane	1	U		1	U		1	U		1	U	
Methylene Chloride	2	U		2	U		2	U		2	U	
o-xylene	1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17		
Laboratory ID:	B0456-06A			B0456-04A			B0456-02A			B0456-08A		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L			ug/L		
Styrene	1	U		1	U		1	U		1	U	
Tetrachloroethene	1	U		1	U		1	U		1	U	
Toluene	1	U		1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U		1	U	
Xylene (Total)	1	U		1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-0318103			RB-031803			TB-031803		
Laboratory ID:	B0456-12A			B0456-10A			B0456-01A		
Sample Date:	03/18/03			03/18/03			03/18/03		
Duplicate:									
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
VOLATILES	ug/L			ug/L			ug/L		
1,1,1-Trichloroethane	1	U		1	U		1	U	
1,1,2,2-Tetrachloroethane	1	U		1	U		1	U	
1,1,2-Trichloro-1,2,2-trifluoroethane	1	U		1	U		1	U	
1,1,2-Trichloroethane	1	U		1	U		1	U	
1,1-Dichloroethane	1	U		1	U		1	U	
1,1-Dichloroethene	1	U		1	U		1	U	
1,2,4-Trichlorobenzene	1	U		1	U		1	U	
1,2,4-Trimethylbenzene	1	U		1	U		1	U	
1,2-Dibromo-3-chloropropane	1	U		1	U		1	U	
1,2-Dibromoethane	1	U		1	U		1	U	
1,2-Dichlorobenzene	1	U		1	U		1	U	
1,2-Dichloroethane	1	U		1	U		1	U	
1,2-Dichloroethene (cis)	1	U		1	U		1	U	
1,2-Dichloroethene (trans)	1	U		1	U		1	U	
1,2-Dichloropropane	1	U		1	U		1	U	
1,3,5-Trimethylbenzene	1	U		1	U		1	U	
1,3-Dichlorobenzene	1	U		1	U		1	U	
1,4-Dichlorobenzene	1	U		1	U		1	U	
2-Butanone	5	U		5	U		5	U	
2-Hexanone	5	U		5	U		5	U	
4-Methyl-2-pentanone	5	U		5	U		5	U	
Acetone	14	L	C	13	L	C	49	L	C
Benzene	1	U		1	U		1	U	
Bromodichloromethane	1	U		1	U		1	U	
Bromoform	1	U		1	U		1	U	
Bromomethane	1	U		1	U		1	U	
Carbon Disulfide	1	U		1	U		1	U	
Carbon Tetrachloride	1	U		1	U		1	U	
Chlorobenzene	1	U		1	U		1	U	
Chloroethane	1	U		1	U		1	U	
Chloroform	1	U		1	U		1	U	
Chloromethane	1	U		1	U		1	U	
cis-1,3-Dichloropropene	1	U		1	U		1	U	
Cyclohexane	1	U		1	U		1	U	
Dibromochloromethane	1	U		1	U		1	U	
Dichlorodifluoromethane	1	U		1	U		1	U	
Ethylbenzene	1	U		1	U		1	U	
Isopropylbenzene	1	U		1	U		1	U	
m,p-xylene	1	U		1	U		1	U	
Methyl Acetate	1	U		1	U		1	U	
Methyl Tert-butyl Ether	1	UL	E	1	UL	E	1	UL	E
Methylcyclohexane	1	U		1	U		1	U	
Methylene Chloride	2			2			50		
o-xylene	1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FB-0318103**			**RB-031803**			**TB-031803**		
Laboratory ID:	**B0456-12A**			**B0456-10A**			**B0456-01A**		
Sample Date:	**03/18/03**			**03/18/03**			**03/18/03**		
Duplicate:									
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
VOLATILES	**ug/L**			**ug/L**			**ug/L**		
Styrene	1	U		1	U		1	U	
Tetrachloroethene	1	U		1	U		1	U	
Toluene	1	U		1	U		1	U	
trans-1,3-Dichloropropene	1	U		1	U		1	U	
Trichloroethene	1	U		1	U		1	U	
Trichlorofluoromethane	1	U		1	U		1	U	
Vinyl Chloride	1	U		1	U		1	U	
Xylene (Total)	1	U		1	U		1	U	

DATA SUMMARY OF VOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.
UR -- Non-detected result is considered unusable due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\OV_B0456.DBF data retrieved on: 05/19/03

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17		
Laboratory ID:	B0456-06E			B0456-04E			B0456-02E			B0456-08E		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U		5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U		20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U		5	U		5	U	
2,4-Dichlorophenol	5	U		5	U		5	U		5	U	
2,4-Dimethylphenol	5	UL	E	5	UL	E	5	UL	E	5	UL	E
2,4-Dinitrophenol	20	U		20	U		20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U		5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U		5	U		5	U	
2-Chloronaphthalene	5	U		5	U		5	U		5	U	
2-Chlorophenol	5	U		5	U		5	U		5	U	
2-Methylnaphthalene	5	U		5	U		5	U		5	U	
2-Methylphenol	5	U		5	U		5	U		5	U	
2-Nitroaniline	20	U		20	U		20	U		20	U	
2-Nitrophenol	5	U		5	U		5	U		5	U	
3,3-Dichlorobenzidine	5	U		5	U		5	U		5	U	
3-Nitroaniline	20	U		20	U		20	U		20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U		20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U		5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U		5	U		5	U	
4-Chloroaniline	5	U		5	U		5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U		5	U		5	U	
4-Methylphenol	5	U		5	U		5	U		5	U	
4-Nitroaniline	20	U		20	U		20	U		20	U	
4-Nitrophenol	20	U		20	U		20	U		20	U	
Acenaphthene	5	U		5	U		5	U		5	U	
Acenaphthylene	5	U		5	U		5	U		5	U	
Anthracene	5	U		5	U		5	U		5	U	
Benz(a)anthracene	5	U		5	U		5	U		5	U	
Benzo(a)pyrene	5	U		5	U		5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U		5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U		5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U		5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U		5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U		5	U		5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U		5	U		18		
Butylbenzylphthalate	5	U		5	U		5	U		5	U	
Chrysene	5	U		5	U		5	U		5	U	
Di-n-butylphthalate	5	U		5	U		5	U		5	U	
Di-n-octylphthalate	5	U		5	U		5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U		5	U		5	U	
Dibenzofuran	5	U		5	U		5	U		5	U	
Diethylphthalate	5	U		5	U		5	U		5	U	
Dimethylphthalate	5	U		5	U		5	U		5	U	
Fluoranthene	5	U		5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17		
Laboratory ID:	B0456-06E			B0456-04E			B0456-02E			B0456-08E		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L			ug/L			ug/L		
Fluorene	5	U		5	U		5	U		5	U	
Hexachlorobenzene	5	U		5	U		5	U		5	U	
Hexachlorobutadiene	5	U		5	U		5	U		5	U	
Hexachlorocyclopentadiene	5	U		5	U		5	U		5	U	
Hexachloroethane	5	U		5	U		5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U		5	U		5	U	
Isophorone	5	U		5	U		5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U		5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U		5	U		5	U	
Naphthalene	5	U		5	U		5	U		5	U	
Nitrobenzene	5	U		5	U		5	U		5	U	
Pentachlorophenol	20	U		20	U		20	U		20	U	
Phenanthrene	5	U		5	U		5	U		5	U	
Phenol	5	U		5	U		5	U		5	U	
Pyrene	5	U		5	U		5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FB-0318103			RB-031803		
Laboratory ID:	B0456-12E			B0456-10E		
Sample Date:	03/18/03			03/18/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
SEMIVOLATILES	ug/L			ug/L		
2,2-Oxybis(1-chloropropane)	5	U		5	U	
2,4,5-Trichlorophenol	20	U		20	U	
2,4,6-Trichlorophenol	5	U		5	U	
2,4-Dichlorophenol	5	U		5	U	
2,4-Dimethylphenol	5	UL	E	5	UL	E
2,4-Dinitrophenol	20	U		20	U	
2,4-Dinitrotoluene	5	U		5	U	
2,6-Dinitrotoluene	5	U		5	U	
2-Chloronaphthalene	5	U		5	U	
2-Chlorophenol	5	U		5	U	
2-Methylnaphthalene	5	U		5	U	
2-Methylphenol	5	U		5	U	
2-Nitroaniline	20	U		20	U	
2-Nitrophenol	5	U		5	U	
3,3-Dichlorobenzidine	5	U		5	U	
3-Nitroaniline	20	U		20	U	
4,6-Dinitro-2-methylphenol	20	U		20	U	
4-Bromophenyl Phenyl Ether	5	U		5	U	
4-Chloro-3-methylphenol	5	U		5	U	
4-Chloroaniline	5	U		5	U	
4-Chlorophenyl Phenyl Ether	5	U		5	U	
4-Methylphenol	5	U		5	U	
4-Nitroaniline	20	U		20	U	
4-Nitrophenol	20	U		20	U	
Acenaphthene	5	U		5	U	
Acenaphthylene	5	U		5	U	
Anthracene	5	U		5	U	
Benz(a)anthracene	5	U		5	U	
Benzo(a)pyrene	5	U		5	U	
Benzo(b)fluoranthene	5	U		5	U	
Benzo(g,h,i)perylene	5	U		5	U	
Benzo(k)fluoranthene	5	U		5	U	
Bis(2-chloroethoxy)methane	5	U		5	U	
Bis(2-chloroethyl)ether	5	U		5	U	
Bis(2-ethylhexyl)phthalate	5	U		5	U	
Butylbenzylphthalate	5	U		5	U	
Chrysene	5	U		5	U	
Di-n-butylphthalate	5	U		5	U	
Di-n-octylphthalate	5	U		5	U	
Dibenz(a,h)anthracene	5	U		5	U	
Dibenzofuran	5	U		5	U	
Diethylphthalate	5	U		5	U	
Dimethylphthalate	5	U		5	U	
Fluoranthene	5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FB-0318103**			**RB-031803**		
Laboratory ID:	**B0456-12E**			**B0456-10E**		
Sample Date:	**03/18/03**			**03/18/03**		
Duplicate:						
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
SEMIVOLATILES	**ug/L**			**ug/L**		
Fluorene	5	U		5	U	
Hexachlorobenzene	5	U		5	U	
Hexachlorobutadiene	5	U		5	U	
Hexachlorocyclopentadiene	5	U		5	U	
Hexachloroethane	5	U		5	U	
Indeno(1,2,3-cd)pyrene	5	U		5	U	
Isophorone	5	U		5	U	
N-Nitroso-di-n-propylamine	5	U		5	U	
N-Nitrosodiphenylamine (1)	5	U		5	U	
Naphthalene	5	U		5	U	
Nitrobenzene	5	U		5	U	
Pentachlorophenol	20	U		20	U	
Phenanthrene	5	U		5	U	
Phenol	5	U		5	U	
Pyrene	5	U		5	U	

DATA SUMMARY OF SEMIVOLATILE ORGANIC COMPOUND RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\OS_B0456.DBF data retrieved on: 05/20/03

DATA SUMMARY OF PCB RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17			FB-0318103			RB-031803		
Laboratory ID:	B0456-06E			B0456-04E			B0456-02E			B0456-08E			B0456-12E			B0456-10E		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
PCBS	ug/L			ug/L			ug/L			ug/L			ug/L			ug/L		
Aroclor-1016	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1221	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1232	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1242	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1248	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1254	1	U		1	U		1	U		1	U		1	U		1	U	
Aroclor-1260	1	U		1	U		1	U		1	U		1	U		1	U	
Data Qualifiers:																		
U -- Value is a non-detected result as reported by the laboratory.																		
Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\PCB_B0456.DBF data retrieved on: 05/20/03																		

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5152

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5152

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5152

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5153

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5153

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5153

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5151

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5151

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5151

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5150

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	5	U
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	U
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5150

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5150

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	91-57-6	NAPHTHALENE, 2-METHYL-	16.33	5	NJ
2.					
3.					
4.					
5.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-0318103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5155

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	14	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-0318103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5155

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-0318103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5155

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5154

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	13	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	2	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5154

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5154

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
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1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5162

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1	U
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
75-69-4	Trichlorofluoromethane	1	U
75-35-4	1,1-Dichloroethene	1	U
67-64-1	Acetone	49	
75-15-0	Carbon Disulfide	1	U
75-09-2	Methylene Chloride	50	B
156-60-5	trans-1,2-Dichloroethene	1	U
1634-04-4	Methyl tert-butyl ether	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	5	U
156-59-2	cis-1,2-Dichloroethene	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-10-1	4-Methyl-2-pentanone	5	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
127-18-4	Tetrachloroethene	1	U
591-78-6	2-Hexanone	5	U
124-48-1	Dibromochloromethane	1	U
106-93-4	1,2-Dibromoethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5162

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
----------	m,p-Xylene	1	U
95-47-6	o-Xylene	1	U
1330-20-7	Xylene (Total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
98-82-8	Isopropylbenzene	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U
108-67-8	1,3,5-Trimethylbenzene	1	U
95-63-6	1,2,4-Trimethylbenzene	1	U
541-73-1	1,3-Dichlorobenzene	1	U
106-46-7	1,4-Dichlorobenzene	1	U
95-50-1	1,2-Dichlorobenzene	1	U
96-12-8	1,2-Dibromo-3-chloropropane	1	U
120-82-1	1,2,4-Trichlorobenzene	1	U
76-13-1	1,1,2-Trichlo-1,2,2-trifluor	1	U
79-20-9	Methyl Acetate	1	U
110-81-7	Cyclohexane	1	U
108-87-2	Methylcyclohexane	1	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-01A

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: V5E5162

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: not dec. _____ Date Analyzed: 03/26/03

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3252

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3252

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3252

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.68	4	J
2.					
3.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3253

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3253

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	18	
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3253

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	5.11	5	J
2.	65-85-0	BENZOIC ACID	10.94	5	NJ
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
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12.					
13.					
14.					
15.					
16.					
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18.					
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27.					
28.					
29.					
30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3251

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3251

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3251

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3250

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3250

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3250

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/18/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN	13.68	8	J
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
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30.					

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3532

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3532

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3532

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3531

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	5	U
111-44-4	bis(2-Chloroethyl)Ether	5	U
95-57-8	2-Chlorophenol	5	U
95-48-7	2-Methylphenol	5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	5	U
106-44-5	4-Methylphenol	5	U
621-64-7	N-Nitroso-di-n-propylamine	5	U
67-72-1	Hexachloroethane	5	U
98-95-3	Nitrobenzene	5	U
78-59-1	Isophorone	5	U
88-75-5	2-Nitrophenol	5	U
105-67-9	2,4-Dimethylphenol	5	U
120-83-2	2,4-Dichlorophenol	5	U
91-20-3	Naphthalene	5	U
106-47-8	4-Chloroaniline	5	U
111-91-1	bis(2-Chloroethoxy)methane	5	U
87-68-3	Hexachlorobutadiene	5	U
59-50-7	4-Chloro-3-Methylphenol	5	U
91-57-6	2-Methylnaphthalene	5	U
77-47-4	Hexachlorocyclopentadiene	5	U
88-06-2	2,4,6-Trichlorophenol	5	U
95-95-4	2,4,5-Trichlorophenol	20	U
91-58-7	2-Chloronaphthalene	5	U
88-74-4	2-Nitroaniline	20	U
131-11-3	Dimethylphthalate	5	U
208-96-8	Acenaphthylene	5	U
606-20-2	2,6-Dinitrotoluene	5	U
99-09-2	3-Nitroaniline	20	U
83-32-9	Acenaphthene	5	U
51-28-5	2,4-Dinitrophenol	20	U
100-02-7	4-Nitrophenol	20	U
132-64-9	Dibenzofuran	5	U
121-14-2	2,4-Dinitrotoluene	5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3531

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	5	U
7005-72-3	4-Chlorophenyl-phenylether	5	U
86-73-7	Fluorene	5	U
100-01-6	4-Nitroaniline	20	U
534-52-1	4,6-Dinitro-2-methylphenol	20	U
86-30-6	N-Nitrosodiphenylamine (1)	5	U
101-55-3	4-Bromophenyl-phenylether	5	U
118-74-1	Hexachlorobenzene	5	U
87-86-5	Pentachlorophenol	20	U
85-01-8	Phenanthrene	5	U
120-12-7	Anthracene	5	U
84-74-2	Di-n-butylphthalate	5	U
206-44-0	Fluoranthene	5	U
129-00-0	Pyrene	5	U
85-68-7	Butylbenzylphthalate	5	U
91-94-1	3,3'-Dichlorobenzidine	5	U
56-55-3	Benzo(a)anthracene	5	U
218-01-9	Chrysene	5	U
117-81-7	bis(2-Ethylhexyl)phthalate	5	U
117-84-0	Di-n-octylphthalate	5	U
205-99-2	Benzo(b)fluoranthene	5	U
207-08-9	Benzo(k)fluoranthene	5	U
50-32-8	Benzo(a)pyrene	5	U
193-39-5	Indeno(1,2,3-cd)pyrene	5	U
53-70-3	Dibenzo(a,h)anthracene	5	U
191-24-2	Benzo(g,h,i)perylene	5	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10E

Sample wt/vol: 1000 (g/mL) ML Lab File ID: S2D3531

Level: (low/med) LOW Date Received: 03/19/03

% Moisture: _____ decanted: (Y/N)___ Date Extracted:03/25/03

Concentrated Extract Volume: 1000(uL) Date Analyzed: 04/28/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW1

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-06E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0356F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW17

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-08E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0357F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW3

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-04E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0355F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

WFF16GW7

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-02E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0354F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/04/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0365F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

FB-0318103

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-12E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0365F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

FORM 1
PCB ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

RB-031803

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix: (soil/water) WATER Lab Sample ID: B0456-10E

Sample wt/vol: 1000 (g/ml) ML Lab File ID: E1E0364F

% Moisture: _____ decanted: (Y/N)___ Date Received: 03/19/03

Extraction: (SepF/Cont/Sonc) SEPF Date Extracted:03/21/03

Concentrated Extract Volume: 10000(uL) Date Analyzed: 04/05/03

Injection Volume: 1.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
12674-11-2	Aroclor-1016	1.0	U
11104-28-2	Aroclor-1221	1.0	U
11141-16-5	Aroclor-1232	1.0	U
53469-21-9	Aroclor-1242	1.0	U
12672-29-6	Aroclor-1248	1.0	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0454
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CT0848

CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA vial HCl low conc TCL VOC + MTBE; 40 ml VOA vial HCl TOC; 1 liter amber glass TCL SVOC; 1 liter amber glass TCL PCB; 500 ml poly HNO3 TAL metals; 500 ml poly unpreserved chloride sulfate nitrate; 500 ml poly HNO3 dissolved metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA vial HCl low conc TCL VOC + MTBE	40 ml VOA vial HCl TOC	1 liter amber glass TCL SVOC	1 liter amber glass TCL PCB	500 ml poly HNO3 TAL metals	500 ml poly unpreserved chloride sulfate nitrate	500 ml poly HNO3 dissolved metals	COMMENTS
TB-031803	3/18/03 0700		X	X			-1	2	2							Trip Blank
WOD-WFF16-GW7	3/18/03 0950		X	X			-2	8	2	2	1	1	1	1		
WOD-WFF16-GW7F	3/18/03 0950		X	X			-3	1							1	
WOD-WFF16-GW3	3/18/03 1210		X	X			-4	8	2	2	1	1	1	1		
WOD-WFF16-GW3F	3/18/03 1210		X	X			-5	1							1	
WOD-WFF16-GW1	3/18/03 1440		X	X			-6	8	2	2	1	1	1	1		
WOD-WFF16-GW1F	3/18/03 1440		X	X			-7	1							1	
WOD-WFF16-GW17	3/18/03 1640		X	X			-8	8	2	2	1	1	1	1		
WOD-WFF16-GW17F	3/18/03 1640		X	X			-9	1							1	
RB-031803	3/18/03 0750		X	X			-10	8	2	2	1	1	1	1		
RB-031803F	3/18/03 0750		X	X			-11	1							1	
FB-0318103	3/18/03 1445		X	X			-12	8	2	2	1	1	1	1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/18/03 1715	[signature]	3-18-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank Water supplied by the lab
Shipped via Federal Express
Airbill NO 8286 8464 4889

COOLER TEMP: 4°C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0454
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	REQUESTED ANALYSES: 500ml poly HNO3 Dissolved metals	COMMENTS
FB-031803F	3/18/03 1445		X	X			13	1	1	
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Chandra Mayne	3/18/03 1715		3-19-03 1090		4° C
		/		/	Shipped via Federal Express Airbill NO 8286 8464 4869	
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 18, 2003, and received at Mitkem on March 19, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of methyl tert-butyl ether.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine and low recovery of 2,4-dimethylphenol in S2CLCS and high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine in S2CLCSD. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF16GW7 for mercury only. Spike recovery was within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF16GW7 for mercury only. Replicate RPD was within QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
05/12/03

FORM 3
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix Spike - Sample No.: V5XLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	50		31	62	48-135
Chloromethane	50		46	92	60-118
Vinyl Chloride	50		47	94	65-113
Bromomethane	50		52	104	73-122
Chloroethane	50		58	116	72-118
Trichlorofluoromethane	50		47	94	68-129
1,1-Dichloroethene	50		55	110	67-121
Acetone	50		47	94	38-161
Carbon Disulfide	50		52	104	53-137
Methylene Chloride	50		49	98	59-132
trans-1,2-Dichloroethen	50		51	102	71-124
Methyl tert-butyl ether	50		36	72*	75-123
1,1-Dichloroethane	50		53	106	83-116
2-Butanone	50		38	76	64-139
cis-1,2-Dichloroethene	50		51	102	83-120
Chloroform	50		52	104	89-118
1,1,1-Trichloroethane	50		54	108	81-122
Carbon Tetrachloride	50		55	110	79-125
1,2-Dichloroethane	50		51	102	83-123
Benzene	50		52	104	81-120
Trichloroethene	50		50	100	77-121
1,2-Dichloropropane	50		52	104	81-116
Bromodichloromethane	50		51	102	90-114
cis-1,3-Dichloropropene	50		50	100	78-119
4-Methyl-2-pentanone	50		40	80	57-138
Toluene	50		51	102	81-121
trans-1,3-Dichloroprope	50		50	100	85-118
1,1,2-Trichloroethane	50		48	96	44-159

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

000079

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Instrument ID: V5 Calibration Date(s): 03/23/03 03/23/03

Heated Purge: (Y/N) N Calibration Time(s): 1028 1303

GC Column: DB-624 ID: 0.25 (mm)

LAB FILE ID: RRF5 =V5E5002 RRF20 =V5E5006
RRF50 =V5E5001 RRF100=V5E5005 RRF200=V5E5004

COMPOUND		RRF5	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD
Dichlorodifluoromethane		0.296	0.242	0.255	0.246	0.256	0.259	8.2
Chloromethane	*	0.487	0.375	0.416	0.374	0.399	0.410	11.3*
Vinyl Chloride		0.449	0.346	0.362	0.357	0.365	0.376	11.1
Bromomethane		0.290	0.233	0.232	0.216	0.188	0.232	16.0
Chloroethane		0.176	0.147	0.209	0.159	0.140	0.166	16.4
Trichlorofluoromethane		0.355	0.309	0.360	0.344	0.341	0.342	5.8
1,1-Dichloroethene		0.278	0.252	0.294	0.278	0.274	0.275	5.5
Acetone		0.073	0.055	0.054	0.049	0.046	0.055	18.6
Carbon Disulfide		1.029	0.531	0.995	0.547	0.784	0.777	30.5
Methylene Chloride		0.326	0.316	0.320	0.329	0.331	0.324	2.0
trans-1,2-Dichloroethene		0.292	0.286	0.306	0.321	0.322	0.305	5.3
Methyl tert-butyl ether		0.759	0.652	0.604	0.645	0.632	0.658	9.0
1,1-Dichloroethane	*	0.484	0.463	0.494	0.506	0.513	0.492	4.0*
2-Butanone		0.140	0.118	0.103	0.113	0.106	0.116	12.5
cis-1,2-Dichloroethene		0.308	0.293	0.312	0.328	0.331	0.314	4.9
Chloroform		0.460	0.434	0.463	0.480	0.474	0.462	3.8
1,1,1-Trichloroethane		0.305	0.298	0.315	0.321	0.318	0.311	3.1
Carbon Tetrachloride		0.243	0.239	0.264	0.280	0.279	0.261	7.4
1,2-Dichloroethane		0.306	0.294	0.295	0.305	0.295	0.299	2.0
Benzene		1.079	1.026	1.063	1.118	1.110	1.079	3.5
Trichloroethene		0.276	0.261	0.278	0.294	0.300	0.282	5.5
1,2-Dichloropropane		0.284	0.276	0.283	0.297	0.289	0.286	2.8
Bromodichloromethane		0.323	0.316	0.335	0.353	0.358	0.337	5.5
cis-1,3-Dichloropropene		0.371	0.382	0.426	0.441	0.453	0.415	8.7
4-Methyl-2-pentanone		0.260	0.230	0.211	0.229	0.236	0.233	7.6
Toluene		1.134	1.074	1.127	1.170	1.168	1.135	3.5
trans-1,3-Dichloropropene		0.288	0.314	0.360	0.367	0.381	0.342	11.5
1,1,2-Trichloroethane		0.228	0.229	0.227	0.244	0.249	0.235	4.5
Tetrachloroethene		0.315	0.302	0.313	0.335	0.338	0.321	4.8
2-Hexanone		0.239	0.235	0.193	0.227	0.218	0.222	8.2
Dibromochloromethane		0.322	0.334	0.360	0.383	0.389	0.358	8.2
1,2-Dibromoethane		0.358	0.360	0.350	0.383	0.381	0.366	4.1
Chlorobenzene	*	1.088	1.027	1.027	1.080	1.072	1.059	2.8*
Ethylbenzene		0.536	0.520	0.523	0.564	0.566	0.542	4.0
m,p-Xylene		0.669	0.643	0.655	0.702	0.677	0.669	3.4
o-Xylene		0.648	0.636	0.646	0.688	0.678	0.659	3.5
Xylene (Total)		0.662	0.640	0.652	0.697	0.677	0.666	3.3

* Compounds with required minimum RRF and maximim %RSD values.
All other compounds must meet a minimim RRF of 0.010.

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix Spike - Sample No.: S2CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Phenol	25		25	100	0-127
bis(2-Chloroethyl)Ether	25		25	100	46-109
2-Chlorophenol	25		25	100	22-117
2-Methylphenol	25		20	80	40-104
2,2'-oxybis(1-Chloropro	25		26	104	10-134
4-Methylphenol	25		22	88	35-106
N-Nitroso-di-n-prop.(1)	25		30	120	44-122
Hexachloroethane	25		20	80	24-104
Nitrobenzene	25		26	104	47-112
Isophorone	25		36	144*	48-118
2-Nitrophenol	25		25	100	29-122
2,4-Dimethylphenol	25		3	12*	14-109
2,4-Dichlorophenol	25		25	100	31-122
Naphthalene	25		22	88	38-117
4-Chloroaniline	25		85	340*	0-152
bis(2-Chloroethoxy)meth	25		28	112	49-112
Hexachlorobutadiene	25		19	76	28-109
4-Chloro-3-Methylphenol	25		24	96	48-117
2-Methylnaphthalene	25		17	68	43-113
Hexachlorocyclopentadie	25		12	48	34-103
2,4,6-Trichlorophenol	25		25	100	34-127
2,4,5-Trichlorophenol	25		26	104	32-131
2-Chloronaphthalene	25		23	92	47-116
2-Nitroaniline	25		21	84	51-120
Dimethylphthalate	25		26	104	53-124
Acenaphthylene	25		24	96	50-119
2,6-Dinitrotoluene	25		27	108	52-122
3-Nitroaniline	25		19	76	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000081

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix Spike - Sample No.: S2CLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Acenaphthene	25		25	100	50-121
2,4-Dinitrophenol	25		24	96	0-144
4-Nitrophenol	25		25	100	0-160
Dibenzofuran	25		20	80	51-122
2,4-Dinitrotoluene	25		26	104	52-126
Diethylphthalate	25		27	108	53-126
4-Chlorophenyl-phenylet	25		26	104	50-124
Fluorene	25		26	104	52-125
4-Nitroaniline	25		16	64	47-117
4,6-Dinitro-2-methylphe	25		25	100	3-151
N-Nitrosodiphenylamine	25		50	200*	50-150
4-Bromophenyl-phenyleth	25		27	108	51-124
Hexachlorobenzene	25		27	108	52-124
Pentachlorophenol	25		25	100	5-125
Phenanthrene	25		27	108	52-128
Anthracene	25		27	108	52-127
Di-n-butylphthalate	25		29	116	56-132
Fluoranthene	25		27	108	53-130
Pyrene	25		26	104	53-131
Butylbenzylphthalate	25		26	104	54-128
3,3'-Dichlorobenzidine	25		14	56	41-117
Benzo(a)anthracene	25		25	100	56-124
Chrysene	25		24	96	53-123
bis(2-Ethylhexyl)phthal	25		26	104	56-127
Di-n-octylphthalate	25		28	112	59-138
Benzo(b)fluoranthene	25		28	112	58-126
Benzo(k)fluoranthene	25		29	116	60-124
Benzo(a)pyrene	25		24	96	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000082

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix Spike - Sample No.: S2CLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	25	25	100	0	40	0-127
bis(2-Chloroethyl)Ether	25	25	100	0	40	46-109
2-Chlorophenol	25	25	100	0	40	22-117
2-Methylphenol	25	20	80	0	40	40-104
2,2'-oxybis(1-Chloropro	25	26	104	0	40	10-134
4-Methylphenol	25	22	88	0	40	35-106
N-Nitroso-di-n-prop.(1)	25	28	112	7	40	44-122
Hexachloroethane	25	20	80	0	40	24-104
Nitrobenzene	25	26	104	0	40	47-112
Isophorone	25	35	140*	3	40	48-118
2-Nitrophenol	25	25	100	0	40	29-122
2,4-Dimethylphenol	25	4	16	28	40	14-109
2,4-Dichlorophenol	25	24	96	4	40	31-122
Naphthalene	25	22	88	0	40	38-117
4-Chloroaniline	25	89	356*	4	40	0-152
bis(2-Chloroethoxy)meth	25	27	108	4	40	49-112
Hexachlorobutadiene	25	19	76	0	40	28-109
4-Chloro-3-Methylphenol	25	24	96	0	40	48-117
2-Methylnaphthalene	25	17	68	0	40	43-113
Hexachlorocyclopentadie	25	12	48	0	40	34-103
2,4,6-Trichlorophenol	25	25	100	0	40	34-127
2,4,5-Trichlorophenol	25	26	104	0	40	32-131
2-Chloronaphthalene	25	22	88	4	40	47-116
2-Nitroaniline	25	20	80	5	40	51-120
Dimethylphthalate	25	26	104	0	40	53-124
Acenaphthylene	25	24	96	0	40	50-119
2,6-Dinitrotoluene	25	26	104	4	40	52-122
3-Nitroaniline	25	19	76	0	40	47-115

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000084

FORM 3
WATER SEMIVOLATILE LAB CONTROL SAMPLE

Lab Name: MITKEM CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix Spike - Sample No.: S2CLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Acenaphthene	25	24	96	4	40	50-121
2,4-Dinitrophenol	25	24	96	0	40	0-144
4-Nitrophenol	25	24	96	4	40	0-160
Dibenzofuran	25	19	76	5	40	51-122
2,4-Dinitrotoluene	25	26	104	0	40	52-126
Diethylphthalate	25	27	108	0	40	53-126
4-Chlorophenyl-phenylet	25	26	104	0	40	50-124
Fluorene	25	26	104	0	40	52-125
4-Nitroaniline	25	16	64	0	40	47-117
4,6-Dinitro-2-methylphe	25	25	100	0	40	3-151
N-Nitrosodiphenylamine	25	51	204*	2	40	50-150
4-Bromophenyl-phenyleth	25	26	104	4	40	51-124
Hexachlorobenzene	25	27	108	0	40	52-124
Pentachlorophenol	25	25	100	0	40	5-125
Phenanthrene	25	27	108	0	40	52-128
Anthracene	25	26	104	4	40	52-127
Di-n-butylphthalate	25	29	116	0	40	56-132
Fluoranthene	25	27	108	0	40	53-130
Pyrene	25	26	104	0	40	53-131
Butylbenzylphthalate	25	25	100	4	40	54-128
3,3'-Dichlorobenzidine	25	14	56	0	40	41-117
Benzo(a)anthracene	25	24	96	4	40	56-124
Chrysene	25	24	96	0	40	53-123
bis(2-Ethylhexyl)phthal	25	26	104	0	40	56-127
Di-n-octylphthalate	25	28	112	0	40	59-138
Benzo(b)fluoranthene	25	28	112	0	40	58-126
Benzo(k)fluoranthene	25	28	112	4	40	60-124
Benzo(a)pyrene	25	24	96	0	40	61-121

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

COMMENTS: _____

000085

TETRA TECH NUS

PHIL- 17159

TO: G. GLENN **DATE:** MAY 21, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: INORGANIC DATA REVIEW – TAL METALS
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0456

SAMPLES: 12/Aqueous/

WOD-WFF16-GW1	WOD-WFF16-GW7	FB-031803
WOD-WFF16-GW1F	WOD-WFF16-GW7F	FB-031803F
WOD-WFF16-GW3	WOD-WFF16-GW17	RB-031803
WOD-WFF16-GW3F	WOD-WFF16-GW17F	RB-031803F

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0456 consists of 8 aqueous environmental samples (designated WOD-), two field blanks (designated FB-), and two rinsate blanks (designated RB-). All samples were analyzed for TAL metals. Two field duplicate pairs (WOD-WFF16-GW7/WOD-WFF16-GW17 and WOD-WFF16-GW7F/WOD-WFF16-GW17F) were included in this SDG.

The samples were collected by Tetra Tech NUS on March 18, 2003 and analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island.

All analyses were conducted using EPA SW-846 Method 6010B and 7470A.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, interference check solutions, and detection limits.

MINOR PROBLEMS

- The following table summarizes the analytes detected as contaminants in the laboratory and field quality control (QC) blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Aluminum	149.3 ug/L	746 ug/L
Barium	9.9 ug/L	49.5 ug/L
Chromium, filtered*	6.7 ug/L	33.5 ug/L

Analyte	Maximum Concentration	Action Level
Chromium, unfiltered*	6.4 ug/L	32 ug/L
Cobalt	2.2 ug/L	11 ug/L
Copper	15.9 ug/L	79.6 ug/L
Iron	71.8 ug/L	359 ug/L
Magnesium	158.5 ug/L	792 ug/L
Manganese	2.2 ug/L	11 ug/L
Nickel	2.5 ug/L	12.5 ug/L
Potassium	96 ug/L	480 ug/L
Selenium	11 ug/L	55 ug/L
Silver	16.5 ug/L	81.5 ug/L
Sodium, filtered*	96.8 ug/L	484 ug/L
Thallium	3.2 ug/L	16 ug/L
Vanadium	2.3 ug/L	11.5 ug/L
Zinc, filtered*	15.9 ug/L	79.5 ug/L
Zinc, unfiltered*	14.3 ug/L	71.5 ug/L

* Indicates that analyte was detected at the maximum concentration in a field QC blank.

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. Positive results for aluminum, barium, chromium, cobalt, copper, iron, manganese, silver, sodium, vanadium, and zinc in samples at concentrations less than their associated blank action levels were qualified as false positives attributable to blank contamination, (B). No qualifications were required for magnesium, nickel, potassium, selenium, and thallium because all concentrations exceeded the associated blank action levels or were non-detected.

- Cadmium, cobalt, lead, nickel, potassium, silver, sodium, and thallium were detected in ICP analysis of the Interference Check Solution (ICS) A, which is prepared from a certified source and should not contain low level analytes other than the primary mineral interferents, aluminum, calcium, iron, and magnesium. This indicates the potential for false positive spectral interferences if there are elevated sample concentrations of the primary minerals noted above. For cobalt and silver, when the observed result was greater than the expected level of interference but the concentration was not more than 10 times the expected interference, such results were considered biased high (K). Qualification was superceded by the qualifier (B) for blank contamination in these samples.
- Antimony, arsenic, barium, manganese, and vanadium exhibited negative concentrations with absolute values greater than the IDL in ICS solution A, which indicates the potential for negative bias to an extent that depends on the sample mineral concentrations. For antimony and arsenic, when the detection limit was greater than the absolute value of the negative interference, but the detection limit was not more than 10 times the expected interference value affected non-detected results were qualified as biased low (UL). For positive vanadium results, the sample

concentrations were greater than the predicted magnitude of negative interference but the concentration was not more than 10 times the expected interference, such results were considered estimated. Qualification was superceded by the qualifier (B) for blank contamination in these samples.

NOTES

The laboratory was contacted regarding true concentrations for ICS solution A because these values were not reported on Form 4 in the data package. The laboratory stated that no detectable metals are reportedly present in the commercially-purchased ICS solution A except the primary interferent metals.

EXECUTIVE SUMMARY

Laboratory Performance: Several contaminants were detected in the laboratory blanks. Associated sample results were qualified (B) to indicate artifacts of blank contamination. Several analytes were detected in ICS solution A that should not be detected and negative readings occurred for some metals. Data were qualified as biased low (UL). ICS Form IV did not indicate whether solution A true values were non-detected versus not analyzed.

Other Factors Affecting Data Quality: Several contaminants were detected in the field QC blanks. Associated sample results were qualified (B) to indicate artifacts of blank contamination.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF INORGANIC RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW1F			WOD-WFF16-GW3			WOD-WFF16-GW3F			WOD-WFF16-GW7		
Laboratory ID:	B0456-06C			B0456-07A			B0456-04C			B0456-05A			B0456-02C		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:													WOD-WFF16-GW17		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L			ug/L		
Aluminum	17.4	B	A	17	U		117	B	A	37	B	A	510	B	A
Antimony	3	U		3	U		3	U		3	U		3	UL	K
Arsenic	3	U		3	U		3	U		3	U		3	UL	K
Barium	71.3			72.8			16.1	B	A	14.5	B	A	70.5		
Beryllium	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	
Calcium	28000			28800			1690			1720			10600		
Chromium	147			43.5			124			0.94	B	B	2.3	B	B
Cobalt	1.2	B	A	1.4	B	A	1.4	B	A	1.2	B	A	5.3	B	A
Copper	8.1	B	A	26.2	B	A	9.1	B	A	13.8	B	A	14.8	B	A
Iron	516			64.6	B	A	596			51.6	B	A	49900		
Lead	4	U		4	U		4	U		4	U		4	U	
Magnesium	4610			4620			2280			2210			11200		
Manganese	32.6			21.8			15			3.9	B	A	310		
Mercury	0.14	U		0.13	U		0.14	U		0.15	U		0.13	U	
Nickel	40.2			0.8	U		49.1			0.8	U		0.8	U	
Potassium	5180			5160			1280			1260			2640		
Selenium	9	U		9	U		9	U		9	U		9	U	
Silver	8.3	B	A	6.9	B	A	12.3	B	A	10	B	A	18.6	B	A
Sodium	6600			6700			4460			4390			29200		
Thallium	3	U		3	U		3	U		3	U		3	U	
Vanadium	2.2	B	A	1.5	B	A	2.2	B	A	1.2	B	A	5.9	B	A
Zinc	7	U		26.2	B	B	12.9	B	A	19.3	B	B	15.3	B	A

DATA SUMMARY OF INORGANIC RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW17			WOD-WFF16-GW7F			WOD-WFF16-GW17F			FB-0318103			FB-031803F		
Laboratory ID:	B0456-08C			B0456-03A			B0456-09A			B0456-12C			B0456-13A		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:	WOD-WFF16-GW7			WOD-WFF16-GW17F			WOD-WFF16-GW7F								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L			ug/L			ug/L			ug/L		
Aluminum	258	B	A	107	B	A	40.8	B	A	17	U		17	U	
Antimony	3	UL	K	3	UL	K	3	UL	K	3	U		3	U	
Arsenic	3	UL	K	3	UL	K	3	UL	K	3	U		3	U	
Barium	63.8			57.2			57.7			4	U		4	U	
Beryllium	0.5	U		0.5	U		0.5	U		0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U		0.7	U		0.7	U		0.7	U	
Calcium	10300			9580			9450			240	U		240	U	
Chromium	3.4	B	B	3.8	B	B	1.2	B	B	1.3			1.2		
Cobalt	4.8	B	A	5.8	B	A	5.5	B	A	0.9	U		0.98		
Copper	45.2	B	A	22.5	B	A	6.9	B	A	4.2			14.8		
Iron	47400			42000			40700			26	U		26	U	
Lead	4	U		4	U		4	U		4	U		4	U	
Magnesium	10900			10500			10200			10.2			49.8		
Manganese	306			314			309			0.8	U		1.9		
Mercury	0.13	U		0.13	U		0.13	U		0.15	U		0.15	U	
Nickel	0.8	U		0.8	U		0.8	U		0.8	U		0.8	U	
Potassium	2530			2410			2370			78	U		78	U	
Selenium	9	U		9	U		9	U		9	U		9	U	
Silver	7.2	B	A	15	B	A	6.5	B	A	3.2			2.6		
Sodium	30200			28400			31800			83	U		96.8		
Thallium	3	U		3	U		3	U		3	U		3	U	
Vanadium	5.2	B	A	4.7	B	A	4.3	B	A	0.7	U		0.7	U	
Zinc	36.7	B	A	23.9	B	B	9.4	B	B	7	U		15.9		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	RB-031803			RB-031803F		
Laboratory ID:	B0456-10C			B0456-11A		
Sample Date:	03/18/03			03/18/03		
Duplicate:						
	RESULT	QUAL	CODE	RESULT	QUAL	CODE
INORGANICS	ug/L			ug/L		
Aluminum	17	U		17	U	
Antimony	3	U		3	U	
Arsenic	3	U		3	U	
Barium	4	U		4	U	
Beryllium	0.5	U		0.5	U	
Cadmium	0.7	U		0.7	U	
Calcium	240	U		240	U	
Chromium	6.4			6.7		
Cobalt	0.9	U		0.9	U	
Copper	7			4.8		
Iron	56.2			54.2		
Lead	4	U		4	U	
Magnesium	19			28.8		
Manganese	1.5			1.1		
Mercury	0.13	U		0.15	U	
Nickel	0.8	U		0.8	U	
Potassium	78	U		78	U	
Selenium	9	U		9	U	
Silver	4.2			3.9		
Sodium	83	U		83	U	
Thallium	3	U		3	U	
Vanadium	0.7	U		0.7	U	
Zinc	8.1			11.8		

DATA SUMMARY OF INORGANIC RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Data Qualifiers:
B -- Positive result is considered to be an artifact of blank contamination, and should not be considered present.
U -- Value is a non-detected result as reported by the laboratory.
UL -- Non-detected result is considered biased low due to exceedance of technical quality control criteria.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\M_B0456.DBF data retrieved on: 05/20/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

U.S. EPA - CLP

1
INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-02C

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	510			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	70.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	10600			P
7440-47-3	Chromium	2.3	B		P
7440-48-4	Cobalt	5.3	B		P
7440-50-8	Copper	14.8	B		P
7439-89-6	Iron	49900			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	11200			P
7439-96-5	Manganese	310			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	2640			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	18.6	B		P
7440-23-5	Sodium	29200			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	5.9	B		P
7440-66-6	Zinc	15.3	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW7F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-03A

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	107	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	57.2	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9580			P
7440-47-3	Chromium	3.8	B		P
7440-48-4	Cobalt	5.8	B		P
7440-50-8	Copper	22.5	B		P
7439-89-6	Iron	42000			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10500			P
7439-96-5	Manganese	314			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	2410			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	15.0	B		P
7440-23-5	Sodium	28400			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	4.7	B		P
7440-66-6	Zinc	23.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-04C

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	117	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	16.1	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1690			P
7440-47-3	Chromium	124			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	9.1	B		P
7439-89-6	Iron	596			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2280			P
7439-96-5	Manganese	15.0	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	49.1	B		P
7440-09-7	Potassium	1280			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	12.3	B		P
7440-23-5	Sodium	4460			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	12.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW3F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456___

Matrix (soil/water): WATER_ Lab Sample ID: B0456-05A_____

Level (low/med): MED____ Date Received: 03/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	37.0	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	14.5	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	1720			P
7440-47-3	Chromium	0.94	B		P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	13.8	B		P
7439-89-6	Iron	51.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	2210			P
7439-96-5	Manganese	3.9	B		P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	1260			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	10.0	B		P
7440-23-5	Sodium	4390			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.2	B		P
7440-66-6	Zinc	19.3	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-06C

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.4	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	71.3	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	28000			P
7440-47-3	Chromium	147			P
7440-48-4	Cobalt	1.2	B		P
7440-50-8	Copper	8.1	B		P
7439-89-6	Iron	516			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4610			P
7439-96-5	Manganese	32.6	B		P
7439-97-6	Mercury	0.14	U		CV
7440-02-0	Nickel	40.2	B		P
7440-09-7	Potassium	5180			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	8.3	B		P
7440-23-5	Sodium	6600			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	2.2	B		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW1F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456__

Matrix (soil/water): WATER_ Lab Sample ID: B0456-07A_____

Level (low/med): MED____ Date Received: 03/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	72.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	28800			P
7440-47-3	Chromium	43.5			P
7440-48-4	Cobalt	1.4	B		P
7440-50-8	Copper	26.2	B		P
7439-89-6	Iron	64.6	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	4620			P
7439-96-5	Manganese	21.8	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	5160			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	6.9	B		P
7440-23-5	Sodium	6700			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	1.5	B		P
7440-66-6	Zinc	26.2	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456___

Matrix (soil/water): WATER_ Lab Sample ID: B0456-08C_____

Level (low/med): MED_____ Date Received: 03/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	258			P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	63.8	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	10300			P
7440-47-3	Chromium	3.4	B		P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	45.2			P
7439-89-6	Iron	47400			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10900			P
7439-96-5	Manganese	306			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	2530			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	7.2	B		P
7440-23-5	Sodium	30200			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	5.2	B		P
7440-66-6	Zinc	36.7	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

WFF16GW17F

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456___

Matrix (soil/water): WATER_ Lab Sample ID: B0456-09A_____

Level (low/med): MED____ Date Received: 03/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	40.8	B		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	57.7	B		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	9450			P
7440-47-3	Chromium	1.2	B		P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	6.9	B		P
7439-89-6	Iron	40700			P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10200			P
7439-96-5	Manganese	309			P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	2370			P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	6.5	B		P
7440-23-5	Sodium	31800			P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	4.3	B		P
7440-66-6	Zinc	9.4	B		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-10C

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	6.4	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	7.0	B		P
7439-89-6	Iron	56.2	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	19.0	B		P
7439-96-5	Manganese	1.5	B		P
7439-97-6	Mercury	0.13	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	4.2	B		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	8.1	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

RB-031803F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-11A

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	6.7	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.8	B		P
7439-89-6	Iron	54.2	B		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	28.8	B		P
7439-96-5	Manganese	1.1	B		P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.9	B		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	11.8	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-0318103

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456___

Matrix (soil/water): WATER_ Lab Sample ID: B0456-12C_____

Level (low/med): MED____ Date Received: 03/19/03____

% Solids: _____

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.3	B		P
7440-48-4	Cobalt	0.90	U		P
7440-50-8	Copper	4.2	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	10.2	B		P
7439-96-5	Manganese	0.80	U		P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	3.2	B		P
7440-23-5	Sodium	83.0	U		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	7.0	U		P
	Cyanide				NR

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

FB-031803F

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Matrix (soil/water): WATER Lab Sample ID: B0456-13A

Level (low/med): MED Date Received: 03/19/03

% Solids:

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17.0	U		P
7440-36-0	Antimony	3.0	U		P
7440-38-2	Arsenic	3.0	U		P
7440-39-3	Barium	4.0	U		P
7440-41-7	Beryllium	0.50	U		P
7440-43-9	Cadmium	0.70	U		P
7440-70-2	Calcium	240	U		P
7440-47-3	Chromium	1.2	B		P
7440-48-4	Cobalt	0.98	B		P
7440-50-8	Copper	14.8	B		P
7439-89-6	Iron	26.0	U		P
7439-92-1	Lead	4.0	U		P
7439-95-4	Magnesium	49.8	B		P
7439-96-5	Manganese	1.9	B		P
7439-97-6	Mercury	0.15	U		CV
7440-02-0	Nickel	0.80	U		P
7440-09-7	Potassium	78.0	U		P
7782-49-2	Selenium	9.0	U		P
7440-22-4	Silver	2.6	B		P
7440-23-5	Sodium	96.8	B		P
7440-28-0	Thallium	3.0	U		P
7440-62-2	Vanadium	0.70	U		P
7440-66-6	Zinc	15.9	B		P
	Cyanide				NR

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

APPENDIX C

Support Documentation

MITKEM CORPORATION

175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0454
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME: NASA WFF

CLIENT PROJECT #: CT0848

CLIENT P.O.#:

REQUESTED ANALYSES: 40 ml VOA vial HCl; TCL VOC + Low Conc MTBE; 40 ml VOA vial HCl; TOC; 1 liter Amber Glass; TCL SVOC; 1 liter Amber Glass; TCL PCB; 500 ml Poly HNO3; TAL Metals; 500 ml Poly unpreserved (includes sulfate, nitrate); 500 ml Poly HNO3 Dissolved Metals

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS												COMMENTS
TB-031803	3/18/03 0700		X	X			-1	2	2											Trip Blank
WOD-WFF16-GW7	3/18/03 0950		X	X			-2	8	2	2	1	1	1	1						
WOD-WFF16-GW7F	3/18/03 0950		X	X			-3	1							1					
WOD-WFF16-GW3	3/18/03 1210		X	X			-4	8	2	2	1	1	1	1						
WOD-WFF16-GW3F	3/18/03 1210		X	X			-5	1							1					
WOD-WFF16-GW1	3/18/03 1440		X	X			-6	8	2	2	1	1	1	1						
WOD-WFF16-GW1F	3/18/03 1440		X	X			-7	1							1					
WOD-WFF16-GW17	3/18/03 1640		X	X			-8	8	2	2	1	1	1	1						
WOD-WFF16-GW17F	3/18/03 1640		X	X			-9	1							1					
RB-031803	3/18/03 0750		X	X			-10	8	2	2	1	1	1	1						
RB-031803F	3/18/03 0750		X	X			-11	1							1					
FB-0318103	3/18/03 1445		X	X			-12	8	2	2	1	1	1	1						

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
		3/18/03 1715		3-19-03 0900
		/		/
		/		/

ADDITIONAL REMARKS: Trip Blank water supplied by the lab
Shipped via Federal Express
Airbill NO 8286 8464 4889

COOLER TEMP: 4°C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9686	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0456
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	500ml poly HNO3 Dissolved metals	REQUESTED ANALYSES	COMMENTS
FB-031803F	3/18/03 1445		X	X			13	1	1		
	/										
	/										
	/										
	/										
	/										
	/										
	/										
	/										
	/										
	/										
	/										

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	Charles Mayer	3/18/03 1715		3-19-03 1090		4°C
		/		/	Shipped via Federal Express Airbill NO 8286 8464 4869	
		/		/		

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 18, 2003, and received at Mitkem on March 19, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of methyl tert-butyl ether.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine and low recovery of 2,4-dimethylphenol in S2CLCS and high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine in S2CLCSD. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF16GW7 for mercury only. Spike recovery was within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF16GW7 for mercury only. Replicate RPD was within QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
05/12/03

3
BLANKS

Lab Name: MITKEM_CORPORATION Contract:

Lab Code: MITKEM Case No.: SAS No.: SDG No.: B0456

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	17.0	U	31.1	B	17.0	U	149.3	B	17.000	U	P
Antimony	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Arsenic	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Barium	9.9	B	4.8	B	4.0	U	4.0	U	6.528	B	P
Beryllium	0.5	U	0.5	U	0.5	U	0.5	U	0.500	U	P
Cadmium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Calcium	240.0	U	240.0	U	240.0	U	240.0	U	240.000	U	P
Chromium	0.8	B	0.6	U	0.6	U	0.6	U	0.606	B	P
Cobalt	2.2	B	1.2	B	0.9	U	0.9	U	1.245	B	P
Copper	4.7	B	4.0	U	4.0	U	4.0	U	15.928	B	P
Iron	26.0	U	26.0	U	26.0	U	71.8	B	26.000	U	P
Lead	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Magnesium	20.7	B	42.0	B	12.2	B	158.5	B	34.236	B	P
Manganese	2.2	B	1.4	B	0.8	B	0.8	U	1.634	B	P
Mercury	0.1	U	0.1	U	0.1	U			0.100	U	CV
Nickel	2.5	B	1.8	B	1.2	B	0.8	U	-6.429	B	P
Potassium	96.0	B	78.0	U	78.0	U			78.000	U	P
Selenium	9.0	U	11.0	B	9.0	U	9.0	U	9.000	U	P
Silver	16.3	B	4.4	B	2.0	U	2.0	U	7.454	B	P
Sodium	83.0	U	83.0	U	83.0	U			83.000	U	P
Thallium	3.0	U	3.2	B	3.0	U	3.0	U	3.000	U	P
Vanadium	2.3	B	1.3	B	0.9	B	0.9	B	1.625	B	P
Zinc	7.1	B	7.0	U	7.0	U	7.0	U	14.277	B	P
Cyanide											

Maximum conc. FB/RB

Al	6.7	RB 031803F	(33.5)
Na	96.8	FB - 031803F	(484)
Zn	15.9	"	(79.5)

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: MITKEM_CORPORATION_____ Contract: _____

Lab Code: MITKEM Case No.: _____ SAS No.: _____ SDG No.: B0456_

ICP ID Number: OPTIMA_1A____ ICS Source: HIGH_PURITY__

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R	
Aluminum	500000	500000	475294	491493.2	98.3	475207	488201.7	97.6	
Antimony		600	-9.3	513.3	85.6	-8.9	513.8	85.6	3
Arsenic		100	-3.5	84.9	84.9	-3.4	89.1	89.1	3
Barium		500		469.6	93.9	-9.1	453.5	90.7	4
Beryllium		500		446.2	89.2		439.6	87.9	0 5
Cadmium		1000	1.6	820.5	82.0	1.4	802.2	80.2	0 7
Calcium	500000	500000	486294	503696.1	100.7	487828	507734.7	101.5	
Chromium		500		439.6	87.9		438.8	87.8	0.6
Cobalt		500	3.5	435.4	87.1	1.8	435.2	87.0	0.9
Copper		500		485.4	97.1		484.1	96.8	4
Iron	200000	200000	169017	174198.2	87.1	168925	172909.7	86.5	
Lead		500		437.7	87.5	8.9	436.4	87.3	4
Magnesium	500000	500000	466989	481234.4	96.2	466558	477082.3	95.4	
Manganese		500	-1.8	457.1	91.4	-3.4	453.4	90.7	0.8
Mercury									
Nickel		1000	7.3	849.7	85.0	5.8	845.5	84.6	0.8
Potassium		25000	150.5	25517.7	102.1		25127.4	100.5	78
Selenium		500		457.0	91.4		443.2	88.6	9
Silver		200	15.1	222.2	111.1		195.6	97.8	2
Sodium		25000	85.9	23686.2	94.7		23801.4	95.2	83
Thallium		100	14.5	93.9	93.9	12.6	96.6	96.6	3
Vanadium		500	-3.1	445.3	89.1	-5.5	441.9	88.4	0 7
Zinc		1000		844.6	84.5		825.9	82.6	7

INORGANIC INTERFERENCE CHECK SAMPLE VALIDATION
TOTAL METALS

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW7		U	IRON	200000	-9.3	49856	-2.32	na	UL
Arsenic	3	WOD-WFF16-GW7		U	IRON	200000	-3.5	49856	-0.87	na	UL
Barium	4	WOD-WFF16-GW7	70.5		IRON	200000	-9.1	49856	-2.27	na	na
Cadmium	0.7	WOD-WFF16-GW7		U	IRON	200000	1.6	49856	0.40	na	na
Cobalt	0.9	WOD-WFF16-GW7	5.3		IRON	200000	3.5	49856	0.87	K	na
Lead	4	WOD-WFF16-GW7		U	IRON	200000	8.9	49856	2.22	na	na
Manganese	0.8	WOD-WFF16-GW7	310.4		IRON	200000	-3.4	49856	-0.85	na	na
Nickel	0.8	WOD-WFF16-GW7		U	IRON	200000	7.3	49856	1.82	na	na
Silver	2	WOD-WFF16-GW7	18.6		IRON	200000	15.1	49856	3.76	K	na
Thallium	3	WOD-WFF16-GW7		U	IRON	200000	14.5	49856	3.61	na	na
Vanadium	0.7	WOD-WFF16-GW7	5.9		IRON	200000	-5.5	49856	-1.37	L	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW7F		U	IRON	200000	-9.3	42012	-1.95	na	UL
Arsenic	3	WOD-WFF16-GW7F		U	IRON	200000	-3.5	42012	-0.74	na	UL
Barium	4	WOD-WFF16-GW7F	57.2		IRON	200000	-9.1	42012	-1.91	na	na
Cadmium	0.7	WOD-WFF16-GW7F		U	IRON	200000	1.6	42012	0.34	na	na
Cobalt	0.9	WOD-WFF16-GW7F	5.8		IRON	200000	3.5	42012	0.74	K	na
Lead	4	WOD-WFF16-GW7F		U	IRON	200000	8.9	42012	1.87	na	na
Manganese	0.8	WOD-WFF16-GW7F	313.6		IRON	200000	-3.4	42012	-0.71	na	na
Nickel	0.8	WOD-WFF16-GW7F		U	IRON	200000	7.3	42012	1.53	na	na
Silver	2	WOD-WFF16-GW7F	15		IRON	200000	15.1	42012	3.17	K	na
Thallium	3	WOD-WFF16-GW7F		U	IRON	200000	14.5	42012	3.05	na	na
Vanadium	0.7	WOD-WFF16-GW7F	4.7		IRON	200000	-5.5	42012	-1.16	L	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW17		U	IRON	200000	-9.3	47441	-2.21	na	UL
Arsenic	3	WOD-WFF16-GW17		U	IRON	200000	-3.5	47441	-0.83	na	UL
Barium	4	WOD-WFF16-GW17	63.8		IRON	200000	-9.1	47441	-2.16	na	na
Cadmium	0.7	WOD-WFF16-GW17		U	IRON	200000	1.6	47441	0.38	na	na
Cobalt	0.9	WOD-WFF16-GW17	4.8		IRON	200000	3.5	47441	0.83	K	na
Lead	4	WOD-WFF16-GW17		U	IRON	200000	8.9	47441	2.11	na	na
Manganese	0.8	WOD-WFF16-GW17	306.2		IRON	200000	-3.4	47441	-0.81	na	na
Nickel	0.8	WOD-WFF16-GW17		U	IRON	200000	7.3	47441	1.73	na	na
Silver	2	WOD-WFF16-GW17	7.2		IRON	200000	15.1	47441	3.58	K	na
Thallium	3	WOD-WFF16-GW17		U	IRON	200000	14.5	47441	3.44	na	na
Vanadium	0.7	WOD-WFF16-GW17	5.2		IRON	200000	-5.5	47441	-1.30	L	na

Affected Analyte	IDL	Sample	Reported Result	Qualifier	Interferent	Interferent level in ICS	Conc. ICS	Interferent Level	Est. Interference	Validation Action (+)	Validation Action (ND)
Antimony	3	WOD-WFF16-GW17F		U	IRON	200000	-9.3	40655	-1.89	na	UL
Arsenic	3	WOD-WFF16-GW17F		U	IRON	200000	-3.5	40655	-0.71	na	UL
Barium	4	WOD-WFF16-GW17F	57.7		IRON	200000	-9.1	40655	-1.85	na	na
Cadmium	0.7	WOD-WFF16-GW17F		U	IRON	200000	1.6	40655	0.33	na	na
Cobalt	0.9	WOD-WFF16-GW17F	5.5		IRON	200000	3.5	40655	0.71	K	na
Lead	4	WOD-WFF16-GW17F		U	IRON	200000	8.9	40655	1.81	na	na
Manganese	0.8	WOD-WFF16-GW17F	308.5		IRON	200000	-3.4	40655	-0.69	na	na
Nickel	0.8	WOD-WFF16-GW17F		U	IRON	200000	7.3	40655	1.48	na	na
Silver	2	WOD-WFF16-GW17F	6.5		IRON	200000	15.1	40655	3.07	K	na
Thallium	3	WOD-WFF16-GW17F		U	IRON	200000	14.5	40655	2.95	na	na
Vanadium	0.7	WOD-WFF16-GW17F	4.3		IRON	200000	-5.5	40655	-1.12	L	na

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	WOD-WFF16-GW7F		WOD-WFF16-GW17F				
Laboratory ID:	B0456-03A		B0456-09A				
Sample Date:	03/18/03		03/18/03				
Duplicate:	WOD-WFF16-GW17F		WOD-WFF16-GW7F				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	107	B	41	B	89.6		
Antimony	3.00	UL	3.00	UL	0.0		
Arsenic	3	UL	3	UL	0.0		
Barium	57.2		57.7		-0.9	4	1, IN
Beryllium	0.5	U	0.5	U	0.0		
Cadmium	0.7	U	0.7	U	0.0		
Calcium	9580		9450		1.4	240	1, IN
Chromium	3.8	B	1.2	B	104.0		
Cobalt	5.8	B	5.5	B	5.3		
Copper	22.5	B	6.9	B	106.1		
Iron	42000		40700		3.1	26	1, IN
Lead	4	U	4	U	0.0		
Magnesium	10500		10200		2.9	8	1, IN
Manganese	314		309		1.6	0.80	1, IN
Mercury	0.13	U	0.13	U	0.0		
Nickel	0.8	U	0.8	U	0.0		
Potassium	2410		2370		1.7	78	1, IN
Selenium	9	U	9	U	0.0		
Silver	15	B	6.5	B	79.1		
Sodium	28400		31800		-11.3	83	1, IN
Thallium	3	U	3	U	0.0		
Vanadium	4.7	B	4.3	B	8.9		
Zinc	23.9	B	9.4	B	87.1		

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.

2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.

U - the compound was not detected in the sample at or above the associated numerical value.

NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

J - The positive results should be considered estimated.

B - The result should be considered non-detected or qualitatively questionable due to blank contamination.

IN - The results are acceptable.

COMMENTS

Mn and Hg results qualified as estimated (J).

EVALUATION OF INORGANIC DUPLICATE ANALYSIS PRECISION

Precision Objectives		Compound >or=5xCRQL/MDL	Compound <5xCRQL
	Aqueous	RPD<or=30%	Difference < or =2xCRQL/MDL
	Solid	RPD<or=50%	Difference < or =4xCRQL/MDL
	Air	RPD<or=20%	Difference < or =CRQL/MDL

Sample ID:	WOD-WFF16-GW7		WOD-WFF16-GW17				
Laboratory ID:	B0456-02C		B0456-08C				
Sample Date:	03/18/03		03/18/03				
Duplicate:	WOD-WFF16-GW17		WOD-WFF16-GW7				
	RESULT	QUAL	RESULT	QUAL	RPD	CRQL/MDL	NOTES
INORGANICS	mg/Kg		mg/Kg				
Aluminum	510	B	258	B	65.6		
Antimony	3.00	UL	3.00	UL	0.0		
Arsenic	3	UL	3	UL	0.0		
Barium	70.5		63.8		10.0	4	1, IN
Beryllium	0.5	U	0.5	U	0.0		
Cadmium	0.7	U	0.7	U	0.0		
Calcium	10600		10300		2.9	240	1, IN
Chromium	2.3	B	3.4	B	-38.6		
Cobalt	5.3	B	4.8	B	9.9		
Copper	14.8	B	45.2	B	-101.3		
Iron	49900		47400		5.1	26	1, IN
Lead	4	U	4	U	0.0		
Magnesium	11200		10900		2.7		1, IN
Manganese	310		306		1.3	0.80	1, IN
Mercury	0.13	U	0.13	U	0.0		
Nickel	0.8	U	0.8	U	0.0		
Potassium	2640		2530		4.3	78	1, IN
Selenium	9	U	9	U	0.0		
Silver	18.6	B	7.2	B	88.4		
Sodium	29200		30200		-3.4	83	1, IN
Thallium	3	U	3	U	0.0		
Vanadium	5.9	B	5.2	B	12.6		
Zinc	15.3	B	36.7	B	-82.3		

NOTES

1 - When both results are > or = 5xCRQL/MDL, the acceptance limit is the relative percent difference must be < or = 30% for aqueous and air samples and must be < 50% for solid samples.

2 - When at least one of the results is < 5x CRQL/MDL, the acceptance limit is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

Q - The qualifier is entered to indicate if the anlayte was not detected or qualitatively questionable in the sample.

U - the compound was not detected in the sample at or above the associated numerical value.

NC - The RPD was not calculated because one of the results was not detected; the acceptance limit used is the difference between the results must be < or = 2xCRQL/MDL for aqueous and air samples and < or = 4xCRQL/MDL for solid samples.

J - The positive results should be considered estimated.

B - The result should be considered non-detected or qualitatively questionable due to blank contamination.

IN - The results are acceptable.

COMMENTS

Mn and Hg results qualified as estimated (J).

TETRA TECH NUS

PHIL- 17160

TO: G. GLENN **DATE:** MAY 21, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: **WET CHEMISTRY DATA REVIEW – TOC, CHLORIDE, NITRATE, NITRITE, AND SULFATE**
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG B0456

SAMPLES: **6/Aqueous/**

WOD-WFF16-GW1	WOD-WFF16-GW17
WOD-WFF16-GW3	FB-031803
WOD-WFF16-GW7	RB-031803

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG B0456 consists of 4 aqueous environmental samples (designated WOD-), one field blank (designated FB-), and one rinsate blank (designated RB-). All samples were analyzed for Total Organic Carbon (TOC), chloride, nitrate, nitrite, and sulfate. One field duplicate pair (WOD-WFF16-GW7/WOD-WFF16-GW17) was included in this SDG.

The samples were collected by Tetra Tech NUS on March 18, 2003. TOC samples were analyzed by Mitkem Corporation laboratory of Warwick, Rhode Island. Chloride, nitrate, nitrite, and sulfate were analyzed by STL Connecticut of Shelton, Connecticut.

TOC analyses were conducted using EPA Method 415.1. Chloride, nitrate, nitrite, and sulfate analyses were conducted using EPA Method 300.0.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory and field quality control (QC) blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

NOTES

The following table summarizes the analytes detected as contaminants in the laboratory blanks at the maximum concentrations indicated:

Analyte	Maximum Concentration	Action Level
Sulfate	0.315 mg/L	1.58 mg/L

Samples affected: The action levels apply to all environmental samples.

In applying the blank action levels to individual samples, adjustments were made for the sample's aliquot size and dilution factors. No qualifications were required for sulfate because all concentrations exceeded the associated blank action levels.

Field duplicate precision was within QC criteria for duplicate pair WOD-WFF16-GW7 and WOD-WFF16-GW17.

EXECUTIVE SUMMARY

Laboratory Performance: Sulfate was detected in the laboratory blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOTAL ORGANIC CABRON RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW3			WOD-WFF16-GW7			WOD-WFF16-GW17			FB-0318103			RB-031803		
Laboratory ID:	B0456-06B			B0456-04B			B0456-02B			B0456-08B			B0456-12B			B0456-10B		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:							WOD-WFF16-GW17			WOD-WFF16-GW7								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/L			mg/L			mg/L			mg/L			mg/L			mg/L		
Total Organic Carbon	6	U		6	U		17			17			6	U		6	U	

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\TOC_B0456.DBF data retrieved on: 05/21/03

DATA SUMMARY OF CHLORIDE, NITRATE, NITRITE, AND SULFATE RESULTS
SDG B0456 - AQUEOUS SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-WFF16-GW1			WOD-WFF16-GW17			WOD-WFF16-GW3			WOD-WFF16-GW7			FB-031803			RB-031803		
Laboratory ID:	203270-003			203270-004			203270-002			203270-001			203270-006			203270-005		
Sample Date:	03/18/03			03/18/03			03/18/03			03/18/03			03/18/03			03/18/03		
Duplicate:				WOD-WFF16-GW7						WOD-WFF16-GW17								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/L			mg/L			mg/L			mg/L			mg/L			mg/L		
Chloride	7.3			24			8.6			24			0.15	U		0.15	U	
Nitrate	2.5			0.38			1.5			0.41			0.079			0.079		
Nitrite	0.003	U		0.003	U		0.003	U		0.003	U		0.003	U		0.003	U	
Sulfate	21			27			4.4			28			0.34			0.32		

Data Qualifiers:
U -- Value is a non-detected result as reported by the laboratory.

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\B0456\SUB_B0456.DBF data retrieved on: 05/21/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW1
Lab ID: B0456-06

Project: Wallops Island
Collection Date: 03/18/03 14:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW3
Lab ID: B0456-04

Project: Wallops Island
Collection Date: 03/18/03 12:10

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW7
Lab ID: B0456-02

Project: Wallops Island
Collection Date: 03/18/03 9:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION			**E415.1 TOC W**				
Organic Carbon, Total	17		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: WFF16GW17
Lab ID: B0456-08

Project: Wallops Island
Collection Date: 03/18/03 16:40

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	17		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: RB-031803
Lab ID: B0456-10

Project: Wallops Island
Collection Date: 03/18/03 7:50

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

Mitkem Corporation

Date: *23-Apr-03*

Client: Tetra Tech NUS, Inc.
Client Sample ID: FB-0318103
Lab ID: B0456-12

Project: Wallops Island
Collection Date: 03/18/03 14:45

Analyses	Result	Qual	RL	Units	DF	Date Analyzed	Batch ID
TOTAL ORGANIC CARBON BY COMBUSTION				**E415.1 TOC W**			
Organic Carbon, Total	ND		6.0	mg/L	1	03/20/2003 10:10	6239

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
DF - Dilution Factor
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range
RL - Reporting Limit

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0456-02D
Date Sampled.....: 03/18/2003
Time Sampled.....: 09:50
Sample Matrix.....: Water

Laboratory Sample ID: 203270-1
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	24			0.15	1.0	1	mg/L	15380		03/20/03 1938	ddm
	Nitrate as N (NO3-N)	0.41			0.002	0.10	1	mg/L	15380		03/20/03 1938	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 1938	ddm
	Sulfate	28			0.012	1.0	1	mg/L	15380		03/20/03 1938	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Customer Sample ID: B0456-04D
Date Sampled.....: 03/18/2003
Time Sampled.....: 12:10
Sample Matrix.....: Water

Laboratory Sample ID: 203270-2
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	8.6			0.15	1.0	1	mg/L	15380		03/20/03 1951	ddm
	Nitrate as N (NO3-N)	1.5			0.002	0.10	1	mg/L	15380		03/20/03 1951	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 1951	ddm
	Sulfate	4.4			0.012	1.0	1	mg/L	15380		03/20/03 1951	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0456-06D
Date Sampled.....: 03/18/2003
Time Sampled.....: 14:40
Sample Matrix.....: Water

Laboratory Sample ID: 203270-3
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	7.3			0.15	1.0	1	mg/L	15380		03/20/03 2032	ddm
	Nitrate as N (NO3-N)	2.5			0.002	0.10	1	mg/L	15380		03/20/03 2032	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 2032	ddm
	Sulfate	21			0.012	1.0	1	mg/L	15380		03/20/03 2032	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM | PROJECT: NITRATE SULFATE | ATTN: Paul Senecal

Customer Sample ID: B0456-08D
Date Sampled.....: 03/18/2003
Time Sampled.....: 16:40
Sample Matrix.....: Water

Laboratory Sample ID: 203270-4
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	24			0.15	1.0	1	mg/L	15380		03/20/03 2045	ddm
	Nitrate as N (NO3-N)	0.38			0.002	0.10	1	mg/L	15380		03/20/03 2045	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 2045	ddm
	Sulfate	27			0.012	1.0	1	mg/L	15380		03/20/03 2045	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0456-10D
Date Sampled.....: 03/18/2003
Time Sampled.....: 07:50
Sample Matrix.....: Water

Laboratory Sample ID: 203270-5
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	ND	U		0.15	1.0	1	mg/L	15380		03/20/03 2126	ddm
	Nitrate as N (NO3-N)	0.079	B		0.002	0.10	1	mg/L	15380		03/20/03 2126	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 2126	ddm
	Sulfate	0.32	B		0.012	1.0	1	mg/L	15380		03/20/03 2126	ddm

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 203270

Date:03/26/2003

CUSTOMER: MITKEM

PROJECT: NITRATE SULFATE

ATTN: Paul Senecal

Customer Sample ID: B0456-12D
Date Sampled.....: 03/18/2003
Time Sampled.....: 14:45
Sample Matrix.....: Water

Laboratory Sample ID: 203270-6
Date Received.....: 03/20/2003
Time Received.....: 09:15

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	Q	FLAGS	MDL	RL	DILUTION	UNITS	BATCH	DT	DATE/TIME	TECH
300.0	Ion Chromatography Analysis											
	Chloride	ND	U		0.15	1.0	1	mg/L	15380		03/20/03 2139	ddm
	Nitrate as N (NO3-N)	0.079	B		0.002	0.10	1	mg/L	15380		03/20/03 2139	ddm
	Nitrite as N (NO2-N)	ND	U		0.003	0.10	1	mg/L	15380		03/20/03 2139	ddm
	Sulfate	0.34	B		0.012	1.0	1	mg/L	15380		03/20/03 2139	ddm

* In Description = Dry Wgt.

APPENDIX C

Support Documentation

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0456
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CT0848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	40 ml VOA Vial HCl TCL VOC + Low Conc MTBE	40 ml VOA Vial HCl TOC	1 Liter Amber Glass TCL SVOC	1 Liter Amber Glass TCL PCB	500 ml Poly HNO3 TAL Metals	500 ml Poly unpreserved Chloride Sulfate Nitrate	500 ml Poly HNO3 Dissolved Metals	COMMENTS
TB-031803	3/18/03 0700		X	X			-1	2	2							Trip Blank
WOD-WFF16-GW7	3/18/03 0950		X	X			-2	8	2	2	1	1	1	1		
WOD-WFF16-GW7F	3/18/03 0950		X	X			-3	1							1	
WOD-WFF16-GW3	3/18/03 1210		X	X			-4	8	2	2	1	1	1	1		
WOD-WFF16-GW3F	3/18/03 1210		X	X			-5	1							1	
WOD-WFF16-GW1	3/18/03 1440		X	X			-6	8	2	2	1	1	1	1		
WOD-WFF16-GW1F	3/18/03 1440		X	X			-7	1							1	
WOD-WFF16-GW17	3/18/03 1640		X	X			-8	8	2	2	1	1	1	1		
WOD-WFF16-GW17F	3/18/03 1640		X	X			-9	1							1	
RB-031803	3/18/03 0750		X	X			-10	8	2	2	1	1	1	1		
RB-031803F	3/18/03 0750		X	X			-11	1							1	
FB-0318103	3/18/03 1445		X	X			-12	8	2	2	1	1	1	1		

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME	ADDITIONAL REMARKS:	COOLER TEMP:
	[signature]	3/18/03 1715	[signature]	3-19-03 0900	Trip Blank Water supplied by the Lab	4°C
		/		/	Shipped via Federal Express	
		/		/	Airbill NO 8286 8464 4884	

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

MITKEM CORPORATION
175 Metro Center Boulevard
Warwick, Rhode Island 02886-1755
(401) 732-3400 • Fax (401) 732-3499
email: mitkem@mitkem.com

CHAIN-OF-CUSTODY RECORD

REPORT TO		INVOICE TO		
COMPANY: Tetra Tech NUS	PHONE: 610 491 9688	COMPANY: Tetra Tech NUS	PHONE:	LAB PROJECT #: B0456
NAME: Garth Glenn	FAX: 610 491 9645	NAME:	FAX:	
ADDRESS: 600 Clark Avenue Suite 3		ADDRESS: Foster Plaza VII 661 Andersen Drive		TURNAROUND TIME:
CITY/ST/ZIP: King of Prussia, PA 19406		CITY/ST/ZIP: Pittsburgh PA		

CLIENT PROJECT NAME:	CLIENT PROJECT #:	CLIENT P.O.#:
NASA WFF	CTO 848	

SAMPLE IDENTIFICATION	DATE/TIME SAMPLED	COMPOSITE	GRAB	WATER	SOIL	OTHER	LAB ID	# OF CONTAINERS	500ml poly HNO3 Dissolved metals	COMMENTS
FB-031803F	3/18/03 1445		X	X			13	1	1	
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									
	/									

REQUESTED ANALYSES

TSF#	RELINQUISHED BY	DATE/TIME	ACCEPTED BY	DATE/TIME
	[signature]	3/18/03 1715	[signature]	3-19-03 0900
		/		/
		/		/

ADDITIONAL REMARKS:
Shipped via Federal Express
Airbill NO 8286 8464 4869

COOLER TEMP: 4° C

WHITE: LABORATORY COPY YELLOW: REPORT COPY PINK: CLIENT'S COPY

SDG Narrative

Mitkem Corporation submits the enclosed data package in response to Tetra Tech NUS' CTO – 848, NASA Wallops Flight Facility project. Under this deliverable, analysis results are presented for thirteen aqueous samples that were collected on March 18, 2003, and received at Mitkem on March 19, 2003. Analyses were performed per specifications in the project's contract and the chain of custody forms. Following the narrative is the Mitkem Work Order for cross-referencing client sample ID with laboratory sample ID.

The analyses were performed according to EPA SW-846 protocols and reported in a CLP-format for Level 4 deliverable with the exception of TOC. The analysis results for TOC are presented in the Mitkem format with supporting raw data.

.

The following observation and/or deviations are observed for the following analyses:

1. Overall Observation:

Where needed, manual integrations were performed to improve data quality. The corrections were reviewed and associated hardcopies generated and reported as required. Manual integrations are coded to provide the data reviewer justification for such action. The codes are labeled on the ion chromatogram signal (GC/MS signal) and chromatogram for GC based analysis as follows:

- M1 peak tailing or fronting.
- M2 peak co-elution.
- M3 rising or falling baseline.
- M4 retention time shift.
- M5 miscellaneous – under this category, the justification is explained.

The enclosed report includes the originals of all data with the exception of logbook pages and certain initial calibrations. Photocopies of logbook pages are included, with the originals maintained on file at the laboratory. The originals of initial calibrations that are shared among several cases are maintained on file at the laboratory, with photocopies included in the data package.

2. Volatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample: spike recoveries were within the QC limits with the exception of low recovery of methyl tert-butyl ether.

Sample analysis: no other unusual observation was made for the analysis.

3. Semivolatile Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries were within the QC limits with the exception of high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine and low recovery of 2,4-dimethylphenol in S2CLCS and high recovery of isophorone, 4-chloroaniline and n-nitrosodiphenylamine in S2CLCSD. Replicate RPDs were within the QC limits.

Sample analysis: no other unusual observation was made for the analysis.

4. PCB Analysis:

Surrogate recovery: recoveries were within the QC limits.

Lab control sample/lab control sample duplicate: spike recoveries and replicate RPDs were within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

5. Metals Analysis:

Lab control sample: spike recoveries were within the QC limits.

Matrix spike: matrix spike was performed on sample WFF16GW7 for mercury only. Spike recovery was within QC limits.

Matrix duplicate: matrix duplicate was performed on sample WFF16GW7 for mercury only. Replicate RPD was within QC limits.

Sample analysis: no unusual observation was made for the analysis.

6. TOC Analysis:

The TOC results are included following the blue section divider after the metals section of the data report.

Lab control sample: spike recovery was within the QC limits.

Sample analysis: no unusual observation was made for the analysis.

7. Sulfate, Nitrate and Chloride Analyses:

Sulfate, nitrate and chloride analyses were performed by sub-contract laboratory STL Connecticut of Shelton, CT. The entire STL Connecticut report is enclosed following the Mitkem data package.

The pages in this report have been numbered consecutively, starting from this narrative and ending with a page saying only "Last Page of Data Report".

I certify that this data package is in compliance, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Agnes Ng
CLP Project Manager
05/12/03

SEVERN TRENT STL

STL Report : 203270
MITKEM

Case Narrative

Sample Receipt – All samples were received in good condition and at the proper temperature. Samples were received very close to hold time for nitrate and nitrite. Client contacted and authorized STL to proceed with analyses.

Classical Chemistry - Listed below are the wet chemistry analyte methods and references for the samples analyzed in this SDG. No analytical problems were encountered.

Analyte	Method	Reference
Chloride	300.0	1
Nitrate	300.0	1
Nitrite	300.0	1
Sulfate	300.0	1

References:

1. Methods of Chemical Analysis of Water and Wastes, EPA 600, 1983.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in the case narrative.

I certify that this data package is in compliance with the terms and conditions of this contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Cheryl A. Cascurra for
Jeffrey C. Curran
Laboratory Manager

March 26, 2003
Date

QUALITY CONTROL RESULTS

Job Number.: 203270 Report Date.: 03/26/2003

CUSTOMER: NITKEM PROJECT: NITRATE SULFATE ATTN: Paul Senecal

Test Method.....: 300.0 Batch.....: 15380 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: NO2
Parameter.....: Nitrite as N (NO2-N)

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15380-002	W03CWRK020	mg/L	5.00000		5.00000						03/20/2003	1616
STD	15380-003	W03CWRK021	mg/L	3.00000		3.00000						03/20/2003	1630
STD	15380-004	W03CWRK022	mg/L	1.00000		1.00000						03/20/2003	1643
STD	15380-005	W03CWRK023	mg/L	0.40000		0.40000						03/20/2003	1657
STD	15380-006	W03CWRK024	mg/L	0.10000		0.10000						03/20/2003	1710
STD	15380-007	W03CWRK025	mg/L	0.05000 B		0.05000						03/20/2003	1724
ICV	15380-009	W03CWRK018	mg/L	2.49600		2.50000		100			90-110	03/20/2003	1750
ICB	15380-010		mg/L	0.00300 U								03/20/2003	1804
CCV	15380-011	W03CWRK018	mg/L	2.53400		2.50000		101		%	90-110	03/20/2003	1817
CCB	15380-012		mg/L	0.00300 U								03/20/2003	1831
MS	15380-013	W03CSPK001	mg/L	1.99400		2.00000	0.00300 U	100			75-125	03/20/2003	1844
LCS	15380-014	W03CLCS005	mg/L	5.58000		5.00000		112		%	85-115	03/20/2003	1858
LCS	15380-015	W03CLCS005	mg/L	5.01900		5.00000		100		%	85-115	03/20/2003	1911
MB	15380-016		mg/L	0.00300 U								03/20/2003	1924
MD	203270-2		mg/L	0.00300 U			0.00300 U	0.0000			0.1000	03/20/2003	2005
MS	203270-2	W03CSPK001	mg/L	1.95300		2.00000	0.00300 U	98			75-125	03/20/2003	2018
CCV	15380-023	W03CWRK018	mg/L	2.60000		2.50000		104		%	90-110	03/20/2003	2059
CCB	15380-024		mg/L	0.00300 U								03/20/2003	2112
CCV	15380-029	W03CWRK018	mg/L	2.61000		2.50000		104		%	90-110	03/20/2003	2219
CCB	15380-030		mg/L	0.00300 U								03/20/2003	2233

Test Method.....: 300.0 Batch.....: 15380 Analyst...: ddm
Method Description.: Ion Chromatography Analysis Equipment Code....: LACHET 3 Test Code.: SO4
Parameter.....: Sulfate

QC	Lab ID	Reagent	Units	QC Result	QC Result	True Value	Orig. Value	QC Calc.	F	*	Limits	Date	Time
STD	15380-002	W03CWRK020	mg/L	100.00000		100.00000						03/20/2003	1616
STD	15380-003	W03CWRK021	mg/L	60.00000		60.00000						03/20/2003	1630
STD	15380-004	W03CWRK022	mg/L	20.00000		20.00000						03/20/2003	1643
STD	15380-005	W03CWRK023	mg/L	8.00000		8.00000						03/20/2003	1657
STD	15380-006	W03CWRK024	mg/L	2.00000		2.00000						03/20/2003	1710
STD	15380-007	W03CWRK025	mg/L	1.00000		1.00000						03/20/2003	1724
ICV	15380-009	W03CWRK018	mg/L	51.26300		50.00000		103			90-110	03/20/2003	1750
ICB	15380-010		mg/L	0.30600 B								03/20/2003	1804
CCV	15380-011	W03CWRK018	mg/L	50.86700		50.00000		102		%	90-110	03/20/2003	1817
CCB	15380-012		mg/L	0.31400 B								03/20/2003	1831
MS	15380-013	W03CSPK001	mg/L	19.48000		20.00000	0.31500 B	96			75-125	03/20/2003	1844
LCS	15380-014	W03CLCS005	mg/L	8.42900		9.21000		92		%	85-115	03/20/2003	1858
LCS	15380-015	W03CLCS005	mg/L	8.92300		9.21000		97		%	85-115	03/20/2003	1911
MB	15380-016		mg/L	0.31500 B								03/20/2003	1924
MD	203270-2		mg/L	4.41100			4.40400	0.0070			1.0000	03/20/2003	2005
MS	203270-2	W03CSPK001	mg/L	23.65000		20.00000	4.40400	96			75-125	03/20/2003	2018
CCV	15380-023	W03CWRK018	mg/L	51.92100		50.00000		104		%	90-110	03/20/2003	2059
CCB	15380-024		mg/L	0.30900 B								03/20/2003	2112
CCV	15380-029	W03CWRK018	mg/L	51.89900		50.00000		104		%	90-110	03/20/2003	2219
CCB	15380-030		mg/L	0.31000 B								03/20/2003	2233

 * %=% REC, R=RPD, A=ABS Diff., D=% Diff.

0000011

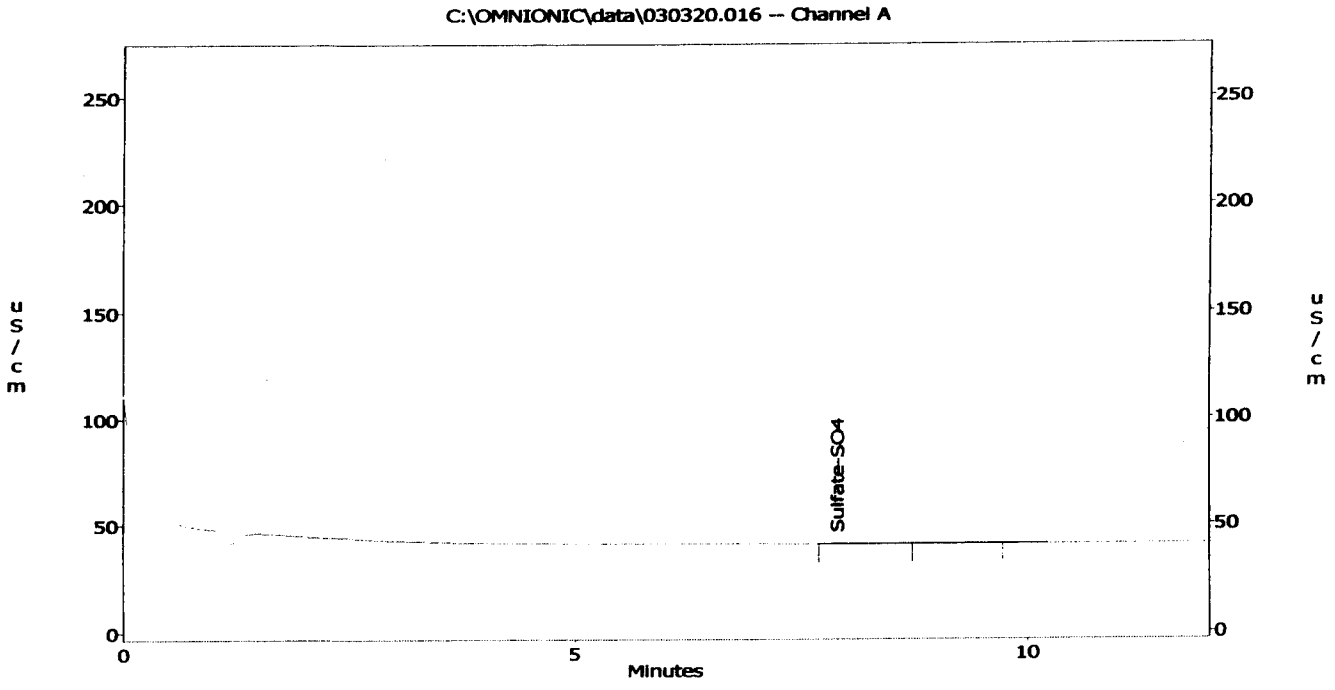
IC BATCH # 030320

LCSW03ALCS004 (in mg/L): F=8.47 Cl= 11.4 NO3-N = 9.71 Br=16.8 NO2-N =5.00
O-PHOS-P = 13.3 SO4= 9.21

File : C:\OMNIONIC\data\030320.016
Method : c:\omnionic\methods\Epa300a.met
Sample ID : MB

	Sample Amount	ISTD Amount	Dilution Factor
Calibration :	1.000	0.000	1.000
Run :	1.000	1.000	1.000

Acquired : Mar 20, 2003 19:24:59
Printed : Mar 20, 2003 19:38:15
User : dave



Channel A Results

Anion	Time	Area	Height	mg/l
Fluoride	1.82	0	0	0.000
Chloride	2.75	0	0	0.000 <1.00
Nitrite-N	3.30	0	0	0.000 <1.0
Bromide	4.10	0	0	0.000
Nitrate-N	4.90	0	0	0.000 <1.0
Phosphate-P	6.60	0	0	0.000
Sulfate-SO4	7.88	9086	356	0.315 <1.00

LCSW03CLCS005 :W03CSTK010 (in mg/L): NO2-N = 5.00
IC ELUENT: W03CRGT030
IC REGENERANT: W03CRGT029

TETRA TECH NUS

PHIL- 17162

TO: G. GLENN **DATE:** MAY 22, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOTAL ORGANIC CARBON
WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG 92502

SAMPLES: 16/Solid/

WOD-SS-126	WOD-SS-131	WOD-SS-136
WOD-SS-127	WOD-SS-132	WOD-SS-137
WOD-SS-128	WOD-SS-133	WOD-SS-138
WOD-SS-DUP10	WOD-SS-DUP09	WOD-SS-139
WOD-SS-129	WOD-SS-134	
WOD-SS-130	WOD-SS-135	

OVERVIEW

The sample set for the Waste Oil Dump – NASA Wallops Island, Virginia, SDG 92502 consists of 16 solid environmental samples (designated WOD-). All samples were analyzed for Total Organic Carbon (TOC). Two field duplicate pairs (WOD-SS-128/WOD-SS-DUP10 and WOD-SS-133/WOD-SS-DUP09) were included in this SDG.

The samples were collected by Tetra Tech NUS on February 19, 21, and 26, 2003. TOC samples were analyzed by STL Burlington of Colchester, Vermont.

TOC analyses were conducted using the Lloyd Kahn Method.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The TOC samples were analyzed 17 to 24 days outside the 14 day holding time depending on the date the samples were collected. The results for all samples were qualified as estimated (J).

- The field duplicate relative percent difference (RPD) exceeded the QC limit of 50% for one field duplicate pair, WOD-SS-133 and WOD-SS-DUP09. The results for this pair were qualified as estimated (J). The field duplicate precision was within QC the QC limit for field duplicate pair WOD-SS-128 and WOD-SS-DUP10.

NOTES

No other problems were observed during this review.

EXECUTIVE SUMMARY

Laboratory Performance: Holding times were exceeded for all samples.

Other Factors Affecting Data Quality: Field duplicate precision exceeded QC criteria for one field duplicate pair.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDG 92502 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	WOD-SS-126			WOD-SS-127			WOD-SS-128			WOD-SS-DUP10			WOD-SS-129			WOD-SS-130		
Laboratory ID:	519441			519442			519443			519444			519448			519449		
Sample Date:	02/21/03			02/21/03			02/21/03			02/21/03			02/19/03			02/19/03		
Percent Solid:	78			77			55			58			77			60		
Duplicate:							WOD-SS-DUP10			WOD-SS-128								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	36500	J	H	46900	J	H	63100	J	H	41100	J	H	10200	J	H	26600	J	H

Sample ID:	WOD-SS-131			WOD-SS-132			WOD-SS-133			WOD-SS-DUP09			WOD-SS-134			WOD-SS-135		
Laboratory ID:	519450			519451			519452			519455			519446			519447		
Sample Date:	02/19/03			02/19/03			02/19/03			02/19/03			02/26/03			02/26/03		
Percent Solid:	60			55			42			71			55			28		
Duplicate:							WOD-SS-DUP09			WOD-SS-133								
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	39600	J	H	59600	J	H	80900	J	GH	8490	J	GH	51500	J	H	175000	J	H

Sample ID:	WOD-SS-136			WOD-SS-137			WOD-SS-138			WOD-SS-139		
Laboratory ID:	519454			519453			519456			519445		
Sample Date:	02/19/03			02/19/03			02/19/03			02/21/03		
Percent Solid:	23			31			52			64		
Duplicate:												
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	191700	J	H	143300	J	H	69100	J	H	42100	J	H

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\92502\MISC_92502.DBF data retrieved on: 05/22/03

Qualifier Codes:

a = Lab Blank Contamination
b = Field Blank Contamination
c = Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d = MS/MSD Noncompliance
e = LSC/LSCD Noncompliance
f = Laboratory Duplicate Imprecision
g = Field Duplicate Imprecision
h = Holding Time Exceedance
i = ICP Serial Dilution Noncompliance
j = GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k = ICP Interference – include ICSAB %Rs
l = Instrument Calibration Range Exceedance
m = Sample Preservation
n = Internal Standard Noncompliance
o = Poor Instrument Performance (i.e. baseline drifting)
p = Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q = Other Problems (can encompass of number of issues)
r = Surrogates Recovery Noncompliance
s = Pesticide/PCB Resolution
t = % Breakdown Noncompliance for DDT and Endrin
u = Pesticide/PCB % Difference Between Columns for Positive Results
v = Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

WET CHEMISTRY

Sample Report Summary

WOD-SS-126

Client Sample No.

B0301-12C

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519441

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 78.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		78.4	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	128	36500	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-127

Client Sample No.

B0301-13C

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519442

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 77.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		77.4	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	130	46900	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-128

Client Sample No.

B0301-14C

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519443

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 55.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		55.1	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	182	63100	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-DUP10

Client Sample No.

B0301-15C

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519444

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 58.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		58.5	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	171	41100	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-129

Client Sample No.

B0279-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519448

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 77.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		77.4	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	130	10200	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-130

Client Sample No.

B0279-05A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519449

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 59.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		59.9	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	167	26600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-131

Client Sample No.

B0279-06A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519450

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 60.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		60.3	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	166	39600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-132

Client Sample No.

B0279-07A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519451

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 54.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		54.9	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	183	59600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WDD-SS-133

Client Sample No.

B0279-08A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519452

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 41.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		41.9	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	239	80900	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-DUP09

Client Sample No.

B0279-12A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519455

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 70.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		70.9	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	142	8490	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-134

Client Sample No.

B0327-03A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519446

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 54.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		54.8	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	183	51500	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-135

Client Sample No.

B0327-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519447

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 27.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		27.8	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	360	175000	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-136

Client Sample No.

B0279-11A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519454

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 22.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		22.8	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	439	191700	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-137

Client Sample No.

B0279-09A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519453

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 31.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		31.2	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	321	143300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-138

Client Sample No.

B0279-13A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92502

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519456

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 51.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		51.9	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	193	69100	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-139

Client Sample No.

B0301-16C

Lab Name: STL BURLINGTON

Contract:

SDG No.: 92502

Lab Code: STLVT

Case No.: 23000

Lab Sample ID: 519445

Matrix: SOIL

Client: MITKEM

Date Received: 03/18/03

% Solids: 64.0

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		64.0	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	157	42100	

Printed on: 04/01/03 11:56 AM

APPENDIX C

Support Documentation

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0301

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

(C3)

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0301-12C	Soil	2/21/03 9:30:00 AM	1						
B0301-13C	Soil	2/21/03 9:58:00 AM	1						
B0301-14C	Soil	2/21/03 10:12:00 AM	1						
B0301-15C	Soil	2/21/03 11:12:00 AM	1						
B0301-16C	Soil	2/21/03 11:02:00 AM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: INCLUDE ALL RAW DATA PO#315 / MS/MSD ON SAMPLE 12

		Date/Time			Date/Time
Relinquished by:	[signature]	3-17-03 1500	**Received by:**	FED-EX	
Relinquished by:			**Received by:**	[signature]	3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0327

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0327-03A	Soil	2/26/03 9:40:00 AM	1						
B0327-04A	Soil	2/26/03 10:00:00 AM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO # 316 - INCLUDE ALL RAW DATA

		Date/Time			Date/Time
Relinquished by:	[signature]	3-17-03 1500	Received by:	FED EX	3-17-03
Relinquished by:			Received by:	[signature]	3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

Subcontractor:

B0279

CHAIN-OF-CUSTODY RECORD

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1
B0279-04A	Soil	2/19/03 10:40:00 AM	1
B0279-05A	Soil	2/19/03 11:05:00 AM	1
B0279-06A	Soil	2/19/03 11:16:00 AM	1
B0279-07A	Soil	2/19/03 11:30:00 AM	1
B0279-08A	Soil	2/19/03 11:42:00 AM	1
B0279-09A	Soil	2/19/03 12:17:00 PM	1
B0279-11A	Soil	2/19/03 12:34:00 PM	1
B0279-12A	Soil	2/19/03 12:42:00 PM	1
B0279-13A	Soil	2/19/03 12:49:00 PM	1

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: Post 317 Include all raw data / MS/MSD on Sample 04

	Date/Time		Date/Time
Relinquished by:	3-17-03 1500	Received by:	Fed-Ex
Relinquished by:		Received by:	3/18/03 0945

SEVERN TRENT STL

April 2, 2003

Ms. Kristen Barber
Mitkem Corporation
175 Metro Center Blvd.
Warwick, RI 02886

Re: Laboratory Project No. 23000
Case No. 23000; SDG: 92502

Dear Ms. Barber:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on March 18, 2003. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 03/18/03 ETR No: 92502		
519441	B0301-12C	02/21/03	Soil
519441MS	B0301-12CMS	02/21/03	Soil
519441DP	B0301-12CREP	02/21/03	Soil
519442	B0301-13C	02/21/03	Soil
519443	B0301-14C	02/21/03	Soil
519444	B0301-15C	02/21/03	Soil
519445	B0301-16C	02/21/03	Soil
519446	B0327-03A	02/26/03	Soil
519447	B0327-04A	02/26/03	Soil
519448	B0279-04A	02/19/03	Soil
519448MS	B0279-04AMS	02/19/03	Soil
519448DP	B0279-04AREP	02/19/03	Soil
519449	B0279-05A	02/19/03	Soil
519450	B0279-06A	02/19/03	Soil
519451	B0279-07A	02/19/03	Soil
519452	B0279-08A	02/19/03	Soil
519453	B0279-09A	02/19/03	Soil
519454	B0279-11A	02/19/03	Soil
519455	B0279-12A	02/19/03	Soil
519456	B0279-13A	02/19/03	Soil

Severn Trent Laboratories, Inc.
STL Burlington • 208 South Park Drive, Suite 1, Colchester, VT 05446
Tel 802 655 1203 Fax 802 655 1248 • *www.stl-inc.com*

A part of Severn Trent plc

0001-A

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that all field samples in this delivery group were received by the Laboratory outside the method prescribed holding time. The client directed that the Laboratory proceed with the analyses as normal.

Total Organic Carbon (TOC) by Lloyd Kahn Method:
Please note that the TOC analyses of sample B0301-12C yielded Percent Relative Standard Deviation (%RSD) between replicates that exceeded control limits (0-20%) at 31%. The Laboratory suspects that this anomaly is due to sample non-homogeneity.

If there are any questions regarding this submittal, please contact Ron Pentkowski at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0185.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

Enclosure

0001-B LAST ALPHA

TETRA TECH NUS

PHIL- 17163

TO: G. GLENN **DATE:** MAY 23, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOTAL ORGANIC CARBON
FIRE TRAINING AREA/WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG 92508

SAMPLES: 18/Solid/

FTA-SS-101	FTA-SS-115	WOD-SS-103
FTA-SS-102	FTA-SS-116	WOD-SS-104
FTA-SS-103	FTA-SS-117	WOD-SS-106
FTA-SS-112	FTA-SS-118	WOD-SS-107
FTA-SS-113	WOD-SS-101	WOD-SS-108
FTA-SS-114	WOD-SS-102	WOD-SS-121

OVERVIEW

The sample set for the Fire Training Area and Waste Oil Dump – NASA Wallops Island, Virginia, SDG 92508 consists of 18 solid environmental samples (designated FTA-SS- and WOD-SS-). All samples were analyzed for Total Organic Carbon (TOC). No field duplicate pairs were included in this SDG.

The samples were collected by Tetra Tech NUS on February 3, 5, 6, 10, and 13, 2003. TOC samples were analyzed by STL Burlington of Colchester, Vermont.

TOC analyses were conducted using the Lloyd Kahn Method.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory blank results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The TOC samples were analyzed between 28 and 38 days outside the 14 day holding time. The results for all samples were qualified as estimated (J).

NOTES

No other problems were observed during this review.

EXECUTIVE SUMMARY

Laboratory Performance: Holding times were exceeded for all samples.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDG 92508 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-101			FTA-SS-102			FTA-SS-103			FTA-SS-112			FTA-SS-113			FTA-SS-114		
Laboratory ID:	519493			519494			519495			519486			519487			519488		
Sample Date:	02/03/03			02/03/03			02/03/03			02/05/03			02/05/03			02/05/03		
Pct Solid:	82			93			94			85			92			79		
Duplicate:																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	26300	J	H	4650	J	H	1650	J	H	8380	J	H	5110	J	H	4270	J	H

Sample ID:	FTA-SS-115			FTA-SS-116			FTA-SS-117			FTA-SS-118			WOD-SS-101			WOD-SS-102		
Laboratory ID:	519489			519490			519491			519492			519479			519480		
Sample Date:	02/05/03			02/05/03			02/05/03			02/05/03			02/06/03			02/06/03		
Pct Solid:	93			89			86			91			84			78		
Duplicate:																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	664	J	H	10500	J	H	19400	J	H	13900	J	H	12500	J	H	4670	J	H

Sample ID:	WOD-SS-103			WOD-SS-104			WOD-SS-106			WOD-SS-107			WOD-SS-108			WOD-SS-121		
Laboratory ID:	519481			519482			519483			519484			519485			519496		
Sample Date:	02/06/03			02/06/03			02/10/03			02/10/03			02/10/03			02/13/03		
Pct Solid:	87			76			89			90			86			93		
Duplicate:																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	14300	J	H	26000	J	H	7300	J	H	8250	J	H	3920	J	H	5000	J	H

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\92508\MISC_92508.DBF data retrieved on: 05/23/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

WET CHEMISTRY

Sample Report Summary

FTA-SS-101

Client Sample No.

B0187-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519493

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 82.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		82.1	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	122	26300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-102

Client Sample No.

B0187-05A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519494

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.1	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	108	4650	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-103

Client Sample No.

B0187-08A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519495

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 94.0

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		94.0	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	107	1650	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-112

Client Sample No.

B0215-03A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519486

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 84.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		84.9	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	118	8380	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-113

Client Sample No.

B0215-06A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519487

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 91.9

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		91.9	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	109	5110	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-114

Client Sample No.

B0215-09A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519488

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 79.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		79.5	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	126	4270	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-115

Client Sample No.

B0215-13A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519489

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.3	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	108	664	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-116

Client Sample No.

B0215-16A

Lab Name: STL BURLINGTON | **Contract:** | **SDG No.:** 92508

Lab Code: STLVT | **Case No.:** 23000 | **Lab Sample ID:** 519490

Matrix: SOIL | **Client:** MITKEM | **Date Received:** 03/18/03

% Solids: 89.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		89.3	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	112	10500	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-117

Client Sample No.

B0215-19A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519491

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 85.7

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		85.7	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	117	19400	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-118

Client Sample No.

B0215-22A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519492

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 90.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.6	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	111	13900	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-101

Client Sample No.

B0221-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519479

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 84.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		84.4	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	119	12500	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-102

Client Sample No.

B0221-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519480

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 78.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		78.1	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	129	4670	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-103

Client Sample No.

B0221-06A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519481

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 86.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		86.6	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	116	14300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-104

Client Sample No.

B0221-08A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519482

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 75.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		75.6	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	133	26000	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-55-106

Client Sample No.

B0239-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519483

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 88.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		88.8	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	113	7300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-107

Client Sample No.

B0239-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519484

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 90.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.1	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	111	8250	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-108

Client Sample No.

B0239-06A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519485

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 86.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		86.1	
IN847	TOC by Lloyd Kahn	03/27/03	11:41	BLKLK0327A	mg/Kg	1	117	3920	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-121

Client Sample No.

B0262-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92508

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519496

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 92.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		92.8	
IN847	TOC by Lloyd Kahn	03/29/03	12:31	BLKLK0329A	mg/Kg	1	108	5000	

Printed on: 04/01/03 11:56 AM

APPENDIX C

Support Documentation

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0187

CHAIN-OF-CUSTODY RECORD

#85

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0187-02A	Soil	2/3/03 11:50:00 AM	1						
B0187-05A	Soil	2/3/03 12:45:00 PM	1						
B0187-08A	Soil	2/3/03 1:26:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO # 321 INCLUDE ALL RAW DATA

		Date/Time			Date/Time
Relinquished by:		3-17-03 1500	**Received by:**		
Relinquished by:			**Received by:**		3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0215

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests						
			E415.1						
B0215-03A	Soil	2/5/03 8:00:00 AM	1						
B0215-06A	Soil	2/5/03 8:46:00 AM	1						
B0215-09A	Soil	2/5/03 9:22:00 AM	1						
B0215-13A	Soil	2/5/03 10:30:00 AM	1						
B0215-16A	Soil	2/5/03 11:28:00 AM	1						
B0215-19A	Soil	2/5/03 12:10:00 PM	1						
B0215-22A	Soil	2/5/03 12:48:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO# 320 - INCLUDE ALL RAW DATA

		Date/Time		Date/Time
Relinquished by:		3-17-03 15:00	**Received by:**	FED-EX
Relinquished by:			**Received by:**	3/18/03 0945

.ıkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0221

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0221-02A	Soil	2/6/03 8:08:00 AM	1						
B0221-04A	Soil	2/6/03 8:53:00 AM	1						
B0221-06A	Soil	2/6/03 9:55:00 AM	1						
B0221-08A	Soil	2/6/03 11:45:00 AM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: INCLUDE All RAW DATA PO# 316

		Date/Time			Date/Time
Relinquished by:	[signature]	3-17-03 1500	Received by:	FED-EX	
Relinquished by:			Received by:	[signature]	3/18/03 0945

.xem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0239

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0239-02A	Soil	2/10/03 11:45:00 AM	1						
B0239-04A	Soil	2/10/03 12:45:00 PM	1						
B0239-06A	Soil	2/10/03 1:45:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: Rott 319 - INCLUDE ALL RAW DATA / MS/MSD ON SAMPLE 06

		Date/Time			Date/Time
Relinquished by:	[signature]	3-17-03 1500	Received by:	FED EX	
Relinquished by:			Received by:	[signature]	3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0262

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0262-02A	Soil	2/13/03 8:40:00 AM	1						
B0262-04A	Soil	2/13/03 9:55:00 AM	1						
B0262-07A	Soil	2/13/03 11:00:00 AM	1						
B0262-09A	Soil	2/13/03 12:40:00 PM	1						
B0262-11A	Soil	2/13/03 1:10:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO# 322 - INCLUDE ALL RAW DATA

COPY - ORIGINAL ON FILE
SDG # 925091 ETR # 925091

	Date/Time		Date/Time
Relinquished by:	3-17-03 1508	**Received by:**	FED-EX
		Received by:	3/18/03 0945

SEVERN TRENT STL

April 2, 2003

Ms. Kristen Barber
Mitkem Corporation
175 Metro Center Blvd.
Warwick, RI 02886

Re: Laboratory Project No. 23000
Case No. 23000; SDG: 92508

Dear Ms. Barber:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on March 18, 2003. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 03/18/03 ETR No: 92508		
519479	B0221-02A	02/06/03	Soil
519480	B0221-04A	02/06/03	Soil
519481	B0221-06A	02/06/03	Soil
519482	B0221-08A	02/06/03	Soil
519483	B0239-02A	02/10/03	Soil
519484	B0239-04A	02/10/03	Soil
519485	B0239-06A	02/10/03	Soil
519485MS	B0239-06AMS	02/10/03	Soil
519485D	P B0239-06AREP	02/10/03	Soil
519486	B0215-03A	02/05/03	Soil
519487	B0215-06A	02/05/03	Soil
519488	B0215-09A	02/05/03	Soil
519489	B0215-13A	02/05/03	Soil
519490	B0215-16A	02/05/03	Soil
519491	B0215-19A	02/05/03	Soil
519492	B0215-22A	02/05/03	Soil
519493	B0187-02A	02/03/03	Soil
519494	B0187-05A	02/03/03	Soil
519495	B0187-08A	02/03/03	Soil
519496	B0262-02A	02/13/03	Soil

Severn Trent Laboratories, Inc.
STL Burlington • 208 South Park Drive, Suite 1, Colchester, VT 05446
Tel 802 655 1203 Fax 802 655 1248 • *www.stl-inc.com*

A part of Severn Trent plc

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that all field samples in this delivery group were received by the Laboratory outside the method prescribed holding time. The client directed that the Laboratory proceed with the analyses as normal.

Total Organic Carbon (TOC) by Lloyd Kahn Method:
Please note that the TOC analyses of sample B0239-06A yielded Percent Relative Standard Deviation (%RSD) between replicates that exceeded control limits (0-20%) at 29%. The Laboratory suspects that this anomaly is due to sample non-homogeneity.

If there are any questions regarding this submittal, please contact Ron Pentkowski at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0229.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

Enclosure

0001-B LAST ALPHA

TETRA TECH NUS

PHIL- 17164

TO: G. GLENN **DATE:** MAY 22, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOTAL ORGANIC CARBON
FIRE TRAINING AREA/WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG 92509

SAMPLES: 18/Solid/

FTA-SS-104	FTA-SS-110	WOD-SS-120
FTA-SS-105	FTA-SS-DUP1	WOD-SS-121
FTA-SS-106	WOD-SS-116	WOD-SS-122
FTA-SS-107	WOD-SS-117	WOD-SS-123
FTA-SS-108	WOD-SS-118	WOD-SS-124
FTA-SS-109	WOD-SS-119	WOD-SS-125

OVERVIEW

The sample set for the Fire Training Area and Waste Oil Dump – NASA Wallops Island, Virginia, SDG 92509 consists of 18 solid environmental samples (designated FTA-SS- and WOD-SS-). All samples were analyzed for Total Organic Carbon (TOC). One field duplicate pair (FTA-SS-110 and FTA-SS-DUP1) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 4, 12, and 13, 2003. TOC samples were analyzed by STL Burlington of Colchester, Vermont.

TOC analyses were conducted using the Lloyd Kahn Method.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The TOC samples were analyzed 28 to 30 days outside the 14 day holding time. The results for all samples were qualified as estimated (J).

NOTES

No other problems were observed during this review.

EXECUTIVE SUMMARY

Laboratory Performance: Holding times were exceeded for all samples.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDB 92509 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	FTA-SS-104			FTA-SS-105			FTA-SS-106			FTA-SS-107			FTA-SS-108			FTA-SS-109		
Laboratory ID:	519507			519508			519509			519510			519511			519512		
Sample Date:	02/04/03			02/04/03			02/04/03			02/04/03			02/04/03			02/04/03		
Percent Solid:	93			84			88			87			79			91		
Duplicate:																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	15300	J	H	25600	J	H	11800	J	H	10300	J	H	11700	J	H	6600	J	H

Sample ID:	FTA-SS-110			FTA-SS-DUP1			WOD-SS-116			WOD-SS-117			WOD-SS-118			WOD-SS-119		
Laboratory ID:	519513			519514			519502			519503			519504			519505		
Sample Date:	02/04/03			02/04/03			02/12/03			02/12/03			02/12/03			02/12/03		
Percent Solid:	88			90			83			90			94			86		
Duplicate:	TA-SS-DUP1			FTA-SS-110														
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	2760	J	H	3840	J	H	30400	J	H	13600	J	H	2090	J	H	9910	J	H

Sample ID:	WOD-SS-120			WOD-SS-121			WOD-SS-122			WOD-SS-123			WOD-SS-124			WOD-SS-125		
Laboratory ID:	519506			519501			519497			519498			519499			519500		
Sample Date:	02/12/03			02/12/03			02/13/03			02/13/03			02/13/03			02/13/03		
Percent Solid:	78			93			85			86			76			83		
Duplicate:																		
	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE	RESULT	QUAL	CODE
MISCELLANEOUS PARAMETERS	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
TOC By Lloyd Kahn	51900	J	H	2560	J	H	14500	J	H	13900	J	H	17800	J	H	13100	J	H

Data Qualifiers:
J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\92509\MISC_92509.DBF data retrieved on: 05/23/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

WET CHEMISTRY

Sample Report Summary

FTA-SS-104

Client Sample No.

B0199-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519507

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.2	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	108	15300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-105

Client Sample No.

B0199-05A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519508

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 83.7

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		83.7	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	120	25600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-106

Client Sample No.

B0199-08A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519509

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 88.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		88.1	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	114	11800	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-107

Client Sample No.

B0199-11A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519510

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 87.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		87.1	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	115	10300	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-108

Client Sample No.

B0199-14A

Lab Name: STL BURLINGTON | **Contract:** | **SDG No.:** 92509

Lab Code: STLVT | **Case No.:** 23000 | **Lab Sample ID:** 519511

Matrix: SOIL | **Client:** MITKEM | **Date Received:** 03/18/03

% Solids: 79.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		79.2	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	127	11700	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-109

Client Sample No.

B0199-17A

Lab Name: STL BURLINGTON

Contract:

SDG No.: 92509

Lab Code: STLVT

Case No.: 23000

Lab Sample ID: 519512

Matrix: SOIL

Client: MITKEM

Date Received: 03/18/03

% Solids: 91.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		91.2	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	110	6600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-110

Client Sample No.

B0199-20A

Lab Name: STL BURLINGTON

Contract:

SDG No.: 92509

Lab Code: STLVT

Case No.: 23000

Lab Sample ID: 519513

Matrix: SOIL

Client: MITKEM

Date Received: 03/18/03

% Solids: 88.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		88.2	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	114	2760	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

FTA-SS-DUP1

Client Sample No.

B0199-23A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519514

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 90.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.4	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	111	3840	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-116

Client Sample No.

B0258-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519502

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 83.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		83.1	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	121	30400	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-117

Client Sample No.

B0258-06A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519503

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 90.4

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.4	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	111	13600	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-118

Client Sample No.

B0258-08A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519504

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 94.1

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		94.1	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	107	2090	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-119

Client Sample No.

B0258-10A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519505

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 86.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		86.5	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	116	9910	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-120

Client Sample No.

B0258-14A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519506

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 78.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		78.5	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	128	51900	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-121

Client Sample No.

B0258-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519501

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.3	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	108	2560	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-122

Client Sample No.

B0262-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519497

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 85.0

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		85.0	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	118	14500	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-123

Client Sample No.

B0262-07A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519498

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 85.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		85.6	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	117	13900	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-124

Client Sample No.

B0262-09A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519499

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 76.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		76.3	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	132	17800	

Printed on: 04/01/03 11:56 AM

WET CHEMISTRY

Sample Report Summary

WOD-SS-125

Client Sample No.

B0262-11A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92509

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519500

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 82.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		82.6	
IN847	TOC by Lloyd Kahn	03/28/03	16:57	BLKLK0328A	mg/Kg	1	122	13100	

Printed on: 04/01/03 11:56 AM

APPENDIX C

Support Documentation

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0262

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-0

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0262-02A	Soil	2/13/03 8:40:00 AM	1						
B0262-04A	Soil	2/13/03 9:55:00 AM	1						
B0262-07A	Soil	2/13/03 11:00:00 AM	1						
B0262-09A	Soil	2/13/03 12:40:00 PM	1						
B0262-11A	Soil	2/13/03 1:10:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO# 322 - INCLUDE ALL RAW DATA

	Date/Time		Date/Time
Relinquished by:	3-17-03 1508	**Received by:**	FED-EX
Relinquished by:		**Received by:**	3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0258

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0258-02A	Soil	2/12/03 8:25:00 AM	1						
B0258-04A	Soil	2/12/03 9:05:00 AM	1						
B0258-06A	Soil	2/12/03 9:50:00 AM	1						
B0258-08A	Soil	2/12/03 11:10:00 AM	1						
B0258-10A	Soil	2/12/03 12:05:00 PM	1						
B0258-14A	Soil	2/12/03 12:55:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO # 323- INCLUDE ALL RAW DATA

		Date/Time			Date/Time
Relinquished by:		3/17/03 1500	Received by:	FED-EX	
Relinquished by:			Received by:		3/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0199

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-03

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0199-02A	Soil	2/4/03 7:50:00 AM	1						
B0199-05A	Soil	2/4/03 8:35:00 AM	1						
B0199-08A	Soil	2/4/03 9:10:00 AM	1						
B0199-11A	Soil	2/14/03 10:05:00 AM	1						
B0199-14A	Soil	2/4/03 10:45:00 AM	1						
B0199-17A	Soil	2/4/03 11:22:00 AM	1						
B0199-20A	Soil	2/4/03 12:20:00 PM	1						
B0199-23A	Soil	2/4/03 12:25:00 PM	1						
B0199-25A	Soil	2/4/03 1:15:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO# 324- INCLUDE All RAW DATA / MS/MSD ON SAMPLE 25

		Date/Time			Date/Time
Relinquished by:	[signature]	3-17-03 1500	Received by:	FED-EX	
Relinquished by:			Received by:	[signature]	3/18/03 0945

SEVERN TRENT STL

April 2, 2003

Ms. Kristen Barber
Mitkem Corporation
175 Metro Center Blvd.
Warwick, RI 02886

Re: Laboratory Project No. 23000
Case No. 23000; SDG: 92509

Dear Ms. Barber:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on March 18, 2003. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 03/18/03	ETR No: 92509	
519497	B0262-04A	02/13/03	Soil
519498	B0262-07A	02/13/03	Soil
519499	B0262-09A	02/13/03	Soil
519500	B0262-11A	02/13/03	Soil
519501	B0258-02A	02/12/03	Soil
519502	B0258-04A	02/12/03	Soil
519503	B0258-06A	02/12/03	Soil
519504	B0258-08A	02/12/03	Soil
519505	B0258-10A	02/12/03	Soil
519506	B0258-14A	02/12/03	Soil
519507	B0199-02A	02/04/03	Soil
519508	B0199-05A	02/04/03	Soil
519509	B0199-08A	02/04/03	Soil
519510	B0199-11A	02/04/03	Soil
519511	B0199-14A	02/04/03	Soil
519512	B0199-17A	02/04/03	Soil
519513	B0199-20A	02/04/03	Soil
519514	B0199-23A	02/04/03	Soil

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that all field samples in this delivery group were received by the Laboratory outside the method prescribed holding time. The client directed that the Laboratory proceed with the analyses as normal.

Severn Trent Laboratories, Inc.
STL Burlington • 208 South Park Drive, Suite 1, Colchester, VT 05446
Tel 802 655 1203 Fax 802 655 1248 • *www.stl-inc.com*

A part of Severn Trent plc

0001-A

Client specified matrix spike/matrix spike duplicate samples were not analyzed or requested with the above samples. However, routine method quality control analyses were performed.

If there are any questions regarding this submittal, please contact Ron Pentkowski at (802) 655-1203.

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0165.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

enclosure
MFW/jtw

0001-B LAST ALPHA

TETRA TECH NUS

PHIL- 17165

TO: G. GLENN **DATE:** MAY 23, 2003

FROM: MEGAN RITCHIE **COPIES:** FILE

SUBJECT: WET CHEMISTRY DATA REVIEW – TOTAL ORGANIC CARBON
FIRE TRAINING AREA/WASTE OIL DUMP – NASA WALLOPS ISLAND, VIRGINIA
SDG 92511

SAMPLES: 9/Solid/

FTA-SS-111	WOD-SS-DUP05	WOD-SS-112
WOD-SS-109	WOD-SS-110	WOD-SS-113
WOD-SS-105	WOD-SS-111	WOD-SS-114

OVERVIEW

The sample set for the Fire Training Area and Waste Oil Dump – NASA Wallops Island, Virginia, SDG 92511 consists of 9 solid environmental samples (designated FTA-SS- and WOD-SS-). All samples were analyzed for Total Organic Carbon (TOC). One field duplicate pair (WOD-SS-109 and WOD-SS-DUP05) was included in this SDG.

The samples were collected by Tetra Tech NUS on February 4 and 11, 2003. TOC samples were analyzed by STL Burlington of Colchester, Vermont.

TOC analyses were conducted using the Lloyd Kahn Method.

SUMMARY

All analytes were successfully analyzed in all samples. The findings offered in this report are based upon a general review of all available data including data completeness, holding times until analysis, initial/continuing calibrations, laboratory blank results, field duplicate results, matrix spikes (MS), laboratory control spikes (LCS), laboratory duplicates, and detection limits.

Areas of concern with respect to data quality are listed below as follows:

MINOR PROBLEMS

- The TOC samples were analyzed 23 to 30 days outside the 14 day holding time. The results for all samples were qualified as estimated (J).

- The field duplicate relative percent difference (RPD) exceeded the QC limit of 50% for field duplicate pair, WOD-SS-109 and WOD-SS-DUP05. The results for this pair were qualified as estimated (J).

NOTES

No other problems were observed during this review.

EXECUTIVE SUMMARY

Laboratory Performance: Holding times were exceeded for all samples.

Other Factors Affecting Data Quality: Field duplicate precision exceeded QC criteria.

The data for these analyses were reviewed to evaluate usability with reference to the EPA "Functional Guidelines for Evaluating Inorganic Analyses ", as amended for use within EPA Region 3 (4/93), and the NFESC document entitled "Navy IRCDQM" (9/99).

The text of this report has been formatted to address only those problem areas affecting data quality.

"I attest that the data referenced herein were reviewed according to the agreed upon validation criteria as specified in the NFESC Guidelines and the Quality Assurance Project Plan (QAPP)."

Megan Ritchie

Tetra Tech NUS, Inc.
Megan Ritchie
Chemist

Tetra Tech NUS, Inc.
Russell Sloboda
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

APPENDIX A

Qualified Analytical Results

DATA SUMMARY OF TOC RESULTS
SDG 92511 - SOIL SAMPLES
WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA

Sample ID:	**FTA-SS-111**			**WOD-SS-105**			**WOD-SS-109**			**WOD-SS-DUP05**			**WOD-SS-110**		
Laboratory ID:	**519517**			**519519**			**519518**			**519520**			**519521**		
Sample Date:	**02/04/03**			**02/11/03**			**02/11/03**			**02/11/03**			**02/11/03**		
Duplicate:							**WOD-SS-DUP05**			**WOD-SS-109**					
Pct Solid:	**86**			**88**			**91**			**90**			**93**		
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**
MISCELLANEOUS PARAMETERS	**mg/kg**			**mg/kg**			**mg/kg**			**mg/kg**			**mg/kg**		
TOC By Lloyd Kahn	9320	J	H	7980	J	H	3200	J	GH	7800	J	GH	1670	J	H

Sample ID:	**WOD-SS-111**			**WOD-SS-112**			**WOD-SS-113**			**WOD-SS-114**					
Laboratory ID:	**519522**			**519523**			**519524**			**519525**					
Sample Date:	**02/11/03**			**02/11/03**			**02/11/03**			**02/11/03**					
Duplicate:															
Pct Solid:	**94**			**91**			**95**			**93**					
	RESULT	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**	**RESULT**	**QUAL**	**CODE**			
MISCELLANEOUS PARAMETERS	**mg/kg**			**mg/kg**			**mg/kg**			**mg/kg**					
TOC By Lloyd Kahn	806	J	H	3690	J	H	984	J	H	4130	J	H			

Data Qualifiers:

J -- Value is considered estimated due to exceedance of technical quality control criteria or because result is less than the Contract Required Quantitation Limit (CRQL).

Database source file: S:\RITCHIEM\WALLOPS ISLAND\WOD\92511\MISC_92511.DBF data retrieved on: 05/23/03

Qualifier Codes:

a	=	Lab Blank Contamination
b	=	Field Blank Contamination
c	=	Calibration (i.e., %RSDs, %Ds, ICVs, CCVs, RPDs, RRFs, etc.) Noncompliance
d	=	MS/MSD Noncompliance
e	=	LSC/LSCD Noncompliance
f	=	Laboratory Duplicate Imprecision
g	=	Field Duplicate Imprecision
h	=	Holding Time Exceedance
i	=	ICP Serial Dilution Noncompliance
j	=	GFAA PDS – GFAA MSA's r<0.995 (correlation coefficient)
k	=	ICP Interference – include ICSAB %Rs
l	=	Instrument Calibration Range Exceedance
m	=	Sample Preservation
n	=	Internal Standard Noncompliance
o	=	Poor Instrument Performance (i.e. baseline drifting)
p	=	Uncertainty Near Detection Limit (<2 x IDL for inorganics and < CRQL for organics)
q	=	Other Problems (can encompass of number of issues)
r	=	Surrogates Recovery Noncompliance
s	=	Pesticide/PCB Resolution
t	=	% Breakdown Noncompliance for DDT and Endrin
u	=	Pesticide/PCB % Difference Between Columns for Positive Results
v	=	Non-linear Calibrations, Tuning r <0.995 (correlation coefficient)

APPENDIX B

Results as Reported by the Laboratory

WET CHEMISTRY

Sample Report Summary

FTA-SS-111

Client Sample No.

B0199-25A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519517

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 85.7

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		85.7	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	117	9320	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-109

Client Sample No.

B0257-02A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519518

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 91.0

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		91.0	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	110	3200	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-105

Client Sample No.

B0257-04A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519519

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 87.8

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		87.8	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	114	7980	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

SS
WOD-SL-DUP05

Client Sample No.

B0257-07A

Lab Name: STL BURLINGTON | **Contract:** | **SDG No.:** 92511

Lab Code: STLVT | **Case No.:** 23000 | **Lab Sample ID:** 519520

Matrix: SOIL | **Client:** MITKEM | **Date Received:** 03/18/03

% Solids: 90.3

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.3	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	111	7800	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-110

Client Sample No.

B0257-09A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519521

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.2	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	108	1670	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-111

Client Sample No.

B0257-10A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519522

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 94.5

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		94.5	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	106	806	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-112

Client Sample No.

B0257-12A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519523

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 90.7

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		90.7	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	111	3690	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-113

Client Sample No.

B0257-14A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519524

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 94.6

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		94.6	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	106	984	

Printed on: 04/01/03 03:11 PM

WET CHEMISTRY

Sample Report Summary

WOD-SS-114

Client Sample No.

B0257-16A

Lab Name: STL BURLINGTON | Contract: | SDG No.: 92511

Lab Code: STLVT | Case No.: 23000 | Lab Sample ID: 519525

Matrix: SOIL | Client: MITKEM | Date Received: 03/18/03

% Solids: 93.2

Method	Parameter	Analytical Run Date	Analytical Run Time	Analytical Batch	Units	DF	RL	Conc.	Qual.
IN623	Solids, Percent	03/20/03	15:05	N/A	%	1.0		93.2	
IN847	TOC by Lloyd Kahn	03/20/03	16:32	BLKLK0320A	mg/Kg	1	108	4130	

Printed on: 04/01/03 03:11 PM

APPENDIX C

Support Documentation

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0199

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-0

Sample ID	Matrix	Collection Date	Requested Tests: E415.1						
B0199-02A	Soil	2/4/03 7:50:00 AM	1						
B0199-05A	Soil	2/4/03 8:35:00 AM	1						
B0199-08A	Soil	2/4/03 9:10:00 AM	1						
B0199-11A	Soil	2/14/03 10:05:00 AM	1						
B0199-14A	Soil	2/4/03 10:45:00 AM	1						
B0199-17A	Soil	2/4/03 11:22:00 AM	1						
B0199-20A	Soil	2/4/03 12:20:00 PM	1						
B0199-23A	Soil	2/4/03 12:25:00 PM	1						
B0199-25A	Soil	2/4/03 1:15:00 PM	1						

COPY - ORIGINAL ON FILE
SDG # 92509 ETR # 92509

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO# 324- INCLUDE All Raw DATA / MS/MSD ON SAMPLE 25

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	3-17-03 1500	FED-EX	2/18/03 0945

Mitkem Corporation
175 Metro Center Blvd
Warwick, RI 02886-1755
(401) 732-3400

B0257

CHAIN-OF-CUSTODY RECORD

Subcontractor:

17-Mar-0

Sample ID	Matrix	Collection Date	Requested Tests						
			E415.1						
B0257-02A	Soil	2/11/03 7:55:00 AM	1						
B0257-04A	Soil	2/11/03 8:40:00 AM	1						
B0257-07A	Soil	2/11/03 8:55:00 AM	1						
B0257-09A	Soil	2/11/03 9:25:00 AM	1						
B0257-10A	Soil	2/11/03 10:40:00 AM	1						
B0257-12A	Soil	2/11/03 11:25:00 AM	1						
B0257-14A	Soil	2/11/03 12:15:00 PM	1						
B0257-16A	Soil	2/11/03 1:15:00 PM	1						

1) E415.1 or equivalent method for the analysis of TOTAL ORGANIC CARBON BY COMBUSTIO

Comments: PO # 326 - INCLUDE ALL RAW DATA

		Date/Time			Date/Time
Relinquished by:		3-19-03 1500	**Received by:**	FED-EX	
Relinquished by:			**Received by:**		3/18/03 0945

SEVERN TRENT STL

April 2, 2003

Ms. Kristen Barber
Mitkem Corporation
175 Metro Center Blvd.
Warwick, RI 02886

Re: Laboratory Project No. 23000
Case No. 23000; SDG: 92511

Dear Ms. Barber:

Enclosed are the analytical results of samples received intact by Severn Trent Laboratories on March 18, 2003. Laboratory numbers have been assigned and designated as follows:

Lab ID	Client Sample ID	Sample Date	Sample Matrix
	Received: 03/18/03	ETR No: 92511	
519517	B0199-25A	02/04/03	Soil
519517MS	B0199-25AMS	02/04/03	Soil
519517DP	B0199-25AREP	02/04/03	Soil
519518	B0257-02A	02/11/03	Soil
519519	B0257-04A	02/11/03	Soil
519520	B0257-07A	02/11/03	Soil
519521	B0257-09A	02/11/03	Soil
519522	B0257-10A	02/11/03	Soil
519523	B0257-12A	02/11/03	Soil
519524	B0257-14A	02/11/03	Soil
519525	B0257-16A	02/11/03	Soil

Documentation that identifies the condition of the samples at the time of sample receipt and the issues arising at the time of sample log-in is included in the Sample Handling section of this submittal.

Please note that all field samples in this delivery group were received by the Laboratory outside the method prescribed holding time. The client directed that the Laboratory proceed with the analyses as normal.

Total Organic Carbon (TOC) by Lloyd Kahn Method:
Please note that the TOC analyses of sample B0199-25A yielded Percent Relative Standard Deviation (%RSD) between replicates that exceeded control limits (0-20%) at 22%. The Laboratory suspects that this anomaly is due to sample non-homogeneity.

If there are any questions regarding this submittal, please contact Ron Pentkowski at (802) 655-1203.

Severn Trent Laboratories, Inc.
STL Burlington • 208 South Park Drive, Suite 1, Colchester, VT 05446
Tel 802 655 1203 Fax 802 655 1248 • *www.stl-inc.com*
A part of Severn Trent plc

0001-A

This report shall not be reproduced, except in full, without the written approval of the laboratory. This report is sequentially numbered starting with page 0001 and ending with page 0168.

I certify that this package is in compliance with the NELAC requirements, both technically and for completeness, for other than the conditions detailed above. The release of the data contained in this hardcopy data package has been authorized by the Laboratory Director or his designee, as verified by the following signature.

Sincerely,

Michael F. Wheeler, Ph.D.
Laboratory Director

Enclosure

0001-B LAST ALPHA

Appendix G

Human Health Risk Assessment Documentation

Appendix G0

Background Comparison Table

APPENDIX G0-1
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test: Question Posed:		Detection Freq: Z or Fisher Site Freq. > Back Freq.?				95 % Upper Tolerance Limit (UTL) Site Maximum > UTL for Background Data ?							Upper Ranks Majority are site?				Mann-Whitney/Gehan Ranks of Site > Back?				Student's or Satterthwaite T-test Site Mean > Back. Mean ?					Bartlett's Test for Equal Standard Deviations Site Standard Deviation =Background Std.Dev.?						
Assumptions Valid:		#ND & Pos.>=5 or use Fisher				Back. lognorm. or norm. If not, #b>18 for Quantile Test							# Site (s) in Top r				<40% ND or use Gehan				#s>2,#b>2,>=85% Pos; both norm/log					#s>2,#b>2, site & back both normal or both lognorm.						
Test Criterion:		P value <= 0.05 ?				Max >95% UTL (parametric). Or, Max >95% Quantile							P<=0.05 that #s>=k				P value <=0.05 ?				t-Value > t-Table					F-Value<=F-Table (Students T). If not, Satterthwaite						
Conclusion: Site > Back?	YN	Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev.	F	F	YN
Substance		Freq.	Freq.	Value		Mean[@]	Back.[@]	Value	Q	UTL	Max.				Value		Value				Mean[@]	Mean[@]	Value	Table		Distrib.	Distrib.	Back.[@]	Site[@]	Value	Table	
Aluminum	N	11/11	26/26		NA	14100	4700	2.8150	N*	27300	47600	NA	1	1	0.7027	N	1.0000			N	9.49	8.18			NA	lognor.	lognor.					NA
Antimony	NA	0/1	1/19		NA						18.3	NA	1	1	0.9500	N				NA		1.03			NA							NA
Arsenic	N	11/11	26/26		NA	3.55	1.42	2.8150	N*	7.53	11.9	NA	1	1	0.7027	N	0.9975			N	3.55	2.15			NA	normal	lognor.					NA
Barium	N	11/11	26/26		NA	48.6	20.9	2.8150	N*	107	983	NA	2	2	0.4880	N	0.9998			N	48.6	56.3			NA	normal	nonpar.					NA
Beryllium	N	10/11	25/26		NA	0.345	0.142	2.8150	N*	0.745	0.37	NA	14	6	0.9994	N	0.9999	Gehan	Test	N	0.345	0.161	-4.8553	1.6896	N	normal	normal	0.142	0.0873	3.6342	3.8444	Y
Cadmium	NA	5/10	4/26		NA	0.191					23.4	NA	1	1	0.7222	N	0.9951	Gehan	Test	N	0.191	0.939			NA	normal	nonpar.					NA
Calcium	N	9/9	17/22	1.0000	N	243	117	3.0310	N*	596	55400	NA	3	3	0.3426	N	0.9972	Gehan	Test	N	243	2660			NA	normal	nonpar.					NA
Chromium	N	11/11	26/26		NA	12.6	4.47	2.8150	N*	25.2	78.6	NA	1	1	0.7027	N	1.0000			N	12.6	7.14			NA	normal	nonpar.					NA
Cobalt	N	11/11	26/26		NA	1.24	0.653	2.8150	L*	21.8	6.3	NA	3	1	0.9788	N	0.9998			N	1.24	-0.313			NA	lognor.	lognor.					NA
Copper	N	10/10	10/11	1.0000	N	7.04	2.87	2.9110	N*	15.4	3040	NA	1	1	0.5238	N	0.9973			N	7.04	278			NA	normal	nonpar.					NA
Iron	N	11/11	26/26		NA	10800	5380	2.8150	N*	25900	127000	NA	1	1	0.7027	N	0.9999			N	10800	7600			NA	normal	nonpar.					NA
Lead	N	11/11	26/26		NA	7.7	3.08	2.8150	N*	16.4	1100	NA	2	2	0.4880	N	0.9997			N	7.7	45.1			NA	normal	nonpar.					NA
Magnesium	N	11/11	26/26		NA	949	417	2.8150	N*	2120	3470	NA	1	1	0.7027	N	1.0000			N	6.75	5.23			NA	lognor.	lognor.					NA
Manganese	N	11/11	26/26		NA	97.7	58.6	2.8150	N*	263	1100	NA	2	2	0.4880	N	0.9972			N	4.38	3.34			NA	lognor.	lognor.					NA
Mercury	N	9/11	2/26		NA	0.0298					0.18	NA	1	1	0.7027	N	0.9998	Gehan	Test	N	0.0298	0.0159			NA	lognor.	nonpar.					NA
Nickel	N	11/11	25/25		NA	7.05	2.66	2.8150	N*	14.5	56.8	NA	1	1	0.6944	N	1.0000			N	7.05	4.04			NA	normal	nonpar.					NA
Potassium	N	10/11	14/14	0.4400	N	454	207	2.8150	N*	1040	1830	NA	1	1	0.5600	N	0.9936			N	454	324			NA	normal	nonpar.					NA
Silver	NA	4/5	9/21		NA	0.229					389	NA	1	1	0.8077	N	0.8953	Gehan	Test	N	0.229	18.6			NA	nonpar.	nonpar.					NA
Sodium	N	6/6	3/10	1.0000	N	34.3	11.9	2.0150	N	60.2	1060	NA	1	1	0.6250	N	0.9971	Gehan	Test	N	34.3	111			NA	normal	nonpar.					NA
Thallium	NA	3/7	2/26	0.9961	N	0.216					3.5	NA	1	1	0.7879	N	0.9961	Gehan	Test	N	0.216	0.209			NA	lognor.	nonpar.					NA
Vanadium	N	11/11	26/26		NA	20	8.22	2.8150	N*	43.2	92	NA	1	1	0.7027	N	1.0000			N	2.9	1.64			NA	lognor.	lognor.					NA
Zinc	N	10/10	22/22		NA	16.7	5.57	2.9110	N*	33	3550	NA	1	1	0.6875	N	0.9998			N	16.7	166			NA	normal	nonpar.					NA
Benz(a)anthracene	NA	0/22	1/26	0.5417	N						45	NA				NA				NA		174			NA							NA
Benzaldehyde	NA	0/0	1/23		NA						45	NA				NA				NA		174			NA							NA
Benzo(a)pyrene	NA	0/22	1/26	0.5417	N						55	NA				NA				NA		175			NA							NA
Benzo(b)fluoranthene	NA	0/22	2/26	0.2881	N						88	NA				NA				NA		171			NA							NA
Bis(2-ethylhexyl) Phthalate	N	3/22	5/26	0.4519	N	175					190	NA	1	1	0.5417	N	0.1948	Gehan	Test	N	175	161			NA	nonpar.	nonpar.					NA
Chrysene	NA	0/22	2/26	0.2881	N						73	NA				NA				NA		170			NA							NA
Fluoranthene	NA	0/22	3/26	0.1503	N						45	NA				NA				NA		163			NA							NA
Pyrene	NA	0/22	2/26	0.2881	N						93	NA				NA				NA		171			NA							NA
1,2,4-Trimethylbenzene	NA	0/0	2/25		NA						4	NA				NA				NA		5.36			NA							NA
1,3,5-Trimethylbenzene	NA	0/0	1/25		NA						1	NA				NA				NA		5.48			NA							NA
2-Butanone	NA	0/3	1/26	0.8966	N						25	NA	1	1	0.8966	N				NA		6.33			NA							NA
Acetone	NA	0/0	2/4		NA						140	NA				NA				NA		39.8			NA							NA
Benzene	NA	0/0	1/26		NA						42	NA				NA				NA		6.98			NA							NA
Carbon Disulfide	NA	0/0	1/26		NA						4	NA				NA				NA		5.52			NA							NA
Ethylbenzene	NA	0/3	1/26	0.8966	N						2	NA				NA				NA		5.44			NA							NA
M,p-xylene	NA	0/0	2/26		NA						4	NA				NA				NA		5.37			NA							NA
Methyl Acetate	NA	0/0	1/26		NA						5	NA				NA				NA		5.63			NA							NA
O-xylene	NA	0/0	1/26		NA						1	NA				NA				NA		5.4			NA							NA

APPENDIX G0-1
BACKGROUND COMPARISON TESTS - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Name of Test: Question Posed:		Detection Freq: Z or Fisher Site Freq. > Back.Freq.?				95 % Upper Tolerance Limit (UTL) Site Maximum > UTL for Background Data ?						Upper Ranks Majority are site?				Mann-Whitney/Gehan: Ranks of Site > Back?				Student's or Satterthwaite T-test Site Mean > Back. Mean ?					Bartlett's Test for Equal Standard Deviations Site Standard Deviation =Background Std.Dev.?					
Assumptions Valid: Test Criterion:		#ND & Pos.>=5 or use Fisher P value <= 0.05 ?				Back. lognorm. or norm. If not, #b>18 for Quantile Test Max >95% UTL (parametric). Or, Max >95% Quantile						# Site (s) in Top r P<=0.05 that #s>=k				<40% ND or use Gehan P value <=0.05 ?				#s>2,#b>2,>=85% Pos; both norm/log t-Value > t-Table					#s>2,#b>2, site & back both normal or both lognorm. F-Value<=F-Table (Students T). If not, Satterthwaite					
Conclusion: Site > Back? YN		Back.	Site	P	YN	Back.	Std.Dev.	t	L,N	Back.	Site	YN	r	k	P	YN	P	Test	Used	YN	Back.	Site	t	t	YN	Back.	Site	Std.Dev.	Std.Dev	F	F	YN
Substance		Freq.	Freq.	Value		Mean@	Back.@	Value	Q	UTL	Max.				Value		Value				Mean@	Mean@	Value	Table		Distrib.	Distrib.	Back.@	Site@	Value	Table	
Toluene	NA	0/3	1/26	0.8966	N						10	NA	1	1	0.8965	N				NA		5.75			NA							NA
Xylene (Total)	NA	0/3	2/26	0.8005	N						5	NA	1	1	0.8966	N				NA		5.4			NA							NA

Notes: Units are mg/kg for inorganics, ug/kg for organics.
A statistical significance level (P value) of 0.05 is used for all tests that directly compare site to background. A two-sided significance level of 0.1 is used for Bartlett's test for equal variance.
UTL is the expected value for the upper 95 % quantile of the background population; there is an equal chance of the population's true 95 % quantile being either below or above this estimate.
For each test, a YES or NO decision is presented only if all assumptions are met. The overall decision (is site > background) for each chemical appears at the left and is based on four criteria:
(1) Overall decision is YES if any one of the Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is YES, regardless of other test results.
(2) Overall decision is NO if at least one of Mann-Whitney/Gehan, Upper Ranks Test, or T-Test is NO, and none of the aforementioned tests are YES.
(3) Overall decision is YES/NO if Z/Fisher Test is YES/NO, respectively, and other tests are NA. Z-test is treated as lowest priority since it relies on detection frequency, not magnitude of results.
(4) Overall decision is NA if all tests are NA. (Chemicals assigned NA are still included in human health risk-based screening and/or risk assessment.)

Abbreviations:

# NDs or # Pos.	Number of non-detected (ND) or positive (Pos.) results in data set, not including rejected data or blank-qualified data.
# s or # b	Number of site (s) or background (b) samples, not including rejected data or blank-qualified data.
s = b	Standard deviation of site results must not be different from the standard deviation of background results.
P value	Probability or significance level is defined as the chance of a false positive. If P <= 0.05 then test determines site > background with 95 % confidence.
L, N, or Q	UTL is based on 95 % upper limit (using t-value) when data are lognormal (L) or normal (N). Otherwise, an upper 95 % quantile (Q) is used if there are > 18 back. points.
% ND	Mann-Whitney test used if < 40% of data Non-Detected and detect. limits uniformly below the range of positive values. If not, the Gehan Test is used.
@	Mean and standard deviations are shown of log-transformed data when distributions are of this type; ie., if an (L) code appears for the UTL test or if site and background distributions both match lognormal. (Arithmetic mean and normal standard deviation are shown only for illustration in the event that these tests are NA.)
r,k	The upper ranks test calculates the probability that k or more samples from the top r ranks of the combined site and background data set are comprised of site data if both populations are in fact equal.

Appendix G1

Distributional Analysis Tables

APPENDIX G1-1
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests W-norm.	W-lognorm.	W-Table	Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean or Min. Var. Est	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
Diesel Range Organics	17	lognormal	0.6832	0.9005	0.892	Max	10	759	228	2070	870	870
Gasoline Range Organics	17	nonparametric	0.3444	0.4426	0.892	95%UCL-Cheby	4.4721	46.8	41.3	92.1	220	92.1
pH	38	assumed normal, log std.dev.<0.5	0.9311	0.8982	0.938	95%UCL-N	1.6871	0.658	6.03	6.21	7.1	6.21
TOC By Lloyd Kahn	38	lognormal	0.6706	0.9737	0.938	95%UCL-H	2.8004	1.36	15200	71600	191700	71600
Aluminum	60	nonparametric	0.8968	0.9658	0.981	95%UCL-Cheby	4.4721	3690	5880	8010	19500	8010
Antimony	40	nonparametric	0.7737	0.8208	0.94	95%UCL-Cheby	4.4721	0.178	0.239	0.364	0.92	0.364
Arsenic	60	nonparametric	0.7903	0.9653	0.981	95%UCL-Cheby	4.4721	2.78	3.03	4.64	10.7	4.64
Barium	60	lognormal	0.869	0.9896	0.981	95%UCL-H	2.0712	0.778	16.3	27.2	81.5	27.2
Beryllium	56	nonparametric	0.8672	0.9518	0.98	95%UCL-Cheby	4.4721	0.143	0.185	0.271	0.6	0.271
Cadmium	51	nonparametric	0.5967	0.9007	0.978	95%UCL-Cheby	4.4721	0.0447	0.0484	0.0764	0.24	0.0764
Calcium	60	nonparametric	0.5154	0.951	0.981	97.5%UCL-Cheby	6.3246	637	416	937	3880	937
Chromium	60	lognormal	0.8779	0.9905	0.981	95%UCL-H	1.9557	0.634	5.82	8.36	20.9	8.36
Cobalt	60	nonparametric	0.9441	0.9633	0.981	95%UCL-Cheby	4.4721	0.98	1.53	2.1	3.9	2.1
Copper	53	lognormal	0.7427	0.9894	0.979	95%UCL-H	2.0425	0.726	3.29	5.26	21.1	5.26
Iron	60	nonparametric	0.9276	0.9755	0.981	95%UCL-Cheby	4.4721	2890	5080	6750	14200	6750
Lead	60	lognormal	0.8306	0.9898	0.981	Mean-N	1.6711	15.5	17.7	21.1	71	17.7
Magnesium	60	lognormal	0.5973	0.9816	0.981	95%UCL-H	2.1382	0.854	398	727	4170	727
Manganese	60	lognormal	0.7977	0.9865	0.981	95%UCL-H	2.2295	0.951	44.3	91.8	312	91.8
Mercury	59	nonparametric	0.6016	0.94	0.981	95%UCL-Cheby	4.4721	0.0597	0.0478	0.0826	0.4	0.0826
Nickel	60	nonparametric	0.8226	0.97	0.981	95%UCL-Cheby	4.4721	2.68	3.47	5.02	14.2	5.02
Potassium	52	lognormal	0.8158	0.9892	0.979	95%UCL-H	1.8806	0.509	294	383	1170	383
Selenium	59	nonparametric	0.7325	0.9368	0.981	95%UCL-Cheby	4.4721	0.233	0.334	0.469	1.5	0.469
Silver	51	nonparametric	0.5021	0.9234	0.978	95%UCL-Cheby	4.4721	0.398	0.261	0.511	2.3	0.511
Sodium	35	nonparametric	0.4235	0.8006	0.934	97.5%UCL-Cheby	6.3246	637	334	1010	3820	1010
Thallium	60	nonparametric	0.7943	0.8503	0.981	Max	4.4721	0.117	0.177	0.244	0.21	0.21
Vanadium	60	nonparametric	0.6307	0.9625	0.981	95%UCL-Cheby	4.4721	11	13.1	19.5	70.7	19.5
Zinc	56	nonparametric	0.8927	0.9678	0.98	95%UCL-Cheby	4.4721	11	15.9	22.4	53.2	22.4
Aroclor-1260	60	nonparametric	0.4986	0.6192	0.981	95%UCL-Cheby	4.4721	54.3	42.9	74.2	220	74.2
1,2-Dichlorobenzene	39	nonparametric	0.6297	0.8644	0.939	Max	4.4721	7.29	8.83	14.1	3	3
1,3-Dichlorobenzene	38	nonparametric	0.607	0.8269	0.938	Max	4.4721	7.35	8.79	14.1	3	3
1,4-Dichlorobenzene	38	nonparametric	0.607	0.8269	0.938	Max	4.4721	7.35	8.79	14.1	3	3
Benz(a)anthracene	60	nonparametric	0.2447	0.6892	0.981	Max	4.4721	471	284	555	210	210
Benzaldehyde	35	nonparametric	0.6685	0.9233	0.934	95%UCL-Cheby	4.4721	312	289	525	1500	525
Benzo(a)pyrene	60	nonparametric	0.2934	0.7147	0.981	95%UCL-Cheby	4.4721	484	312	591	1300	591
Benzo(b)fluoranthene	60	nonparametric	0.2371	0.6859	0.981	Max	4.4721	469	283	554	430	430
Benzo(g,h,i)perylene	60	nonparametric	0.2523	0.6739	0.981	95%UCL-Cheby	4.4721	470	301	572	590	572
Benzo(k)fluoranthene	60	nonparametric	0.227	0.6021	0.981	Max	4.4721	469	289	560	180	180
Bis(2-ethylhexyl) Phthalate	59	nonparametric	0.6666	0.9293	0.981	97.5%UCL-Cheby	6.3246	716	575	1160	2800	1160
Chrysene	60	nonparametric	0.2646	0.7552	0.981	Max	4.4721	471	292	564	410	410
Fluoranthene	60	nonparametric	0.2259	0.6618	0.981	Max	4.4721	468	281	552	280	280
Indeno(1,2,3-cd)pyrene	60	nonparametric	0.231	0.6295	0.981	Max	4.4721	469	289	560	230	230
Phenanthrene	60	nonparametric	0.2406	0.673	0.981	Max	4.4721	470	284	556	77	77
Pyrene	60	nonparametric	0.2245	0.6541	0.981	Max	4.4721	468	283	553	280	280
Total PAH (soil)	59	nonparametric	0.4674	0.7415	0.981	95%UCL-Cheby	4.4721	655	453	834	2320	834
1,2,4-Trichlorobenzene	38	nonparametric	0.6055	0.8258	0.938	Max	4.4721	7.32	8.87	14.2	2	2
1,2,4-Trimethylbenzene	39	nonparametric	0.6337	0.8488	0.939	Max	4.4721	7.3	8.82	14	5	5
1,3,5-Trimethylbenzene	39	nonparametric	0.6299	0.8667	0.939	Max	4.4721	7.29	8.82	14	4	4
2-Butanone	60	nonparametric	0.4085	0.7291	0.981	95%UCL-Cheby	4.4721	13.9	10.7	18.7	100	18.7
2-Hexanone	60	assumed normal, log std.dev.<0.5	0.4564	0.6536	0.981	95%UCL-N	1.6711	5.95	7.75	9.03	20	9.03
4-Methyl-2-pentanone	60	assumed normal, log std.dev.<0.5	0.4834	0.7145	0.981	Max	1.6711	6.06	7.69	8.99	3	3
Acetone	30	nonparametric	0.4544	0.6308	0.927	97.5%UCL-Cheby	6.3246	177	75.6	280	920	280
Carbon Disulfide	60	assumed normal, log std.dev.<0.5	0.4692	0.6483	0.981	95%UCL-N	1.6711	4.63	7.33	8.33	13	8.33
Chlorobenzene	60	nonparametric	0.4798	0.6741	0.981	Max	4.4721	6.05	7.74	11.2	1	1
Ethylbenzene	60	assumed normal, log std.dev.<0.5	0.4887	0.7197	0.981	Max	1.6711	6.07	7.67	8.98	2	2
Isopropylbenzene	39	nonparametric	0.6354	0.8637	0.939	Max	4.4721	7.31	8.81	14	2	2
M,p-xylene	39	nonparametric	0.6025	0.7996	0.939	Max	4.4721	7.23	8.91	14.1	4	4
Methyl Acetate	39	nonparametric	0.5685	0.8965	0.939	97.5%UCL-Cheby	6.3246	42.9	25.7	69.1	210	69.1
O-xylene	39	nonparametric	0.6354	0.8637	0.939	Max	4.4721	7.31	8.81	14	2	2

APPENDIX G1-1
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests			Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est.	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
			W-norm.	W-lognorm.	W-Table							
Styrene	60	assumed normal, log std.dev.<0.5	0.4887	0.7197	0.981	Max	1.6711	6.07	7.67	8.98	2	2
Toluene	60	nonparametric	0.4894	0.7022	0.981	Max	4.4721	6.09	7.63	11.1	2	2
Xylene (Total)	60	assumed normal, log std.dev.<0.5	0.4495	0.6309	0.981	Max	1.6711	5.99	7.8	9.1	6	6

Notes:

Units are in mg/kg for inorganics and ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
Arithmetic mean includes positive detections and non-detected results (detection limits are divided by two).
Statistical distribution of data is determined using Shapiro-Wilk test for n <= 50, Shapiro-Francia test for n > 50. Statistical significance level is 0.05.
A normal distribution is assumed if the test statistic W-norm. is >= than the reference value (W-table).
A lognormal distribution is assumed if the test statistic W-lognorm. is >= the reference value (W-table), and W-norm is < W-table.
A normal distribution is assumed if neither distribution passes the Shapiro test and the standard deviation of log transformed data is < 0.5. Otherwise, if neither distribution passes and the log standard deviation is >= 0.5, a nonparametric is assumed.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Because evaluation may not be accurate, only the arithmetic mean and the maximum are presented.
Parameters listed for EPC calculation are as follows for each type of EPC statistic:
95%UCL-N: Parameters used in EPC Calculation consist of the t-coefficient, the standard deviation, the arithmetic mean, and the t-distribution upper 95% confidence limit.
95%UCL-H: Parameters used in EPC Calculation consist of the H-coefficient, the standard deviation of log-transformed data, the antilog of mean of log-transformed data, and the H-distribution upper 95% confidence limit.
99%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 99% confidence limit.
97.5%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 97.5% confidence limit.
95%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 95% confidence limit.
99%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 99% confidence limit.
97.5%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 97.5% confidence limit.
95%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 95% confidence limit.

APPENDIX G1-2
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP TOTAL SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests W-norm.	W-lognorm.	W-Table	Type of EPC Calc	Coefficient for H0 95 (Lognorm.) or T0 95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
Aluminum	86	nonparametric	0.5871	0.9746	0.985	95%UCL-Cheby	4.4721	5790	5890	8680	47600	8680
Antimony	59	nonparametric	0.1227	0.6975	0.981	95%UCL-Cheby	4.4721	2.36	0.495	1.87	18.3	1.87
Arsenic	86	nonparametric	0.7387	0.9666	0.985	95%UCL-Cheby	4.4721	2.63	2.77	4.04	11.9	4.04
Barium	86	nonparametric	0.1555	0.9248	0.985	95%UCL-Cheby	4.4721	105	32	82.8	983	82.8
Beryllium	82	nonparametric	0.891	0.969	0.985	95%UCL-Cheby	4.4721	0.128	0.177	0.241	0.6	0.241
Cadmium	77	nonparametric	0.0805	0.6249	0.984	97.5%UCL-Cheby	6.3246	2.66	0.349	2.27	23.4	2.27
Calcium	82	nonparametric	0.1051	0.9458	0.985	97.5%UCL-Cheby	6.3246	6110	1020	5280	55400	5280
Chromium	86	nonparametric	0.4259	0.9696	0.985	95%UCL-Cheby	4.4721	8.88	7.07	11.4	78.6	11.4
Cobalt	86	nonparametric	0.8841	0.972	0.985	95%UCL-Cheby	4.4721	1.15	1.46	2.02	6.3	2.02
Copper	64	nonparametric	0.0873	0.7439	0.982	97.5%UCL-Cheby	6.3246	380	51.3	351	3040	351
Iron	86	nonparametric	0.1969	0.9244	0.985	95%UCL-Cheby	4.4721	13500	5840	12400	127000	12400
Lead	86	nonparametric	0.1306	0.9674	0.985	Mean-N	1.663	118	26	47.2	1100	26
Magnesium	86	lognormal	0.5715	0.9881	0.985	95%UCL-H	2.2006	0.975	317	643	4170	643
Manganese	86	lognormal	0.3933	0.9891	0.985	95%UCL-H	2.3061	1.09	38.6	91.3	1100	91.3
Mercury	85	nonparametric	0.5577	0.888	0.985	95%UCL-Cheby	4.4721	0.0549	0.0381	0.0647	0.4	0.0647
Nickel	85	nonparametric	0.3319	0.963	0.985	95%UCL-Cheby	4.4721	6.35	3.64	6.72	56.8	6.72
Potassium	66	nonparametric	0.6353	0.9645	0.982	95%UCL-Cheby	4.4721	262	333	478	1830	478
Selenium	85	nonparametric	0.6401	0.877	0.985	95%UCL-Cheby	4.4721	0.201	0.299	0.396	1.5	0.396
Silver	72	nonparametric	0.0788	0.6986	0.983	97.5%UCL-Cheby	6.3246	45.8	5.62	39.8	389	39.8
Sodium	45	nonparametric	0.4522	0.8278	0.945	99%UCL-Cheby	10	587	284	1160	3820	1160
Thallium	86	nonparametric	0.2291	0.7533	0.985	95%UCL-Cheby	4.4721	0.377	0.187	0.369	3.5	0.369
Vanadium	86	nonparametric	0.5494	0.9671	0.985	95%UCL-Cheby	4.4721	13.3	11.9	18.3	92	18.3
Zinc	78	nonparametric	0.0849	0.8718	0.985	97.5%UCL-Cheby	6.3246	401	58.3	345	3550	345
Aroclor-1260	86	nonparametric	0.4075	0.5257	0.985	95%UCL-Cheby	4.4721	46.6	35.4	57.9	220	57.9
1,2-Dichlorobenzene	64	assumed normal, log std.dev.<0.5	0.4956	0.7607	0.982	Max	1.6694	5.9	7.59	8.82	3	3
1,3-Dichlorobenzene	63	assumed normal, log std.dev.<0.5	0.4756	0.7348	0.982	Max	1.6698	5.91	7.54	8.78	3	3
1,4-Dichlorobenzene	63	assumed normal, log std.dev.<0.5	0.4756	0.7348	0.982	Max	1.6698	5.91	7.54	8.78	3	3
Benz(a)anthracene	86	nonparametric	0.2025	0.6155	0.985	Max	4.4721	396	250	441	210	210
Benzaldehyde	58	nonparametric	0.5116	0.8126	0.981	95%UCL-Cheby	4.4721	248	243	389	1500	389
Benzo(a)pyrene	86	nonparametric	0.2433	0.6385	0.985	95%UCL-Cheby	4.4721	408	270	467	1300	467
Benzo(b)fluoranthene	86	nonparametric	0.1993	0.6346	0.985	Max	4.4721	394	249	439	430	430
Benzo(g,h,i)perylene	86	assumed normal, log std.dev.<0.5	0.2056	0.5802	0.985	95%UCL-N	1.663	395	264	335	590	335
Benzo(k)fluoranthene	86	assumed normal, log std.dev.<0.5	0.183	0.5136	0.985	Max	1.663	394	256	327	180	180
Bis(2-ethylhexyl) Phthalate	85	nonparametric	0.564	0.8677	0.985	95%UCL-Cheby	4.4721	626	448	752	2800	752
Chrysene	86	nonparametric	0.2249	0.6966	0.985	Max	4.4721	397	255	446	410	410
Fluoranthene	86	nonparametric	0.1977	0.6441	0.985	Max	4.4721	394	246	436	280	280
Indeno(1,2,3-cd)pyrene	86	assumed normal, log std.dev.<0.5	0.1866	0.5393	0.985	Max	1.663	394	256	327	230	230
Phenanthrene	86	nonparametric	0.1941	0.5772	0.985	Max	4.4721	395	253	443	77	77
Pyrene	86	nonparametric	0.1897	0.6137	0.985	Max	4.4721	393	249	439	280	280
1,2,4-Trichlorobenzene	63	assumed normal, log std.dev.<0.5	0.4733	0.7233	0.982	Max	1.6698	5.89	7.59	8.83	2	2
1,2,4-Trimethylbenzene	64	nonparametric	0.5183	0.7539	0.982	Max	4.4721	5.97	7.47	10.8	5	5
1,3,5-Trimethylbenzene	64	nonparametric	0.5158	0.7736	0.982	Max	4.4721	5.94	7.52	10.8	4	4
2-Butanone	86	nonparametric	0.3645	0.6818	0.985	95%UCL-Cheby	4.4721	12	9.34	15.1	100	15.1
2-Hexanone	83	assumed normal, log std.dev.<0.5	0.4104	0.6358	0.985	95%UCL-N	1.6636	5.16	7.15	8.09	20	8.09
4-Methyl-2-pentanone	86	assumed normal, log std.dev.<0.5	0.4278	0.683	0.985	Max	1.663	5.16	7.07	7.99	3	3
Acetone	34	nonparametric	0.4506	0.638	0.933	97.5%UCL-Cheby	6.3246	168	71.3	254	920	254
Benzene	86	assumed normal, log std.dev.<0.5	0.3993	0.6132	0.985	95%UCL-N	1.663	6.34	7.58	8.72	42	8.72
Carbon Disulfide	86	assumed normal, log std.dev.<0.5	0.4349	0.6577	0.985	95%UCL-N	1.663	3.97	6.78	7.49	13	7.49
Chlorobenzene	86	assumed normal, log std.dev.<0.5	0.4255	0.6474	0.985	Max	1.663	5.15	7.1	8.03	1	1
Ethylbenzene	86	assumed normal, log std.dev.<0.5	0.4424	0.7058	0.985	Max	1.663	5.19	7	7.93	2	2
Isopropylbenzene	65	assumed normal, log std.dev.<0.5	0.497	0.7607	0.982	Max	1.669	5.87	7.54	8.75	2	2
M,p-xylene	65	nonparametric	0.4984	0.7431	0.982	Max	4.4721	5.88	7.49	10.8	4	4
Methyl Acetate	65	nonparametric	0.4109	0.7915	0.982	97.5%UCL-Cheby	6.3246	34.5	17.6	44.7	210	44.7
O-xylene	65	nonparametric	0.5144	0.7705	0.982	Max	4.4721	5.92	7.45	10.7	2	2
Styrene	86	assumed normal, log std.dev.<0.5	0.4323	0.6873	0.985	Max	1.663	5.17	7.06	7.98	2	2
Toluene	86	assumed normal, log std.dev.<0.5	0.4414	0.6776	0.985	95%UCL-N	1.663	5.19	7.06	7.99	10	7.99
Xylene (Total)	86	assumed normal, log std.dev.<0.5	0.4204	0.6376	0.985	Max	1.663	5.15	7.08	8	6	6

APPENDIX G1-2
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP TOTAL SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests			Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev. Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
Substance			W-norm.	W-lognorm.	W-Table							

Notes:

Units are in mg/kg for inorganics and ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
Arithmetic mean includes positive detections and non-detected results (detection limits are divided by two).
Statistical distribution of data is determined using Shapiro-Wilk test for n <= 50, Shapiro-Francia test for n > 50. Statistical significance level is 0.05.
A normal distribution is assumed if the test statistic W-norm. is >= than the reference value (W-table).
A lognormal distribution is assumed if the test statistic W-lognorm. is >= the reference value (W-table), and W-norm is < W-table.
A normal distribution is assumed if neither distribution passes the Shapiro test and the standard deviation of log transformed data is < 0.5. Otherwise, if neither distribution passes and the log standard deviation is >= 0.5, a nonparametric is assumed.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Because evaluation may not be accurate, only the arithmetic mean and the maximum are presented.
Parameters listed for EPC calculation are as follows for each type of EPC statistic:
95%UCL-N: Parameters used in EPC Calculation consist of the t-coefficient, the standard deviation, the arithmetic mean, and the t-distribution upper 95% confidence limit.
95%UCL-H: Parameters used in EPC Calculation consist of the H-coefficient, the standard deviation of log-transformed data, the antilog of mean of log-transformed data, and the H-distribution upper 95% confidence limit.
99%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 99% confidence limit.
97.5%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 97.5% confidence limit.
95%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 95% confidence limit.
99%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 99% confidence limit.
97.5%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 97.5% confidence limit.
95%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 95% confidence limit.

APPENDIX G1-3
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests			Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est.	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
			W-norm.	W-lognorm.	W-Table							
Aluminum	26	lognormal	0.4931	0.9738	0.92	95%UCL-H	2.4102	0.943	3570	8770	47600	8770
Antimony	19	nonparametric	0.2464	0.2928	0.901	97.5%UCL-Cheby	6.3246	4.18	1.03	7.1	18.3	7.1
Arsenic	26	lognormal	0.558	0.9396	0.92	95%UCL-H	2.0873	0.649	1.67	2.71	11.9	2.71
Barium	26	nonparametric	0.2646	0.8304	0.92	97.5%UCL-Cheby	6.3246	190	56.3	292	983	292
Beryllium	26	normal	0.9695	0.8665	0.92	95%UCL-N	1.7081	0.0873	0.161	0.19	0.37	0.19
Cadmium	26	nonparametric	0.2093	0.4	0.92	97.5%UCL-Cheby	6.3246	4.58	0.939	6.62	23.4	6.62
Calcium	22	nonparametric	0.2331	0.8613	0.911	99%UCL-Cheby	10	11800	2660	27800	55400	27800
Chromium	26	nonparametric	0.3514	0.9078	0.92	95%UCL-Cheby	4.4721	14.8	7.14	20.1	78.6	20.1
Cobalt	26	lognormal	0.7615	0.9727	0.92	95%UCL-H	2.6614	1.14	0.731	2.57	6.3	2.57
Copper	11	nonparametric	0.3406	0.7501	0.85	Max	10	916	278	3040	3040	3040
Iron	26	nonparametric	0.2619	0.8367	0.92	97.5%UCL-Cheby	6.3246	24400	7600	37900	127000	37900
Lead	26	nonparametric	0.2115	0.7042	0.92	Mean-N	1.7081	215	45.1	117	1100	45.1
Magnesium	26	lognormal	0.4301	0.9414	0.92	95%UCL-H	2.5406	1.05	188	552	3470	552
Manganese	26	lognormal	0.3733	0.9444	0.92	95%UCL-H	2.8997	1.31	28.1	142	1100	142
Mercury	26	nonparametric	0.2499	0.4061	0.92	95%UCL-Cheby	4.4721	0.0337	0.0159	0.0455	0.18	0.0455
Nickel	25	nonparametric	0.3094	0.8864	0.918	97.5%UCL-Cheby	6.3246	11.1	4.04	18.1	56.8	18.1
Potassium	14	nonparametric	0.4711	0.8132	0.874	95%UCL-Cheby	4.4721	443	324	853	1830	853
Silver	21	nonparametric	0.2273	0.5378	0.908	97.5%UCL-Cheby	6.3246	84.9	18.6	136	389	136
Sodium	10	nonparametric	0.3727	0.6218	0.842	Max	10	334	111	1170	1060	1060
Thallium	26	nonparametric	0.2161	0.3297	0.92	95%UCL-Cheby	4.4721	0.672	0.209	0.798	3.5	0.798
Vanadium	26	lognormal	0.3826	0.9288	0.92	95%UCL-H	2.3712	0.91	5.14	12	92	12
Zinc	22	nonparametric	0.2252	0.7185	0.911	97.5%UCL-Cheby	6.3246	756	166	1190	3550	1190
Benz(a)anthracene	26	assumed normal, log std.dev.<0.5	0.4	0.3054	0.92	Max	1.7081	27	174	183	45	45
Benzaldehyde	23	assumed normal, log std.dev.<0.5	0.389	0.3068	0.914	Max	1.7171	28.6	174	184	45	45
Benzo(a)pyrene	26	assumed normal, log std.dev.<0.5	0.4166	0.3239	0.92	Max	1.7081	25.1	175	183	55	55
Benzo(b)fluoranthene	26	assumed normal, log std.dev.<0.5	0.5016	0.427	0.92	Max	1.7081	30.1	171	181	88	88
Bis(2-ethylhexyl) Phthalate	26	assumed normal, log std.dev.<0.5	0.5682	0.5277	0.92	95%UCL-N	1.7081	44.2	161	176	190	176
Chrysene	26	assumed normal, log std.dev.<0.5	0.4768	0.3984	0.92	Max	1.7081	34.4	170	181	73	73
Fluoranthene	26	assumed normal, log std.dev.<0.5	0.4865	0.4386	0.92	Max	1.7081	44.6	163	178	45	45
Pyrene	26	assumed normal, log std.dev.<0.5	0.4954	0.4083	0.92	Max	1.7081	31	171	181	93	93
1,2,4-Trimethylbenzene	25	assumed normal, log std.dev.<0.5	0.8469	0.5825	0.918	Max	1.7109	1.23	5.36	5.78	4	4
1,3,5-Trimethylbenzene	25	assumed normal, log std.dev.<0.5	0.8303	0.561	0.918	Max	1.7109	1.24	5.48	5.9	1	1
2-Butanone	26	assumed normal, log std.dev.<0.5	0.3653	0.577	0.92	95%UCL-N	1.7081	3.88	6.33	7.63	25	7.63
Acetone	4	*nonparametric	0.6462	0.7393	0.748	Max			39.8		140	140
Benzene	26	assumed normal, log std.dev.<0.5	0.2866	0.4855	0.92	95%UCL-N	1.7081	7.18	6.98	9.39	42	9.39
Carbon Disulfide	26	normal (skip log test)	0.9479	0.9568	0.92	Max	1.7081	0.815	5.52	5.79	4	4
Ethylbenzene	26	assumed normal, log std.dev.<0.5	0.8864	0.7325	0.92	Max	1.7081	1.03	5.44	5.79	2	2
M,p-xylene	26	assumed normal, log std.dev.<0.5	0.8452	0.5781	0.92	Max	1.7081	1.2	5.37	5.77	4	4
Methyl Acetate	26	normal (skip log test)	0.9264	0.9358	0.92	Max	1.7081	0.804	5.63	5.9	5	5
O-xylene	26	assumed normal, log std.dev.<0.5	0.8141	0.5445	0.92	Max	1.7081	1.17	5.4	5.8	1	1
Toluene	26	assumed normal, log std.dev.<0.5	0.7951	0.8808	0.92	95%UCL-N	1.7081	1.15	5.75	6.13	10	6.13
Xylene (Total)	26	assumed normal, log std.dev.<0.5	0.8141	0.5445	0.92	Max	1.7081	1.17	5.4	5.8	5	5

Notes:

Units are in mg/kg for inorganics and ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
Arithmetic mean includes positive detections and non-detected results (detection limits are divided by two).
Statistical distribution of data is determined using Shapiro-Wilk test for n <= 50, Shapiro-Francia test for n > 50. Statistical significance level is 0.05.
A normal distribution is assumed if the test statistic W-norm. is >= than the reference value (W-table).
A lognormal distribution is assumed if the test statistic W-lognorm. is >= the reference value (W-table), and W-norm is < W-table.
A normal distribution is assumed if neither distribution passes the Shapiro test and the standard deviation of log transformed data is < 0.5. Otherwise, if neither distribution passes and the log standard deviation is >= 0.5, a nonparametric is assumed.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Because evaluation may not be accurate, only the arithmetic mean and the maximum are presented.
Parameters listed for EPC calculation are as follows for each type of EPC statistic:
95%UCL-N: Parameters used in EPC Calculation consist of the t-coefficient, the standard deviation, the arithmetic mean, and the t-distribution upper 95% confidence limit.
95%UCL-H: Parameters used in EPC Calculation consist of the H-coefficient, the standard deviation of log-transformed data, the antilog of mean of log-transformed data, and the H-distribution upper 95% confidence limit.
99%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 99% confidence limit.
97.5%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 97.5% confidence limit.

APPENDIX G1-3
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP SUBSURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used In EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests W-norm.	W-lognorm.	W-Table	Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est.	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration

95%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 95% confidence limit.
99%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 99% confidence limit.
97.5%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 97.5% confidence limit.
95%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 95% confidence limit.

APPENDIX G1-4
REPRESENTATIVE CONCENTRATION AND STATISTICAL DISTRIBUTION OF COPCs - WASTE OIL DUMP GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

						Parameter Used in EPC Calculation						
Substance	Number of Sample Results	Statistical Distribution of Site Data	Results of Shapiro-Wilk or Shapiro-Francia Distribution Tests			Type of EPC Calc	Coefficient for H0.95 (Lognorm.) or T0.95 (Normal) or Chebychev	Std. Dev., Log Std. Dev. or Min. Var. Estimate	Arithmetic Mean, Antilog Log Mean, or Min. Var. Est.	Upper Confidence Limit (UCL) on Mean	Maximum Positive Site Concentration	RME Exposure Point Concentration
			W-norm.	W-lognorm.	W-Table							
Aluminum	5	lognormal	0.7207	0.8922	0.762	Max	4.5979	0.928	1880	24400	8220	8220
Arsenic	8	nonparametric	0.4168	0.4168	0.818	95%UCL-Cheby	4.4721	7.04	3.99	15.1	21.4	15.1
Barium	11	lognormal	0.8294	0.9281	0.85	95%UCL-H	2.0469	0.394	51.3	71.6	117	71.6
Cadmium	12	assumed normal, log std.dev.<0.5	0.3215	0.3215	0.859	95%UCL-N	1.7959	0.165	0.398	0.483	0.92	0.483
Calcium	12	lognormal	0.8382	0.9444	0.859	95%UCL-Chebmv	4.4721	19300	15100	40100	40500	40100
Chromium	3	*normal	0.8687	0.79	0.767	Max			92.4		147	147
Iron	12	lognormal	0.6663	0.9714	0.859	Max	10	28700	11300	94200	49900	49900
Lead	12	nonparametric	0.3425	0.426	0.859	Mean-N	1.7959	19.2	7.81	17.7	68.6	7.81
Magnesium	12	normal (skip log test)	0.8613	0.9686	0.859	95%UCL-N	1.7959	5310	6710	9460	19900	9460
Manganese	12	nonparametric	0.6427	0.8502	0.859	97.5%UCL-Cheby	6.3246	189	121	466	641	466
Nickel	3	*normal	0.8817	0.7811	0.767	Max			29.9		49.1	49.1
Potassium	12	lognormal	0.6376	0.8762	0.859	95%UCL-H	2.3507	0.657	2270	4480	10900	4480
Silver	9	nonparametric	0.7498	0.7351	0.829	Max	4.4721	0.944	1.76	3.16	3.1	3.1
Sodium	12	lognormal	0.6908	0.932	0.859	95%UCL-H	2.3818	0.678	6520	13400	30200	13400
Vanadium	3	*nonparametric	0.75	0.75	0.767	Max			3.53		9.9	9.9
2-Methylnaphthalene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	36.8	13.1	80.3	130	80.3
4-Methylphenol	11	nonparametric	0.3393	0.3393	0.85	95%UCL-Cheby	4.4721	11.9	6.09	22.1	42	22.1
Acenaphthene	12	assumed normal, log std.dev.<0.5	0.4447	0.5763	0.859	95%UCL-N	1.7959	1.96	2.92	3.93	9	3.93
Bis(2-ethylhexyl) Phthalate	12	assumed normal, log std.dev.<0.5	0.4418	0.5372	0.859	95%UCL-N	1.7959	2.26	3.23	4.4	18	4.4
Dibenzofuran	12	assumed normal, log std.dev.<0.5	0.3215	0.3215	0.859	95%UCL-N	1.7959	0.433	2.63	2.85	4	2.85
Fluorene	12	assumed normal, log std.dev.<0.5	0.3519	0.401	0.859	95%UCL-N	1.7959	2.76	3.25	4.68	12	4.68
Naphthalene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	36.8	13.1	80.3	130	80.3
Phenanthrene	12	nonparametric	0.3447	0.3917	0.859	95%UCL-Cheby	4.4721	3.62	3.5	8.18	15	8.18
1,2,4-Trimethylbenzene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	48.9	14.6	104	170	104
1,2-Dichloroethene (cis)	12	nonparametric	0.6138	0.6751	0.859	95%UCL-Cheby	4.4721	0.793	0.917	1.94	3	1.94
1,3,5-Trimethylbenzene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	21.2	6.63	45.4	74	45.4
2-Butanone	12	assumed normal, log std.dev.<0.5	0.3215	0.3215	0.859	95%UCL-N	1.7959	1.01	2.79	3.32	6	3.32
Benzene	12	nonparametric	0.484	0.4733	0.859	97.5%UCL-Cheby	6.3246	3.56	2	8.5	11	8.5
Ethylbenzene	12	nonparametric	0.3701	0.4811	0.859	97.5%UCL-Cheby	6.3246	19.4	6.75	42.2	68	42.2
Isopropylbenzene	12	nonparametric	0.3617	0.4303	0.859	95%UCL-Cheby	4.4721	1.58	1	3.04	6	3.04
M,p-xylene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	107	31.3	226	370	226
Methylcyclohexane	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	5.05	1.96	11.2	18	11.2
O-xylene	12	nonparametric	0.3215	0.3215	0.859	97.5%UCL-Cheby	6.3246	48.9	14.6	104	170	104
Styrene	12	nonparametric	0.3701	0.4367	0.859	95%UCL-Cheby	4.4721	1.29	0.917	2.59	5	2.59
Tetrachloroethene	12	nonparametric	0.3215	0.3215	0.859	95%UCL-Cheby	4.4721	1.3	0.875	2.55	5	2.55
Toluene	12	nonparametric	0.3272	0.4223	0.859	97.5%UCL-Cheby	6.3246	34.5	10.6	73.5	120	73.5
Xylene (Total)	12	nonparametric	0.3215	0.3215	0.859	99%UCL-Cheby	10	156	45.5	495	540	495

Notes:

Units are in ug/L .
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
Arithmetic mean includes positive detections and non-detected results (detection limits are divided by two).
Statistical distribution of data is determined using Shapiro-Wilk test for n <= 50, Shapiro-Francia test for n > 50. Statistical significance level is 0.05.
A normal distribution is assumed if the test statistic W-norm. is >= than the reference value (W-table).
A lognormal distribution is assumed if the test statistic W-lognorm. is >= the reference value (W-table), and W-norm is < W-table.
A normal distribution is assumed if neither distribution passes the Shapiro test and the standard deviation of log transformed data is < 0.5. Otherwise, if neither distribution passes and the log standard deviation is >= 0.5, a nonparametric is assumed.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Because evaluation may not be accurate, only the arithmetic mean and the maximum are presented.
Parameters listed for EPC calculation are as follows for each type of EPC statistic:
95%UCL-N: Parameters used in EPC Calculation consist of the t-coefficient, the standard deviation, the arithmetic mean, and the t-distribution upper 95% confidence limit.
95%UCL-H: Parameters used in EPC Calculation consist of the H-coefficient, the standard deviation of log-transformed data, the antilog of mean of log-transformed data, and the H-distribution upper 95% confidence limit.
99%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 99% confidence limit.
97.5%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 97.5% confidence limit.
95%UCL-Chebmv: Parameters used in EPC Calculation consist of the coefficient multiplier, the minimum variance unbiased estimate of the standard deviation and mean, and the chebychev 95% confidence limit.
99%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 99% confidence limit.
97.5%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 97.5% confidence limit.
95%UCL-Cheby: Parameters used in EPC Calculation consist of the coefficient multiplier, the standard deviation and arithmetic mean, and the nonparametric chebychev 95% confidence limit.

Appendix G2

Comparison of UCL Estimates

APPENDIX G2-1
COMPARISON OF UCL ESTIMATES - WASTE OIL DUMP SURFACE SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Number of Sample Results	Statistical Distribution of Site Data	Type of EPC Selected	Rationale for EPC Selected	Log Standard Deviation	Maximum	95% UCL t-distribution	95% UCL H-distribution	85% UCL Chebychev min. variance	90% UCL Chebychev min. variance	95% UCL Chebychev	97.5% UCL Chebychev	99% UCL Chebychev
Diesel Range Organics	17	lognormal	Max	Max<99%UCL-Chebmv	2.053	870	322	3080	1050	2070	521	657	925
Gasoline Range Organics	17	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.528	220	61.1	49.9	60.1	87.8	92.1	113	155
pH	38	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.116	7.1	6.21	6.23	6.54	7.17	6.51	6.71	7.1
TOC By Lloyd Kahn	38	lognormal	95%UCL-H	1<=lgsd<1.5,N>24	1.358	191700	45800	71600	98900	153000	66000	79600	106000
Aluminum	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.689	19500	6680	7250	8700	12000	8010	8890	10600
Antimony	40	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.765	0.92	0.286	0.315	0.386	0.57	0.364	0.416	0.52
Arsenic	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.884	10.7	3.83	3.95	4.91	7.2	4.64	5.3	6.62
Barium	60	lognormal	95%UCL-H	lgsd<1.0	0.778	81.5	25	27.2	33.1	47	30.9	34.8	42.6
Beryllium	56	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.799	0.6	0.217	0.237	0.291	0.418	0.271	0.306	0.376
Cadmium	51	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.66	0.24	0.0589	0.0565	0.0679	0.0941	0.0764	0.088	0.111
Calcium	60	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.325	3880	554	760	1010	1670	784	937	1240
Chromium	60	lognormal	95%UCL-H	lgsd<1.0	0.634	20.9	8.02	8.36	9.92	13.4	9.66	10.7	12.9
Cobalt	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.762	3.9	1.74	1.97	2.4	3.38	2.1	2.33	2.8
Copper	53	lognormal	95%UCL-H	lgsd<1.0	0.726	21.1	5.07	5.26	6.38	9.01	6.43	7.33	9.11
Iron	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.595	14200	5700	5970	7030	9380	6750	7440	8810
Lead	60	lognormal	Mean-N	IEUBK Uses AVG	0.893	71	21.1	23.7	29.4	43.3	26.7	30.4	37.8
Magnesium	60	lognormal	95%UCL-H	lgsd<1.0	0.854	4170	720	727	898	1310	955	1110	1420
Manganese	60	lognormal	95%UCL-H	lgsd<1.0	0.951	312	79.7	91.8	115	172	102	117	147
Mercury	59	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.916	0.4	0.0608	0.0596	0.0744	0.11	0.0826	0.097	0.126
Nickel	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.79	14.2	4.05	4.45	5.44	7.75	5.02	5.66	6.93
Potassium	52	lognormal	95%UCL-H	lgsd<1.0	0.509	1170	381	383	446	583	456	506	605
Selenium	59	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.597	1.5	0.384	0.387	0.456	0.61	0.469	0.526	0.637
Silver	51	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.971	2.3	0.355	0.326	0.411	0.628	0.511	0.614	0.819
Sodium	35	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	2	3820	516	2880	2910	5650	815	1010	1410
Thallium	60	nonparametric	Max	Max<95%UCL-Cheby	0.642	0.21	0.202	0.208	0.247	0.335	0.244	0.272	0.328
Vanadium	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.633	70.7	15.5	15.2	18	24.4	19.5	22.1	27.3
Zinc	56	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.765	53.2	18.3	20.6	25.1	35.7	22.4	25.2	30.5
Aroclor-1260	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.767	220	54.6	46.6	56.7	80.1	74.2	87.2	113
1,2-Dichlorobenzene	39	nonparametric	Max	Max<95%UCL-Cheby	0.575	3	10.8	10.3	12.3	16.9	14.1	16.2	20.5
1,3-Dichlorobenzene	38	nonparametric	Max	Max<95%UCL-Cheby	0.556	3	10.8	10.1	12	16.5	14.1	16.3	20.7
1,4-Dichlorobenzene	38	nonparametric	Max	Max<95%UCL-Cheby	0.556	3	10.8	10.1	12	16.5	14.1	16.3	20.7
Benz(a)anthracene	60	nonparametric	Max	Max<95%UCL-Cheby	0.647	210	385	300	357	485	555	668	891
Benzaldehyde	35	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.843	1500	378	388	481	732	525	622	816
Benzo(a)pyrene	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.837	1300	416	327	388	526	591	707	936
Benzo(b)fluoranthene	60	nonparametric	Max	Max<95%UCL-Cheby	0.616	430	384	295	349	469	554	666	888
Benzo(g,h,i)perylene	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.565	590	402	308	360	475	572	684	907
Benzo(k)fluoranthene	60	nonparametric	Max	Max<95%UCL-Cheby	0.549	180	390	292	340	446	560	672	894
Bis(2-ethylhexyl) Phthalate	59	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.042	2800	731	773	983	1510	992	1160	1510
Chrysene	60	nonparametric	Max	Max<95%UCL-Cheby	0.659	410	394	313	373	509	564	677	900
Fluoranthene	60	nonparametric	Max	Max<95%UCL-Cheby	0.574	280	382	267	336	445	552	663	886
Indeno(1,2,3-cd)pyrene	60	nonparametric	Max	Max<95%UCL-Cheby	0.549	230	390	291	340	446	560	672	894
Phenanthrene	60	nonparametric	Max	Max<95%UCL-Cheby	0.624	77	386	297	352	474	556	669	892
Pyrene	60	nonparametric	Max	Max<95%UCL-Cheby	0.559	280	384	286	335	441	553	665	887
Total PAH (soil)	59	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.804	2320	595	494	606	886	834	992	1310
1,2,4-Trichlorobenzene	38	nonparametric	Max	Max<95%UCL-Cheby	0.559	2	10.9	10.2	12.2	16.8	14.2	16.4	20.7
1,2,4-Trimethylbenzene	39	nonparametric	Max	Max<95%UCL-Cheby	0.617	5	10.8	10.6	12.7	17.8	14	16.2	20.5
1,3,5-Trimethylbenzene	39	nonparametric	Max	Max<95%UCL-Cheby	0.571	4	10.8	10.2	12.2	16.8	14	16.2	20.5
2-Butanone	60	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.668	100	13.7	11.5	13.7	18.8	16.7	22	28.7
2-Hexanone	60	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.443	20	9.03	8.28	9.43	11.9	11.2	12.6	15.4
4-Methyl-2-pentanone	60	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.48	3	8.99	8.32	9.55	12.2	11.2	12.6	15.5
Acetone	30	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.661	920	131	160	168	310	220	280	400
Carbon Disulfide	60	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.385	13	8.33	7.82	8.77	10.8	10	11.1	13.3
Chlorobenzene	60	nonparametric	Max	Max<95%UCL-Cheby	0.506	1	9.04	8.51	9.83	12.7	11.2	12.7	15.5
Ethylbenzene	60	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.494	2	8.98	8.35	9.62	12.4	11.2	12.6	15.5
Isopropylbenzene	39	nonparametric	Max	Max<95%UCL-Cheby	0.594	2	10.8	10.4	12.4	17.2	14	16.2	20.5
M,p-xylene	39	nonparametric	Max	Max<95%UCL-Cheby	0.533	4	10.9	10.1	12	16.3	14.1	16.2	20.5
Methyl Acetate	39	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.213	210	37.2	39.2	49.3	82.1	58.3	69.1	94.3
O-xylene	39	nonparametric	Max	Max<95%UCL-Cheby	0.594	2	10.8	10.4	12.4	17.2	14	16.2	20.5
Styrene	60	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.494	2	8.98	8.35	9.62	12.4	11.2	12.6	15.5
Toluene	60	nonparametric	Max	Max<95%UCL-Cheby	0.526	2	8.94	8.46	9.81	12.6	11.1	12.6	15.5
Xylene (Total)	60	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.441	6	9.1	8.33	9.48	11.9	11.3	12.7	15.5

Notes:

Units are mg/kg for Inorganics, ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
EPC is selected based on appropriate rationale from EPA guidance.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Evaluation may not be accurate.

APPENDIX G2-2
COMPARISON OF UCL ESTIMATES - WASTE OIL DUMP TOTAL SOIL
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Number of Sample Results	Statistical Distribution of Site Data	Type of EPC Selected	Rationale for EPC Selected	Log Standard Deviation	Maximum	95% UCL t-distribution	95% UCL H-distribution	95% UCL Chebychev min. variance	99% UCL Chebychev min. variance	95% UCL Chebychev	97.5% UCL Chebychev	99% UCL Chebychev
Aluminum	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.781	47600	6930	7050	8470	11600	8680	9840	12100
Antimony	59	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.987	18.3	1.01	0.326	0.411	0.623	1.87	2.44	3.57
Arsenic	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.823	11.9	3.24	3.29	3.99	5.55	4.04	4.56	5.61
Barium	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.891	983	50.9	29.8	36.7	52.1	82.8	104	146
Beryllium	82	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.789	0.6	0.201	0.22	0.266	0.368	0.241	0.267	0.319
Cadmium	77	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.049	23.4	0.854	0.0776	0.0987	0.149	1.71	2.27	3.38
Calcium	82	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.636	55400	2140	970	1410	2480	4030	5260	7760
Chromium	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.743	78.6	8.67	7.99	9.53	12.9	11.4	13.1	16.7
Cobalt	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.915	8.3	1.67	1.95	2.4	3.44	2.02	2.25	2.71
Copper	84	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.241	3040	131	10	13.1	21.1	263	351	526
Iron	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.785	127000	8270	6010	7230	9950	12400	15100	20400
Lead	86	nonparametric	Mean-N	IEUBK Uses AVG	1.326	1100	47.2	26.4	35.5	57.2	83	107	153
Magnesium	86	lognormal	95%UCL-H	lgsd<1.0	0.974	4170	631	643	803	1170	830	961	1220
Manganese	86	lognormal	95%UCL-H	1<=lgsd<1.5,N>24	1.086	1100	95.2	91.3	117	176	134	160	211
Mercury	85	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.978	0.4	0.048	0.0439	0.0549	0.0803	0.0647	0.0758	0.0977
Nickel	85	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.913	56.8	4.79	4.25	5.24	7.51	6.72	7.99	10.5
Potassium	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.667	1830	367	373	434	589	478	537	656
Selenium	85	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.51	1.5	0.335	0.326	0.371	0.467	0.396	0.437	0.517
Silver	72	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.337	389	14.6	0.527	0.708	1.16	29.8	39.8	59.6
Sodium	45	nonparametric	99%UCL-Cheby	Wt>Wno&Wlg,2<=lgsd<3	2.348	3820	431	3750	4270	8650	676	838	1160
Thallium	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.717	3.5	0.254	0.187	0.222	0.299	0.369	0.444	0.594
Vanadium	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.796	92	14.3	13.9	16.8	23.2	18.3	20.9	26.2
Zinc	78	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.181	3550	134	26.5	34.5	53.9	261	345	512
Aroclor-1260	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.67	220	43.8	35.7	42	55.7	57.9	67.2	85.7
1,2-Dichlorobenzene	64	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.473	3	8.82	8.17	9.34	11.9	10.9	12.2	15
1,3-Dichlorobenzene	63	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.457	3	8.78	8.07	9.2	11.6	10.9	12.2	15
1,4-Dichlorobenzene	63	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.457	3	8.78	8.07	9.2	11.6	10.9	12.2	15
Benz(a)anthracene	86	nonparametric	Max	Max<95%UCL-Cheby	0.566	210	321	256	295	378	441	520	677
Benzaldehyde	58	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.68	1600	298	280	335	462	389	449	569
Benzo(a)pyrene	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.561	1300	344	274	314	402	467	549	710
Benzo(b)fluoranthene	86	nonparametric	Max	Max<95%UCL-Cheby	0.543	430	320	252	289	367	439	518	674
Benzo(g,h,i)perylene	86	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.484	590	335	263	297	369	455	534	690
Benzo(k)fluoranthene	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.467	180	327	252	284	352	446	525	681
Bis(2-ethylhexyl) Phthalate	85	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.965	2800	561	518	646	940	752	878	1130
Chrysene	86	nonparametric	Max	Max<95%UCL-Cheby	0.592	410	326	264	306	395	446	526	683
Fluoranthene	86	nonparametric	Max	Max<95%UCL-Cheby	0.563	280	316	251	288	368	436	515	671
Indeno(1,2,3-cd)pyrene	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.467	230	327	252	284	351	446	525	681
Phenanthrene	86	nonparametric	Max	Max<95%UCL-Cheby	0.525	77	324	255	290	366	443	522	679
Pyrene	86	nonparametric	Max	Max<95%UCL-Cheby	0.505	280	320	248	282	354	439	517	673
1,2,4-Trichlorobenzene	63	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.461	2	8.83	8.15	9.29	11.7	10.9	12.3	15
1,2,4-Trimethylbenzene	64	nonparametric	Max	Max<95%UCL-Cheby	0.556	5	8.71	8.37	9.75	12.8	10.8	12.2	14.9
1,3,5-Trimethylbenzene	64	nonparametric	Max	Max<95%UCL-Cheby	0.525	4	8.76	8.29	9.59	12.4	10.8	12.2	14.9
2-Butanone	86	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.598	100	11.5	9.62	11.1	14.4	15.1	17.5	22.3
2-Hexanone	83	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.393	20	8.09	7.46	8.28	10	9.68	10.7	12.8
4-Methyl-2-pentanone	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.414	3	7.99	7.41	8.25	10	9.55	10.6	12.6
Acetone	34	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.627	920	120	134	152	279	200	254	359
Benzene	86	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.436	42	8.72	7.67	8.8	10.8	10.6	11.9	14.4
Carbon Disulfide	86	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.342	13	7.49	7.08	7.75	9.14	8.7	9.49	11.1
Chlorobenzene	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.436	1	8.03	7.53	8.42	10.3	9.58	10.6	12.7
Ethylbenzene	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.442	2	7.93	7.41	8.3	10.2	9.5	10.5	12.6
Isopropylbenzene	65	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.483	2	8.75	8.15	9.33	11.9	10.8	12.1	14.8
M,p-xylene	65	nonparametric	Max	Max<95%UCL-Cheby	0.504	4	8.71	8.19	9.42	12.1	10.8	12.1	14.8
Methyl Acetate	65	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1	210	24.8	18.6	23.5	35.4	36.8	44.7	60.4
O-xylene	65	nonparametric	Max	Max<95%UCL-Cheby	0.535	2	8.67	8.25	9.55	12.4	10.7	12.1	14.8
Styrene	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.425	2	7.98	7.43	8.29	10.1	9.55	10.6	12.6
Toluene	86	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.454	10	7.99	7.53	8.46	10.4	9.56	10.6	12.7
Xylene (Total)	86	assumed normal, log std.dev.<0.5	Max	Max<95%UCL-N	0.435	6	8	7.5	8.39	10.3	9.56	10.6	12.6

Notes:

Units are mg/kg for inorganics, ug/kg for organics.
Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.
EPC is selected based on appropriate rationale from EPA guidance.
-- - Parameter not estimated because distributional shape uncertain for small n.
* Distributional shape based on n<5. Evaluation may not be accurate.

APPENDIX G2-3
COMPARISON OF UCL ESTIMATES - WASTE OIL DUMP GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Substance	Number of Sample Results	Statistical Distribution of Site Data	Type of EPC Selected	Rationale for EPC Selected	Log Standard Deviation	Maximum	95% UCL t-distribution	95% UCL H-distribution	95% UCL Chebychev min. variance	99% UCL Chebychev min. variance	95% UCL Chebychev	97.5% UCL Chebychev	99% UCL Chebychev
Aluminum	5	lognormal	Max	Max<95%UCL-H	0.928	8220	5740	24400	7300	13100	8990	11600	16700
Arsenic	8	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.94	21.4	8.7	10.4	7.7	13.5	15.1	19.7	28.9
Barium	11	lognormal	95%UCL-H	lgsd<1.0	0.394	117	69	71.6	84.7	121	88.9	103	130
Cadmium	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.279	0.92	0.483	0.463	0.536	0.712	0.61	0.698	0.873
Calcium	12	lognormal	95%UCL-Chebmv	1<=lgsd<1.5,N<25	1.138	40500	21200	48500	40100	70900	31500	38700	53000
Chromium	3	*normal	Max	n<5,use Max	1.79	147	220	1.73239E+15	513	1010	288	368	529
Iron	12	lognormal	Max	Max<99%UCL-Chebmv	1.921	49900	16300	250000	48300	94200	27400	35000	50200
Lead	12	nonparametric	Mean-N	IEUBK Uses AVG	1.032	68.6	17.7	12.5	11.5	20	32.6	42.8	63.1
Magnesium	12	normal (skip log test)	95%UCL-N	Wno>=Wt;use normal	0.804	19900	9460	13100	14200	23500	13600	16400	22000
Manganese	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.321	641	219	483	315	575	365	466	666
Nickel	3	*normal	Max	n<5,use Max	2.721	49.1	73.6	2.04601E+32	266	533	96.9	125	180
Potassium	12	lognormal	95%UCL-H	lgsd<1.0	0.657	10900	4330	4480	5200	8220	6460	7930	10800
Silver	9	nonparametric	Max	Max<95%UCL-Cheby	0.53	3.1	2.34	2.75	3.16	4.89	3.16	3.74	4.9
Sodium	12	lognormal	95%UCL-H	lgsd<1.0	0.678	30200	12100	13400	15400	24500	17800	21800	29600
Vanadium	3	*nonparametric	Max	n<5,use Max	1.93	9.9	12.8	6.05589E+15	13.2	26	17.8	23.7	35.4
2-Methylnaphthalene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.141	130	32.2	19.9	16.4	29	60.6	80.3	119
4-Methylphenol	11	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.851	42	12.6	9.65	9.89	16.6	22.1	28.8	42
Acenaphthene	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.474	9	3.93	3.9	4.64	6.85	5.45	6.5	8.59
Bis(2-ethylhexyl) Phthalate	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.43	18	4.4	4.11	4.89	7.07	6.15	7.36	9.75
Dibenzofuran	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.136	4	2.85	2.82	3.08	3.65	3.18	3.42	3.88
Fluorene	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.463	12	4.68	4.17	4.97	7.3	6.81	8.29	11.2
Naphthalene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.141	130	32.2	19.9	16.4	29	60.6	80.3	119
Phenanthrene	12	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.527	15	5.38	4.62	5.49	8.29	8.18	10.1	14
1,2,4-Trimethylbenzene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.683	170	40	29.3	10	19	77.8	104	156
1,2-Dichloroethene (cis)	12	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.629	3	1.33	1.38	1.61	2.53	1.94	2.36	3.21
1,3,5-Trimethylbenzene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.443	74	17.6	11.1	5.98	11.1	34	45.4	67.9
2-Butanone	12	assumed normal, log std.dev.<0.5	95%UCL-N	lgsd<0.5,use normal	0.253	6	3.32	3.21	3.68	4.8	4.1	4.64	5.71
Benzene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.143	11	3.85	4.69	3.86	6.83	6.6	8.5	12.3
Ethylbenzene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.564	68	16.8	21.5	9.33	17.5	31.8	42.2	62.8
Isopropylbenzene	12	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.727	6	1.82	1.45	1.64	2.65	3.04	3.89	5.56
M,p-xylene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.907	370	86.6	82.5	16.6	32.2	169	226	339
Methylcyclohexane	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.034	18	4.58	2.91	2.68	4.66	8.48	11.2	16.5
O-xylene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.683	170	40	29.3	10	19	77.8	104	156
Styrene	12	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.677	5	1.59	1.31	1.51	2.4	2.59	3.28	4.65
Tetrachloroethene	12	nonparametric	95%UCL-Cheby	Wt>Wno&Wlg,0.5<=lgsd	0.665	5	1.55	1.21	1.4	2.22	2.55	3.25	4.63
Toluene	12	nonparametric	97.5%UCL-Cheby	Wt>Wno&Wlg,1<=lgsd<2	1.596	120	28.4	22.8	9.26	17.5	55.1	73.5	110
Xylene (Total)	12	nonparametric	99%UCL-Cheby	Wt>Wno&Wlg,2<=lgsd<3	2.016	540	126	143	21.3	41.9	247	330	495

Notes:

Units are ug/L.

Number of sample results excludes rejected data or blank-qualified data. Duplicates are consolidated into one result. Non-detected results are treated as present at one-half the detection limit in all calculations.

EPC is selected based on appropriate rationale from EPA guidance.

-- - Parameter not estimated because distributional shape uncertain for small n.

* Distributional shape based on n<5. Evaluation may not be accurate.

Appendix G3

Chemical-specific Parameters for Groundwater

APPENDIX G3
CHEMICAL SPECIFIC PARAMETERS FOR GROUNDWATER
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

COPC	Molecular Weight (g/mol)	Henry's Law at 25°C (l*atm/mol)	Henry's Law at 45°C (l*atm/mol)	Permeability Coefficient (Kp)	Tau (hr)	T* (hr)	B	FA	Diffusivity in Air (cm2/sec)	Diffusivity in Water (cm2/sec)
1,1,1-TRICHLOROETHANE	133.41	1.72E-02	2.88E-01	1.30E-02	6.00E-01	1.43E+00	1.00E-01	1.00E+00	7.80E-02	8.80E-06
1,2,4-TRIMETHYLBENZENE	120.19	6.16E-03	9.70E-02	8.40E-02	5.00E-01	1.19E+00	4.00E-01	1.00E+00	7.50E-02	7.10E-06
1,2-DICHLOROETHENE (CIS)	96.94	4.07E-03	6.75E-02	7.70E-03	3.70E-01	8.80E-01	0.00E+00	1.00E+00	7.36E-02	1.13E-05
1,3,5-TRIMETHYLBENZENE	120.19	8.77E-03	1.58E-01	6.10E-02	5.00E-01	1.19E+00	3.00E-01	1.00E+00	7.50E-02	7.10E-06
2-METHYLNAPHTHALENE	142.19	5.18E-04	1.54E-02	8.90E-02	6.60E-01	1.58E+00	4.00E-01	1.00E+00	4.80E-02	7.84E-06
4-METHYLPHENOL	108.14	1.00E-06	1.11E-05	7.70E-03	4.30E-01	1.03E+00	0.00E+00	1.00E+00	6.90E-02	9.30E-06
BENZENE	78.12	5.56E-03	9.13E-02	1.50E-02	2.90E-01	7.00E-01	1.00E-01	1.00E+00	8.80E-02	9.80E-06
BIS(2-ETHYLHEXYL) PHTHALATE	390.62	1.02E-07	6.72E-07	2.50E-02	1.66E+01	3.99E+01	2.00E-01	8.00E-01	3.51E-02	3.66E-06
CHLOROFORM	119.38	3.67E-03	5.96E-02	6.80E-03	5.00E-01	1.19E+00	0.00E+00	1.00E+00	1.04E-01	1.00E-05
DIBENZOFURAN	168.2	2.13E-04	2.13E-04	9.50E-02	9.20E-01	2.21E+00	5.00E-01	1.00E+00	6.01E-02	6.30E-06
NAPHTHALENE	128.19	4.83E-04	8.71E-03	4.70E-02	5.60E-01	1.34E+00	2.00E-01	1.00E+00	5.90E-02	7.50E-06
PENTACHLOROPHENOL	266.4	2.44E-08	7.12E-07	3.90E-01	3.33E+00	1.38E+01	2.50E+00	9.00E-01	5.60E-02	6.10E-06
TETRACHLOROETHENE	165.83	1.84E-02	2.56E-01	3.30E-02	9.10E-01	2.18E+00	2.00E-01	1.00E+00	7.20E-02	8.20E-06
TOLUENE	92.13	6.63E-03	1.08E-01	3.10E-02	3.50E-01	8.40E-01	1.00E-01	1.00E+00	8.70E-02	8.60E-06
VINYL CHLORIDE	62.5	2.71E-02	5.49E-01	5.60E-03	2.40E-01	5.70E-01	0.00E+00	1.00E+00	1.06E-01	1.23E-06
XYLENE (TOTAL)	106.16	6.00E-03	9.70E-02	5.30E-02	4.20E-01	1.01E+00	2.00E-01	1.00E+00	7.00E-02	7.80E-06

Notes:

Permeability constant and other dermal absorption parameters (Tau, T*, B, and FA) from tables and equations in EPA, 2001.

Henry's Law constant at 45 degrees converted using data and formulas presented in the following references:

Sander, Rolf, 1999. Compilation of Henry's Law Constants for Inorganic and Organic Species of Potential Importance in Environmental Chemistry. Internet Website: Http://www.mpch-mainz.mpg.de/~sander/res/henry.html. Air Chemistry Department. Max-Planck Institute of Chemistry. PO Box 3060. 55020 Mainz, Germany. Version 3: April 8.

EPA, 2001. Fact Sheet. Correcting the Henry's Law Constant for Soil Temperature. from website: http://www.epa.gov/superfund/programs/risk/airmodel/factsheet.pdf

Appendix G4

Blood Lead Modeling Results

LEAD MODEL FOR WINDOWS Version 1.0

==========
Model Version: 1.0
User Name: Megan Ritchie
Date: 9/5/2003
Site Name: NASA WFF Waste Oil Dump
Operable Unit: --
Run Mode: Site Risk Assessment

Water Data

==========
The time step used in this model run: 1 - Every 4 Hours (6 times a day).

******Air******

Indoor Air Pb Concentration: 30.000 percent of outdoor.
Other Air Parameters:

Age	Time Outdoors (hours)	Ventilation Rate (m^3/day)	Lung Absorption (%)	Outdoor Air Pb Conc ug Pb/m^3
.5-1	1.000	2.000	32.000	0.100
1-2	2.000	3.000	32.000	0.100
2-3	3.000	5.000	32.000	0.100
3-4	4.000	5.000	32.000	0.100
4-5	4.000	5.000	32.000	0.100
5-6	4.000	7.000	32.000	0.100
6-7	4.000	7.000	32.000	0.100

******Diet******

Age	Diet Intake(ug/day)
.5-1	5.530
1-2	5.780
2-3	6.490
3-4	6.240
4-5	6.010
5-6	6.340
6-7	7.000

******Drinking Water******

Water Consumption:

Age	Water (L/day)
.5-1	0.200
1-2	0.500
2-3	0.520
3-4	0.530

4-5	0.550
5-6	0.580
6-7	0.590

Drinking Water Concentration: 7.810 ug Pb/L

******Soil& Dust******

Multiple Source Analysis Used
Average multiple source concentration: 150.000 ug/g

Mass fraction of outdoor soil to indoor dust conversion factor: 0.700
Outdoor airborne lead to indoor household dust lead concentration: 100.000
Use alternate indoor dust Pb sources? No

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
.5-1	200.000	150.000
1-2	200.000	150.000
2-3	200.000	150.000
3-4	200.000	150.000
4-5	200.000	150.000
5-6	200.000	150.000
6-7	200.000	150.000

******Alternate Intake******

Age	Alternate (ug Pb/day)
.5-1	0.000
1-2	0.000
2-3	0.000
3-4	0.000
4-5	0.000
5-6	0.000
6-7	0.000

******Maternal Contribution: Infant Model******

Maternal Blood Concentration: 2.500 ug Pb/dL

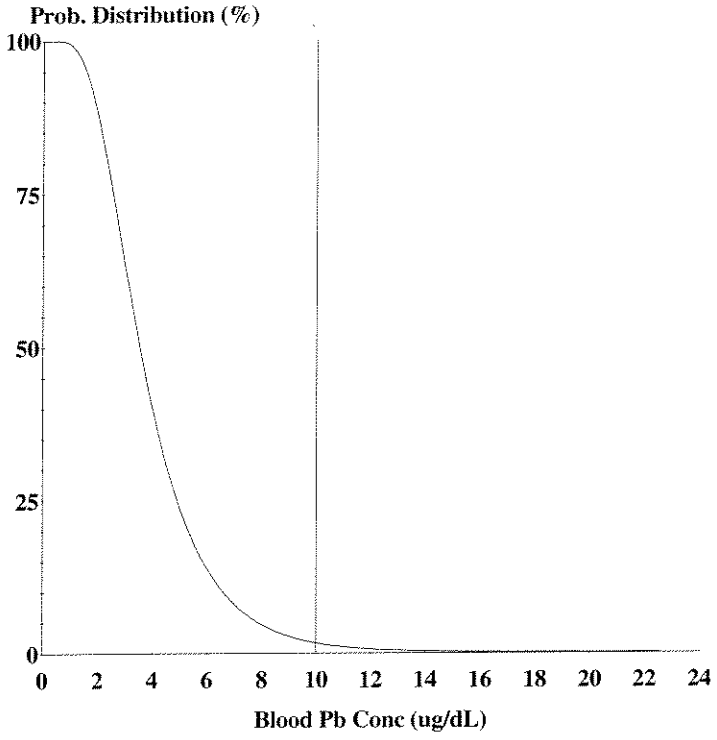
****
CALCULATED BLOOD LEAD AND LEAD UPTAKES:

****

Year	Air (ug/dL)	Diet (ug/day)	Alternate (ug/day)	Water (ug/day)
5-1	0.021	2.543	0.000	0.718
1-2	0.034	2.628	0.000	1.776
2-3	0.062	2.982	0.000	1.866

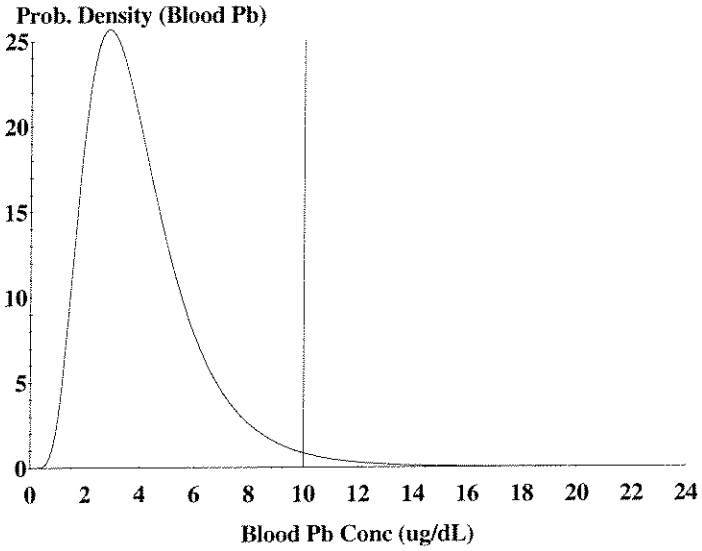
3-4	0.067	2.902	0.000	1.925
4-5	0.067	2.848	0.000	2.035
5-6	0.093	3.025	0.000	2.161
6-7	0.093	3.351	0.000	2.206

Year	Soil+Dust (ug/day)	Total (ug/day)	Blood (ug/dL)
.5-1	4.046	7.329	4.0
1-2	6.354	10.792	4.5
2-3	6.421	11.332	4.2
3-4	6.499	11.394	4.0
4-5	4.904	9.854	3.4
5-6	4.444	9.724	3.0
6-7	4.211	9.861	2.8



Cutoff = 10.000 ug/dl
Geo Mean = 3.688
% Above = 1.562

Age Range = 0 to 84 months
Time Step = Every 4 Hours
Run Mode = Site Risk Assessment



Cutoff = 10.000 ug/dl
Geo Mean = 3.688
% Above = 1.562
% Below = 98.438

Age Range = 0 to 84 months
Time Step = Every 4 Hours
Run Mode = Site Risk Assessment

Appendix G5

Non-cancer Risk Tables

TABLE G5-1.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	4.51E-08	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	5.81E-08	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-2.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	6.37E-11	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-3.RME
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	7.87E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.23E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-4.RME
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	3.33E-09	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-5.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	8.10E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	3.57E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-6.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	9.52E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-7.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.89E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	3.73E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-8.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	4.08E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-9.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.43E-07	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	3.57E-04
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	3.04E-06	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	6.08E-04
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	3.56E-08	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												9.64E-04
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.42E-08	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	2.36E-04
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	3.01E-07	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	1.51E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	4.59E-08	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.74E-03
												Total of Routes	2.71E-03

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-10.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.01E-10	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	4.29E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	5.03E-11	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-11.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT CONSTRUCTION WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	5.48E-06	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	1.37E-02
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.17E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	2.33E-02
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.37E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												3.70E-02
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	5.66E-08	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	9.43E-04
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.20E-06	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	6.02E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.84E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												6.97E-03
												Total of Routes	4.40E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-12.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT CONSTRUCTION WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.77E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	3.77E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	4.43E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-13.RME
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.49E-05	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	6.23E-02
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	5.30E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	1.06E-01
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	6.22E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.68E-01
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	5.42E-07	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	9.04E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.15E-05	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	5.77E-02
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.76E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												6.68E-02
												Total of Routes	2.35E-01

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-13.CTE
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT CONTACT WITH SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.33E-06	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	2.08E-02
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.77E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	3.54E-02
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.08E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												5.63E-02
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	7.25E-08	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	1.21E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.54E-06	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	7.72E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.35E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												8.93E-03
												Total of Routes	6.52E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-14.RME
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.05E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.24E-07	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.63E-09	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-14.CTE
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	3.53E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	7.50E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	8.81E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-15.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.56E-06	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	6.40E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	5.45E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	1.09E-02
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	6.40E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.73E-02
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.69E-08	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	1.45E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.85E-06	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	9.25E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.82E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.07E-02
												Total of Routes	2.80E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-15.CTE
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT CONTACT WITH SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.56E-07	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	2.14E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.82E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	3.65E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.14E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												5.79E-03
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.30E-09	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	1.38E-04
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.77E-07	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	8.84E-04
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.70E-08	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.02E-03
												Total of Routes	6.81E-03

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-16.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	3.01E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	6.41E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	7.52E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-16.CTE
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.31E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.79E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	3.27E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-17.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	9.15E-07	mg/kg-day	4.00E-04	mg/kg-day	N/A	N/A	2.29E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.95E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	3.89E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.28E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												6.18E-03
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	9.07E-08	mg/kg-day	6.00E-05	mg/kg-day	N/A	N/A	1.51E-03
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.93E-06	mg/kg-day	2.00E-04	mg/kg-day	N/A	N/A	9.65E-03
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.95E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	(Total)												1.12E-02
												Total of Routes	1.73E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-18.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.29E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.75E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	3.23E-10	mg/kg-day	--	--	--	mg/kg-day	--
	(Total)												--
												Total of Routes	--

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-19.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT CONSTRUCTION WORKER CONTACT WITH GROUNDWATER DURING CONSTRUCTION ACTIVITIES
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Contact with Groundwater During Construction Activities
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	2.08E-04	mg/kg-day	2.70E-01	mg/kg-day	N/A	N/A	7.72E-04
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	3.83E-07	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	1.28E-03
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	7.46E-06	mg/kg-day	7.50E-05	mg/kg-day	N/A	N/A	9.94E-02
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.27E-03	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	4.22E-03
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.98E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.18E-05	mg/kg-day	9.60E-04	mg/kg-day	N/A	N/A	1.23E-02
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.93E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.47E-02
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	6.17E-06	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	1.23E-03
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.78E-05	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	8.90E-04
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.29E-05	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	6.44E-03
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.44E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	7.19E-03
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	3.10E-04	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	6.19E-03
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	9.91E-05	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	1.98E-03
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	3.97E-06	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	9.93E-04
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	3.98E-06	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	3.98E-04
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	7.48E-05	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	3.74E-04
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	8.88E-04	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	4.44E-03
	(Total)												1.63E-01
												Total of Routes	1.63E-01

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-20.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	3.41E-06	mg/kg-day	--	--	--	mg/kg-day	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.02E-06	mg/kg-day	--	--	--	mg/kg-day	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	7.81E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	9.44E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	3.31E-06	mg/kg-day	--	--	8.60E-04	mg/kg-day	3.85E-03
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.02E-05	mg/kg-day	--	--	1.70E-03	mg/kg-day	5.97E-03
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	5.63E-06	mg/kg-day	--	--	1.70E-03	mg/kg-day	3.31E-03
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	9.75E-07	mg/kg-day	--	--	8.60E-03	mg/kg-day	1.13E-04
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	5.59E-07	mg/kg-day	--	--	1.40E-01	mg/kg-day	4.00E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	8.86E-06	mg/kg-day	--	--	1.14E-01	mg/kg-day	7.77E-05
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	4.72E-05	mg/kg-day	--	--	2.80E-02	mg/kg-day	1.69E-03
	(Total)												1.50E-02
												Total of Routes	1.50E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-21.RME
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT TAP WATER CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	7.06E-01	mg/kg-day	1.00E+00	mg/kg-day	N/A	N/A	7.06E-01
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	1.30E-03	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	4.32E+00
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.26E-02	mg/kg-day	3.00E-03	mg/kg-day	N/A	N/A	4.21E+00
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	4.29E+00	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	1.43E+01
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	6.71E-04	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	4.00E-02	mg/kg-day	2.40E-02	mg/kg-day	N/A	N/A	1.67E+00
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	6.90E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	3.45E-01
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.90E-03	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	3.80E-01
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	3.78E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.89E-02
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.45E-04	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	1.22E-01
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	6.90E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	3.45E-01
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	8.93E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	1.79E-01
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	3.90E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	7.80E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	7.30E-04	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	1.83E-01
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	2.19E-04	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	2.19E-02
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	6.31E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	3.16E-02
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	4.25E-02	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	2.13E-01
	(Total)												2.71E+01
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	3.61E-03	mg/kg-day	2.70E-01	mg/kg-day	N/A	N/A	1.34E-02
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	6.64E-06	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	2.21E-02
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.29E-04	mg/kg-day	7.50E-05	mg/kg-day	N/A	N/A	1.72E+00
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.19E-02	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	7.31E-02
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	3.43E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	2.05E-04	mg/kg-day	9.60E-04	mg/kg-day	N/A	N/A	2.13E-01
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.05E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	3.53E-01
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.36E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	2.71E-02
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	4.36E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	2.18E-02
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	3.15E-04	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	1.58E-01
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	3.43E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.72E-01
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	7.50E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	1.50E-01
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	2.38E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	4.76E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	8.67E-05	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	2.17E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	9.75E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	9.75E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.68E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	8.40E-03
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	2.07E-02	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.03E-01
	(Total)												3.12E+00
												Total of Routes	3.02E+01

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-21.CTE
CALCULATION OF NON-CANCER HAZARDS - CHILD RESIDENT TAP WATER CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	4.05E-01	mg/kg-day	1.00E+00	mg/kg-day	N/A	N/A	4.05E-01
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	7.44E-04	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	2.48E+00
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	7.24E-03	mg/kg-day	3.00E-03	mg/kg-day	N/A	N/A	2.41E+00
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.46E+00	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	8.20E+00
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	3.85E-04	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	2.30E-02	mg/kg-day	2.40E-02	mg/kg-day	N/A	N/A	9.57E-01
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	3.96E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.98E-01
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.09E-03	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	2.18E-01
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	2.17E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.08E-02
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.40E-04	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	7.02E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	3.96E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.98E-01
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	5.12E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	1.02E-01
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	2.24E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	4.47E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	4.19E-04	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	1.05E-01
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.26E-04	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	1.26E-02
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	3.62E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.81E-02
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	2.44E-02	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.22E-01
	(Total)												1.56E+01
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	1.19E-03	mg/kg-day	2.70E-01	mg/kg-day	N/A	N/A	4.42E-03
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	2.19E-06	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	7.30E-03
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	4.26E-05	mg/kg-day	7.50E-05	mg/kg-day	N/A	N/A	5.69E-01
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	7.24E-03	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	2.41E-02
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.13E-06	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	6.76E-05	mg/kg-day	9.60E-04	mg/kg-day	N/A	N/A	7.04E-02
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.05E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	2.03E-01
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	7.79E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	1.56E-02
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	2.50E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.25E-02
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.81E-04	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	9.06E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.97E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	9.85E-02
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	4.31E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	8.62E-02
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.37E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	2.73E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	4.79E-05	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	1.20E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	5.60E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	5.60E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	9.41E-04	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	4.70E-03
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.19E-02	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	5.93E-02
	(Total)												1.29E+00
												Total of Routes	1.68E+01

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-22.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT TAP WATER CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	2.25E-01	mg/kg-day	1.00E+00	mg/kg-day	N/A	N/A	2.25E-01
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	4.14E-04	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	1.38E+00
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	4.03E-03	mg/kg-day	3.00E-03	mg/kg-day	N/A	N/A	1.34E+00
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.37E+00	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	4.56E+00
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	2.14E-04	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.28E-02	mg/kg-day	2.40E-02	mg/kg-day	N/A	N/A	5.32E-01
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.20E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.10E-01
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	6.06E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	1.21E-01
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.21E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	6.03E-03
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.81E-05	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	3.90E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.20E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	1.10E-01
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	2.85E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	5.70E-02
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.24E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	2.49E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	2.33E-04	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	5.82E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	6.99E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	6.99E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.01E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.01E-02
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.36E-02	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	6.78E-02
	(Total)												8.65E+00
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	5.07E-04	mg/kg-day	2.70E-01	mg/kg-day	N/A	N/A	1.88E-03
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	9.31E-07	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	3.10E-03
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.81E-05	mg/kg-day	7.50E-05	mg/kg-day	N/A	N/A	2.42E-01
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	3.08E-03	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	1.03E-02
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	4.81E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	2.87E-05	mg/kg-day	9.60E-04	mg/kg-day	N/A	N/A	2.99E-02
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.21E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	6.04E-02
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.71E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	7.42E-03
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.22E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	6.11E-03
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.16E-05	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	3.58E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	5.76E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	2.88E-02
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.22E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	2.44E-02
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	3.87E-04	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	7.75E-03
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.19E-05	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	2.98E-03
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.72E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	1.72E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.47E-04	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.23E-03
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	3.25E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.62E-02
	(Total)												4.80E-01
												Total of Routes	9.13E+00

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-22.CTE
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT TAP WATER CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	1.58E-01	mg/kg-day	1.00E+00	mg/kg-day	N/A	N/A	1.58E-01
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	2.90E-04	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	9.65E-01
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	2.82E-03	mg/kg-day	3.00E-03	mg/kg-day	N/A	N/A	9.40E-01
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	9.57E-01	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	3.19E+00
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.50E-04	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	8.94E-03	mg/kg-day	2.40E-02	mg/kg-day	N/A	N/A	3.72E-01
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.54E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	7.70E-02
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	4.24E-04	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	8.48E-02
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	8.44E-05	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	4.22E-03
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	5.47E-05	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	2.73E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.54E-03	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	7.70E-02
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.99E-03	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	3.99E-02
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	8.71E-04	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	1.74E-02
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.63E-04	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	4.08E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	4.89E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	4.89E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.41E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	7.05E-03
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	9.49E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	4.75E-02
	(Total)												6.05E+00
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	3.38E-04	mg/kg-day	2.70E-01	mg/kg-day	N/A	N/A	1.25E-03
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	6.22E-07	mg/kg-day	3.00E-04	mg/kg-day	N/A	N/A	2.07E-03
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.21E-05	mg/kg-day	7.50E-05	mg/kg-day	N/A	N/A	1.61E-01
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.05E-03	mg/kg-day	3.00E-01	mg/kg-day	N/A	N/A	6.85E-03
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	3.22E-07	mg/kg-day	--	mg/kg-day	N/A	N/A	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.92E-05	mg/kg-day	9.60E-04	mg/kg-day	N/A	N/A	2.00E-02
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	9.88E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	4.94E-02
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.03E-05	mg/kg-day	5.00E-03	mg/kg-day	N/A	N/A	6.07E-03
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	9.99E-05	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	4.99E-03
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	5.85E-05	mg/kg-day	2.00E-03	mg/kg-day	N/A	N/A	2.93E-02
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.71E-04	mg/kg-day	2.00E-02	mg/kg-day	N/A	N/A	2.36E-02
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	9.99E-04	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	2.00E-02
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	3.17E-04	mg/kg-day	5.00E-02	mg/kg-day	N/A	N/A	6.33E-03
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	9.75E-06	mg/kg-day	4.00E-03	mg/kg-day	N/A	N/A	2.44E-03
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.41E-05	mg/kg-day	1.00E-02	mg/kg-day	N/A	N/A	1.41E-03
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.02E-04	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.01E-03
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	2.66E-03	mg/kg-day	2.00E-01	mg/kg-day	N/A	N/A	1.33E-02
	(Total)												3.49E-01
												Total of Routes	6.40E+00

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-23.RME
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	--	1.00E-03	mg/kg-day	NA
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	--	--	2.90E-05	mg/kg-day	NA
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	--	1.43E-05	mg/kg-day	NA
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.13E-03	mg/kg-day	--	--	--	mg/kg-day	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.63E-05	mg/kg-day	--	--	--	mg/kg-day	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	2.43E-07	mg/kg-day	--	--	--	mg/kg-day	--
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	3.71E-05	mg/kg-day	--	--	--	mg/kg-day	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.20E-03	mg/kg-day	--	--	8.60E-04	mg/kg-day	2.56E+00
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	2.98E-03	mg/kg-day	--	--	1.70E-03	mg/kg-day	1.75E+00
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.30E-03	mg/kg-day	--	--	1.70E-03	mg/kg-day	7.65E-01
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	2.85E-04	mg/kg-day	--	--	8.60E-03	mg/kg-day	3.31E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	6.46E-05	mg/kg-day	--	--	1.40E-01	mg/kg-day	4.61E-04
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.32E-03	mg/kg-day	--	--	1.14E-01	mg/kg-day	2.04E-02
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.48E-02	mg/kg-day	--	--	2.80E-02	mg/kg-day	5.30E-01
	(Total)												5.66E+00
												Total of Routes	5.66E+00

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

TABLE G5-23.CTE
CALCULATION OF NON-CANCER HAZARDS - ADULT RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	--	1.00E-03	mg/kg-day	NA
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	--	--	2.90E-05	mg/kg-day	NA
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	--	--	mg/kg-day	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	--	1.43E-05	mg/kg-day	NA
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.10E-03	mg/kg-day	--	--	--	mg/kg-day	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.87E-05	mg/kg-day	--	--	--	mg/kg-day	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.25E-07	mg/kg-day	--	--	--	mg/kg-day	--
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.91E-05	mg/kg-day	--	--	--	mg/kg-day	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.13E-03	mg/kg-day	--	--	8.60E-04	mg/kg-day	1.31E+00
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.53E-03	mg/kg-day	--	--	1.70E-03	mg/kg-day	9.00E-01
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	6.68E-04	mg/kg-day	--	--	1.70E-03	mg/kg-day	3.93E-01
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.46E-04	mg/kg-day	--	--	8.60E-03	mg/kg-day	1.70E-02
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	3.32E-05	mg/kg-day	--	--	1.40E-01	mg/kg-day	2.37E-04
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.19E-03	mg/kg-day	--	--	1.14E-01	mg/kg-day	1.05E-02
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	7.63E-03	mg/kg-day	--	--	2.80E-02	mg/kg-day	2.72E-01
	(Total)												2.91E+00
												Total of Routes	2.91E+00

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

Appendix G6

Cancer Risk Tables

TABLE G6-1.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.61E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.18E-07
	(Total)										1.18E-07
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.08E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.52E-07
	(Total)										1.52E-07
										Total of Routes	2.69E-07

TABLE G6-2.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.27E-11	mg/kg-day	3.10E+00	1/(mg/kg-day)	7.05E-11
	(Total)										7.05E-11
										Total of Routes	7.05E-11

TABLE G6-3.RME
CALCULATION OF CANCER RISKS - CHILD RESIDENT CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	6.75E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	4.93E-06
	(Total)										4.93E-06
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.91E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.39E-06
	(Total)										1.39E-06
										Total of Routes	6.32E-06

TABLE G6-4.RME
CALCULATION OF CANCER RISKS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.86E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	8.86E-10
	(Total)										8.86E-10
										Total of Routes	8.86E-10

TABLE G6-5.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	2.78E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	2.03E-06
	(Total)										2.03E-06
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.22E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	8.94E-07
	(Total)										8.94E-07
										Total of Routes	2.92E-06

TABLE G6-6.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	3.26E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	1.01E-09
	(Total)										1.01E-09
										Total of Routes	1.01E-09

TABLE G6-7.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	9.52E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	6.95E-06
	(Total)										6.95E-06
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	3.14E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	2.29E-06
	(Total)										2.29E-06
										Total of Routes	9.24E-06

TABLE G6-8.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	6.12E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	1.90E-09
	(Total)										1.90E-09
										Total of Routes	1.90E-09

TABLE G6-9.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER CONTACT WITH SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil
Exposure Point: Contact with Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.03E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	7.54E-07
	(Total)										7.54E-07
Dermal	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.33E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	9.72E-07
	(Total)										9.72E-07
										Total of Routes	1.73E-06

TABLE G6-10.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SURFACE SOIL
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Surface Soil
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Benzo(a)pyrene	5.91E+02	ug/kg	5.91E+02	ug/kg	M	1.46E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	4.52E-10
	(Total)										4.52E-10
										Total of Routes	4.52E-10

TABLE G6-11.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	5.10E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.08E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.27E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	9.29E-08
	(Total)										9.29E-08
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	5.05E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.08E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.64E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.20E-07
	(Total)										1.20E-07
										Total of Routes	2.13E-07

TABLE G6-12.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Current
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	7.20E-11	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.53E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.80E-11	mg/kg-day	3.10E+00	1/(mg/kg-day)	5.57E-11
	(Total)										5.57E-11
										Total of Routes	5.57E-11

TABLE G6-13.RME
CALCULATION OF CANCER RISKS - ADULT CONSTRUCTION WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	7.83E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.67E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.96E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.43E-07
	(Total)										1.43E-07
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.09E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.72E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.63E-09	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.92E-08
	(Total)										1.92E-08
										Total of Routes	1.62E-07

TABLE G6-14.RME
CALCULATION OF CANCER RISKS - ADULT CONSTRUCTION WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.53E-11	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	5.39E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	6.33E-12	mg/kg-day	3.10E+00	1/(mg/kg-day)	1.96E-11
	(Total)										1.96E-11
										Total of Routes	1.96E-11

TABLE G6-15.RME
CALCULATION OF CANCER RISKS - CHILD RESIDENT CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.13E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	4.54E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	5.33E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	3.89E-06
	(Total)										3.89E-06
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	4.65E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	9.90E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.51E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.10E-06
	(Total)										1.10E-06
										Total of Routes	4.99E-06

TABLE G6-15.CTE
CALCULATION OF CANCER RISKS - CHILD RESIDENT CONTACT WITH SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.38E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	5.06E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	5.94E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	4.34E-07
	(Total)										4.34E-07
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.07E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	4.41E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	6.73E-09	mg/kg-day	7.30E+00	1/(mg/kg-day)	4.91E-08
	(Total)										4.91E-08
										Total of Routes	4.83E-07

TABLE G6-16.RME
CALCULATION OF CANCER RISKS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	9.04E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.92E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.26E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	7.00E-10
	(Total)										7.00E-10
										Total of Routes	7.00E-10

TABLE G6-16.CTE
CALCULATION OF CANCER RISKS - CHILD RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.01E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.14E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.52E-11	mg/kg-day	3.10E+00	1/(mg/kg-day)	7.80E-11
	(Total)										7.80E-11
										Total of Routes	7.80E-11

TABLE G6-17.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.78E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.87E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.19E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.60E-06
	(Total)										1.60E-06
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.98E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	6.34E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	9.68E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	7.07E-07
	(Total)										7.07E-07
										Total of Routes	2.31E-06

TABLE G6-17.CTE
CALCULATION OF CANCER RISKS - ADULT RESIDENT CONTACT WITH SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.10E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.34E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.75E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	2.01E-07
	(Total)										2.01E-07
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.07E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.27E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	3.47E-09	mg/kg-day	7.30E+00	1/(mg/kg-day)	2.53E-08
	(Total)										2.53E-08
										Total of Routes	2.26E-07

TABLE G6-18.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.03E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.20E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.58E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	8.00E-10
	(Total)										8.00E-10
										Total of Routes	8.00E-10

TABLE G6-18.CTE
CALCULATION OF CANCER RISKS - ADULT RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.68E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	3.59E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	4.21E-11	mg/kg-day	3.10E+00	1/(mg/kg-day)	1.30E-10
	(Total)										1.30E-10
										Total of Routes	1.30E-10

TABLE G6-19.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	8.78E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	1.87E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	7.52E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	5.49E-06
	(Total)										5.49E-06
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	2.98E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	6.34E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	2.48E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	1.81E-06
	(Total)										1.81E-06
										Total of Routes	7.30E-06

TABLE G6-19.CTE
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT CONTACT WITH SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.10E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.34E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	8.69E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	6.34E-07
	(Total)										6.34E-07
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.07E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.27E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.02E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	7.44E-08
	(Total)										7.44E-08
										Total of Routes	7.09E-07

TABLE G6-20.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.03E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	2.20E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	4.84E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	1.50E-09
	(Total)										1.50E-09
										Total of Routes	1.50E-09

TABLE G6-20.CTE
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT PARTICULATE DUST INHALATION FROM SOIL*
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	1.68E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	3.59E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	6.72E-11	mg/kg-day	3.10E+00	1/(mg/kg-day)	2.08E-10
	(Total)										2.08E-10
										Total of Routes	2.08E-10

TABLE G6-21.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER CONTACT WITH SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Soil*
Exposure Point: Contact with Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	3.27E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	6.95E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	8.16E-08	mg/kg-day	7.30E+00	1/(mg/kg-day)	5.96E-07
	(Total)										5.96E-07
Dermal	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	3.24E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	6.90E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.05E-07	mg/kg-day	7.30E+00	1/(mg/kg-day)	7.68E-07
	(Total)										7.68E-07
										Total of Routes	1.36E-06

TABLE G6-22.RME
CALCULATION OF CANCER RISKS - ADULT INDUSTRIAL WORKER PARTICULATE DUST INHALATION FROM SOIL*
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Soil*
Exposure Medium: Particulates
Exposure Point: Particulate Dust Inhalation from Soil*
Receptor Population: Industrial Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Antimony	1.87E+00	mg/kg	1.87E+00	mg/kg	M	4.61E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Silver	3.98E+01	mg/kg	3.98E+01	mg/kg	M	9.82E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Benzo(a)pyrene	4.67E+02	ug/kg	4.67E+02	ug/kg	M	1.15E-10	mg/kg-day	3.10E+00	1/(mg/kg-day)	3.57E-10
	(Total)										3.57E-10
										Total of Routes	3.57E-10

TABLE G6-23.RME
CALCULATION OF CANCER RISKS - ADULT CONSTRUCTION WORKER CONTACT WITH GROUNDWATER DURING CONSTRUCTION ACTIVITIES
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Contact with Groundwater During Construction Activities
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	2.98E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	5.47E-09	mg/kg-day	1.50E+00	1/(mg/kg-day)	8.21E-09
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.07E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.81E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	2.83E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.69E-07	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.19E-06	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	8.82E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	2.54E-07	mg/kg-day	1.40E-02	1/(mg/kg-day)	3.56E-09
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.84E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.05E-06	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	4.42E-06	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.42E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	5.67E-08	mg/kg-day	5.50E-02	1/(mg/kg-day)	3.12E-09
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	5.68E-08	mg/kg-day	5.40E-01	1/(mg/kg-day)	3.07E-08
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.07E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.27E-05	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										4.56E-08
										Total of Routes	4.56E-08

TABLE G6-24.RME
CALCULATION OF CANCER RISKS - ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.87E-08	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.45E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.12E-09	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.56E-11
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.35E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.73E-08	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.45E-07	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	8.04E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.39E-08	mg/kg-day	2.70E-02	1/(mg/kg-day)	3.76E-10
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	7.99E-09	mg/kg-day	2.00E-02	1/(mg/kg-day)	1.60E-10
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.27E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	6.75E-07	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										5.52E-10
										Total of Routes	5.52E-10

TABLE G6-25.RME
CALCULATION OF CANCER RISKS - CHILD RESIDENT TAP WATER CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	6.05E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	1.11E-04	mg/kg-day	1.50E+00	1/(mg/kg-day)	1.67E-04
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.08E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	3.67E-01	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	5.75E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	3.43E-03	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	5.91E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.63E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	3.24E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	4.54E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.10E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	5.91E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	7.66E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	3.34E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	6.26E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	3.44E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.88E-05	mg/kg-day	5.40E-01	1/(mg/kg-day)	1.01E-05
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	5.41E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	3.64E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										1.81E-04
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	3.10E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	5.69E-07	mg/kg-day	1.50E+00	1/(mg/kg-day)	8.53E-07
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.11E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.88E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	2.94E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.76E-05	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	6.05E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.16E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	3.74E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	5.23E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.70E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	2.94E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	6.43E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	2.04E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	7.43E-06	mg/kg-day	5.50E-02	1/(mg/kg-day)	4.09E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	8.36E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	4.51E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.44E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.77E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										6.30E-06
										Total of Routes	1.87E-04

TABLE G6-25.CTE
CALCULATION OF CANCER RISKS - CHILD RESIDENT TAP WATER CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	1.16E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	2.13E-05	mg/kg-day	1.50E+00	1/(mg/kg-day)	3.19E-05
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	2.07E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	7.03E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.10E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	6.56E-04	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.13E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.11E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	6.19E-06	mg/kg-day	1.40E-02	1/(mg/kg-day)	8.67E-08
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	4.01E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.13E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.46E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	6.39E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.20E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	6.58E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	3.59E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	1.94E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.03E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	6.97E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										3.46E-05
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	3.41E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	6.26E-08	mg/kg-day	1.50E+00	1/(mg/kg-day)	9.39E-08
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.22E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.07E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	3.24E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.93E-06	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.16E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	2.22E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	7.16E-06	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.00E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	5.18E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	5.63E-05	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.23E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	3.90E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.37E-06	mg/kg-day	5.50E-02	1/(mg/kg-day)	7.53E-08
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.60E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	8.64E-07
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.69E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	3.39E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										1.13E-06
										Total of Routes	3.57E-05

TABLE G6-26.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT TAP WATER CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	7.72E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	1.42E-04	mg/kg-day	1.50E+00	1/(mg/kg-day)	2.13E-04
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.38E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	4.69E-01	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	7.34E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	4.38E-03	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	2.08E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	4.13E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	5.79E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.68E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	9.77E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.26E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	7.98E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	4.39E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	2.40E-05	mg/kg-day	5.40E-01	1/(mg/kg-day)	1.29E-05
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	6.90E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	4.65E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										2.31E-04
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	1.74E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	3.19E-07	mg/kg-day	1.50E+00	1/(mg/kg-day)	4.79E-07
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	6.21E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.05E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.65E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	9.85E-06	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.14E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.27E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	4.19E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	5.87E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.46E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	4.19E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.33E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	4.09E-06	mg/kg-day	5.50E-02	1/(mg/kg-day)	2.25E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	5.90E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	3.19E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	8.46E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.11E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										4.48E-06
										Total of Routes	2.35E-04

TABLE G6-26.CTE
CALCULATION OF CANCER RISKS - ADULT RESIDENT TAP WATER CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	2.03E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	3.72E-05	mg/kg-day	1.50E+00	1/(mg/kg-day)	5.58E-05
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	3.62E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.23E-01	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.93E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.15E-03	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	5.45E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.08E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.52E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.03E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	2.56E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.12E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	2.10E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	1.15E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	6.29E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	3.40E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.81E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.22E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										6.05E-05
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	4.35E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	7.99E-08	mg/kg-day	1.50E+00	1/(mg/kg-day)	1.20E-07
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.56E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.64E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	4.13E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	2.47E-06	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.27E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.90E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.28E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.80E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.53E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	6.06E-05	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.28E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.07E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.25E-06	mg/kg-day	5.50E-02	1/(mg/kg-day)	6.89E-08
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.81E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	9.77E-07
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.59E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	3.41E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										1.35E-06
										Total of Routes	6.19E-05

TABLE G6-27.RME
CALCULATION OF CANCER RISKS - ADULT RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	1.51E+01	1/(mg/kg-day)	NA
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	4.10E+01	1/(mg/kg-day)	NA
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.31E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.24E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	8.32E-08	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.16E-09
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.27E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.02E-03	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.46E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	9.76E-05	mg/kg-day	2.70E-02	1/(mg/kg-day)	2.63E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	2.21E-05	mg/kg-day	2.00E-02	1/(mg/kg-day)	4.43E-07
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	7.96E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	5.09E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										3.08E-06
										Total of Routes	3.08E-06

TABLE G6-27.CTE
CALCULATION OF CANCER RISKS - ADULT RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	1.51E+01	1/(mg/kg-day)	NA
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	4.10E+01	1/(mg/kg-day)	NA
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.41E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	2.40E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.60E-08	mg/kg-day	1.40E-02	1/(mg/kg-day)	2.24E-10
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.45E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.45E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.97E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	8.59E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.88E-05	mg/kg-day	2.70E-02	1/(mg/kg-day)	5.08E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	4.27E-06	mg/kg-day	2.00E-02	1/(mg/kg-day)	8.53E-08
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.53E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	9.80E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										5.93E-07
										Total of Routes	5.93E-07

TABLE G6-28.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT TAP WATER CONTACT WITH GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	7.72E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	2.53E-04	mg/kg-day	1.50E+00	1/(mg/kg-day)	3.80E-04
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.38E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	4.69E-01	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	7.34E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	4.38E-03	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	2.08E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	7.37E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.03E-06
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.68E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	9.77E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.26E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.42E-04	mg/kg-day	5.50E-02	1/(mg/kg-day)	7.83E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	4.27E-05	mg/kg-day	5.40E-01	1/(mg/kg-day)	2.31E-05
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	6.90E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	4.65E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										4.11E-04
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	1.74E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	8.88E-07	mg/kg-day	1.50E+00	1/(mg/kg-day)	1.33E-06
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	6.21E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.05E-03	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.65E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	9.85E-06	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	4.14E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.27E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	7.93E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.11E-06
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.46E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	4.19E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.33E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.15E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	6.33E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	1.43E-05	mg/kg-day	5.40E-01	1/(mg/kg-day)	7.70E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	8.46E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.11E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										1.08E-05
										Total of Routes	4.22E-04

TABLE G6-28.CTE
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT TAP WATER CONTACT WITH GROUNDWATER
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater
Exposure Point: Tap Water Contact with Groundwater
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Ingestion	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	2.03E-02	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	5.85E-05	mg/kg-day	1.50E+00	1/(mg/kg-day)	8.77E-05
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	3.62E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	1.23E-01	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	1.93E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	1.15E-03	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	5.45E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.70E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	2.39E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.03E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.98E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	2.56E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	1.12E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	3.29E-05	mg/kg-day	5.50E-02	1/(mg/kg-day)	1.81E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	9.88E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	5.33E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.81E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	1.22E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										9.51E-05
Dermal	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	4.35E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	1.43E-07	mg/kg-day	1.50E+00	1/(mg/kg-day)	2.14E-07
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	1.56E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	2.64E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	4.13E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	2.47E-06	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.27E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	3.90E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	2.00E-05	mg/kg-day	1.40E-02	1/(mg/kg-day)	2.80E-07
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	7.53E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	6.06E-05	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.28E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.07E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	2.62E-06	mg/kg-day	5.50E-02	1/(mg/kg-day)	1.44E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	3.41E-06	mg/kg-day	5.40E-01	1/(mg/kg-day)	1.84E-06
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	2.59E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	3.41E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										2.48E-06
										Total of Routes	9.76E-05

TABLE G6-29.RME
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	1.51E+01	1/(mg/kg-day)	--
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	4.10E+01	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.31E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	1.24E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	8.32E-08	mg/kg-day	1.40E-02	1/(mg/kg-day)	1.16E-09
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	1.27E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	7.54E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.02E-03	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	4.46E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	9.76E-05	mg/kg-day	2.70E-02	1/(mg/kg-day)	2.63E-06
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	2.21E-05	mg/kg-day	2.00E-02	1/(mg/kg-day)	4.43E-07
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	7.96E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	5.09E-03	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										3.08E-06
										Total of Routes	3.08E-06

TABLE G6-29.CTE
CALCULATION OF CANCER RISKS - LIFETIME RESIDENT INHALATION OF GROUNDWATER VAPORS DURING SHOWERING
CENTRAL TENDENCY EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Inhalation of Groundwater Vapors During Showering
Receptor Population: Resident
Receptor Age: Child/Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	Aluminum	8.22E+03	ug/l	8.22E+03	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Arsenic	1.51E+01	ug/l	1.51E+01	ug/l	M	NA	mg/kg-day	1.51E+01	1/(mg/kg-day)	--
	Chromium	1.47E+02	ug/l	1.47E+02	ug/l	M	NA	mg/kg-day	4.10E+01	1/(mg/kg-day)	--
	Iron	4.99E+04	ug/l	4.99E+04	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Lead	7.81E+00	ug/l	7.81E+00	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	Manganese	4.66E+02	ug/l	4.66E+02	ug/l	M	NA	mg/kg-day	--	1/(mg/kg-day)	--
	2-Methylnaphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.41E-04	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/l	2.21E+01	ug/l	M	2.40E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/l	4.40E+00	ug/l	M	1.60E-08	mg/kg-day	1.40E-02	1/(mg/kg-day)	2.24E-10
	Dibenzofuran	2.85E+00	ug/l	2.85E+00	ug/l	M	2.45E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/l	8.03E+01	ug/l	M	1.45E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/l	1.04E+02	ug/l	M	1.97E-04	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/l	4.54E+01	ug/l	M	8.59E-05	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/l	8.50E+00	ug/l	M	1.88E-05	mg/kg-day	2.70E-02	1/(mg/kg-day)	5.08E-07
	Tetrachloroethene	2.55E+00	ug/l	2.55E+00	ug/l	M	4.27E-06	mg/kg-day	2.00E-02	1/(mg/kg-day)	8.53E-08
	Toluene	7.35E+01	ug/l	7.35E+01	ug/l	M	1.53E-04	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/l	4.95E+02	ug/l	M	9.80E-04	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										5.93E-07
										Total of Routes	5.93E-07

Appendix G7

Example Calculations

APPENDIX G7

RISK ASSESSMENT EXAMPLE CALCULATIONS

The example calculations listed in this appendix are presented in order to verify the approaches taken and calculations used to estimate risks at NASA WFF Waste Oil Dump (WOD) Site. The example calculations for risks are all based on RME exposure. Examples are shown for representative receptors for area groundwater, surface soil, and soil*. CTE risks are not shown here, however, they would be estimated following the same equations using CTE, rather than RME, input parameters from Tables 7.7 to 7.28.

Area Groundwater Exposure

Three potential exposure routes are associated with direct exposure to area groundwater at WOD. These exposure routes are ingestion, dermal absorption, and inhalation of vapors during showering.

Ingestion of Groundwater:

Ingestion of tetrachloroethene (PCE) in area groundwater at WOD for a future adult resident under an RME scenario was evaluated using the following equation (EPA, 1989a):

$$IngestionDose(mg/kg \cdot day) = \frac{CW \times IR_{GW} \times FI \times EF \times ED \times CF1}{BW \times AT}$$

Where:

Carc-Ingestion Dose	= 2.40E-5	= Carcinogenic Ingestion Exposure Dose (mg/kg-day)
Noncarc-Ingestion Dose	= 6.99E-5	= Noncarcinogenic Ingestion Exposure Dose (mg/kg-day)
CW	= 2.55 ug/L	= PCE concentration in area groundwater
IR_{GW}	= 2.0 L/day	= Ingestion Rate
FI	= 1.0	= Fraction Ingested from this contaminated source
EF	= 350 days/yr	= Exposure Frequency
ED	= 24 yrs	= Exposure Duration
CF1	= 0.001 mg/10^3 ug	= Conversion Factor
BW	= 70 kg	= Body Weight
ATC	= 25550 days	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)
ATN	= 8760 days	= Averaging Time for Noncarcinogens (365 d/yr x 25 yrs)

The RME cancer risk for a future adult resident from ingestion of PCE in area groundwater at WOD is estimated as follows:

CA = Ingestion Dose x SF

CA	= 1.29E-5	= Incremental Cancer Risk
SF	= 5.4E-1 (mg/kg-day)$^{-1}$	= Oral Slope Factor
Carc-Ingestion Dose	= 2.40E-5	= Carcinogenic Ingestion Exposure Dose (mg/kg-day)

The RME noncarcinogenic risk for a future adult resident from ingestion of PCE in area groundwater at WOD is estimated as follows:

NC = Ingestion Dose/RfD

NC	= 6.99E-3	= Noncarcinogenic Risk
RfD	= 1.0E-2 (mg/kg-day)	= Oral Reference Dose
Noncarc-Ingestion Dose	= 6.99E-5	= Noncarcinogenic Ingestion Exposure Dose (mg/kg-day)

Dermal Absorption of Area Groundwater :

Dermal absorption of PCE in area groundwater at WOD for a future adult construction worker under an RME scenario was evaluated using the following equation (EPA, 1989a; EPA, 1995):

$$DermalDose(mg/kg \cdot day) = \frac{CW \times KP \times SA \times Func(ET) \times EF \times ED \times CF1 \times CF2}{BW \times AT}$$

Where:

Carc-Dermal Dose	= 5.68E-8	= Carcinogenic Dermal Exposure Dose (mg/kg-day)
Noncarc- Dermal Dose	= 3.98E-6	= Noncarcinogenic Dermal Exposure Dose (mg/kg-day)

CW	= 2.55 ug/L	= PCE concentration in area groundwater
KP	= 0.033 cm/hr	= Permeability coefficient from water
FA	= 1	= Fraction Absorbed (unitless)
SA	= 2077 cm^2	= Skin surface area available for contact
EF	= 156 days/yr	= Exposure Frequency
ED	= 1 yr	= Exposure Duration
ET	= 2 hr/day	= Exposure Time where ET = Func(ET) for inorganics
CF1	= 0.001 mg/10^3 ug	= Conversion Factor
CF2	= 0.001 L/10^3 cm^3	= Conversion Factor
BW	= 70 kg	= Body Weight
ATC	= 25550	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)
ATN	= 365 days	= Averaging Time for Noncarcinogens (365 d/yr x 25 yrs)
Func(ET)	= 3.73 hr/day	= Exposure Time [Func(ET) = ET for inorganics] or

$$Func(ET) = FA \times 2 \times \sqrt{\frac{6 \times \tau \times ET}{\pi}}$$ for organics ET<t*

$$Func(ET) = FA \times \left\{ \frac{ET}{1+B} + \frac{2 \times \tau \times \left(1 + 3B + 3B^2\right)}{(1+B)^2} \right\}$$ for organics ET>t*

Where:

t^*_{PCE}	= 2.18 hr	= Time to reach steady state
τ	= 0.91 hr	= Lag Time
ET	= 2 hr/day	= Exposure Time

The RME cancer risk for a future construction worker from dermal absorption of PCE in area groundwater at WOD is estimated as follows:

CA = Dermal Dose x SF

CA	= 3.07E-8	= Incremental Cancer Risk
SF	= 5.40E-1 $(mg/kg\text{-}day)^{-1}$	= Dermal Slope Factor = (SF_{oral}/GI Factor; [5.40E-2/1.0])
Carc-Dermal Dose	= 5.68E-8	= Carcinogenic Dermal Exposure Dose (mg/kg-day)

The RME noncarcinogenic risk for a future construction worker from dermal absorption of PCE in area groundwater at WOD is estimated as follows:

NC = Dermal Dose/RfD

NC	= 3.98E-4	= Noncarcinogenic Risk
RfD	= 1.0E-2 (mg/kg-day)	= Dermal Reference Dose = (RfD_{oral}*GI Factor; [1.0E-2*1.0])
Noncarc-Dermal Dose	= 3.98E-6	= Noncarcinogenic Dermal Exposure Dose (mg/kg-day)

Inhalation of Vapors (During Construction Activities):

Inhalation of PCE in area groundwater for a future adult construction worker under an RME scenario was evaluated using the following equations (EPA, 1989a; ASTM E/1739-95, 1995):

$$InnhalationDose = \frac{CW * CF * VF * IR * ET * EF * ED}{BW * AT}$$

Where:

Carc-Inhalation Dose	= 7.99E-9	= Carcinogenic Inhalation Exposure Dose (mg/kg-day)
Noncarc-Inhalation Dose	= 5.59E-7	= Noncarcinogenic Inhalation Exposure Dose (mg/kg-day)

CW	= 2.55 ug/L	= Concentration in of PCE in groundwater
CF	= 0.001 $mg/10^3 ug$	= Conversion Factor
VF	= 1.360E-3 L/m^3	= Volatilization Factor for PCE in groundwater
IR_{air}	= 3.3 m^3/hour	= Inhalation rate
ET	= 8 hours/day	= Exposure Time
EF	= 156 days/yr	= Exposure frequency
ED	= 1 yr	= Exposure duration
BW	= 70 kg	= Body weight
ATC	= 25550 days	= Averaging time for carcinogens (365 d/yr x 70 yrs)
ATN	= 365 days	= Averaging Time for Noncarcinogens (365 d/yr x 1 yrs)

$$VF = \frac{H'}{1 + \left[\frac{U_{air} * S_{air} * L_{GW}}{W * D_{EFF-WS}}\right]} * 10^3 \, L/m^3$$

Where:

VF	= 1.360E-3 L/m^3	= Volatilization Factor for PCE in groundwater
H'	= 0.754	= dimensionless Henry's Law constant for PCE
U_{air}	= 470 cm/sec	= avg. wind speed above ground surf. in mixing zone (Norfolk)
S_{air}	= 200 cm	= ambient mixing zone

L_{GW}	= 0.1 cm	= depth to groundwater, h_v+h_{cap}
h_v	= 0 cm	= thickness of the vadose zone
h_{cap}	= 0.1 cm	= thickness of the capillary fringe
D_{EFF-WS}	= 1.13E-5 cm^2/sec	= effective diffusion between GW and Soil for PCE
W	= 1500 cm	= width of the source parallel to groundwater flow direction

$$D_{EFF-WS} = \left(h_{cap} + h_v\right) * \left[\frac{h_{cap}}{D_{EFF-cap}} + \frac{h_v}{D_{EFF-s}}\right]^{-1}$$

Where:

D_{EFF-WS}	= 1.13E-5 cm^2/sec	= effective diffusion between GW and Soil for PCE
h_v	= 0 cm	= thickness of the vadose zone
h_{cap}	= 0.1 cm	= thickness of the capillary fringe
$D_{EFF-cap}$	= 1.13E-5 cm^2/sec	= effective diffusion through capillary fringe for PCE
D_{EFF-s}	= cm2/sec	= effective diffusion in soil based on vapor-phase concentration, chemical specific

Because h_v is equal to zero, this equation reduces to show that the effective diffusion between groundwater and surface soil (D_{EFF-WS}) is equal to the effective diffusion through the capillary fringe ($D_{EFF-cap}$).

$$D_{EFF-cap} = \left[D^{air} * \frac{Oa_{cap}^{3.33}}{Ot^2}\right] + \left[D^{wat} * \frac{1}{H'} * \left(\frac{Ow_{cap}^{3.33}}{Ot^2}\right)\right]$$

Where:

$D_{EFF-cap}$	= 1.13E-5 cm^2/sec	= effective diffusion through capillary fringe for PCE
D^{air}	= 0.072 cm^2/sec	= diffusion coefficient in air for PCE
D^{wat}	= 8.2E-6 cm^2/sec	= diffusion coefficient in water for PCE
H'	= 0.754	= dimensionless Henry's Law constant for PCE
Oa_{cap}	= 0.038 cm^3-air/cm^3-soil	= volumetric air content in capillary fringe soils
Ow_{cap}	= 0.342 cm^3-H2O/cm^3-soil	= volumetric water content in capillary fringe soils
Ot	= 0.38 cm^3/cm^3-soil	= total soil porosity

The RME cancer risk for a construction worker from inhalation of PCE vapors in groundwater during construction activities at area groundwater – WOD is estimated as follows:

CA = Inhalation Dose x SF

CA	= 1.60E-10	= Incremental cancer risk
SF	= 2.00E-2 $(mg/kg/day)^{-1}$	= Inhalation slope factor
Inhalation Dose	= 7.99E-9 mg/kg/day	= Inhalation exposure for a industrial worker

The RME noncarcinogenic risk for a construction worker from inhalation of PCE vapors in groundwater during construction activities at WOD is estimated as follows:

NC = Inhalation Dose/RfD

NC	= 4.00E-6	= Noncarcinogenic Risk
RfD	= 1.40E-1 (mg/kg-day)	= Inhalation Reference Dose
Noncarc-Dermal Dose	= 5.59E-7	= Noncarcinogenic Inhalation Exposure Dose (mg/kg-day)

Inhalation of Vapors (During Showering):

If inhalation of vapors during showering is also estimated for exposure to area groundwater, the concentration of PCE leaving water as a vapor must be estimated and subtracted from the water concentration in order to determine the proper concentration left for dermal contact.

$$Cv = Co - Cwd$$

Where:

Cv	= 1.604 ug/L	= PCE concentration in water after vaporization
Co	= 2.55 ug/L	= Original concentration of PCE in groundwater
Cwd	= 0.946 ug/L	= Concentration of PCE leaving the water droplet in vapors

The concentration leaving the water droplet (Cwd; see derivation below) is 0.946 ug/L, therefore, the available concentration for dermal contact is equal to 2.55 ug/L – 0.946 ug/L = 1.604 ug/L, this value is input into Cv in the dermal equation above for the adult resident.

$$Cwd = Co \times \left(1 - e^{-KaL \times ts \times \left(6/d\right) \times CF2 \times CF3}\right)$$

Cwd	= 0.946 ug/L	= Concentration leaving water droplet after time ts
Co	= 2.55 ug/L	= Concentration in water
KaL	= 13.90 cm/hr	= Adjusted overall mass transfer coefficient
ts	= 2 sec	= Shower droplet time
d	= 1 mm	= Shower droplet diameter
6/d	= (πd^2) / ($4/3\pi r^3$)	= Interfacial droplet area per unit droplet volume
CF2	= 1 hr/3600 sec	= Conversion Factor
CF3	= 10 mm/cm	= Conversion Factor

$$KaL = \frac{KL}{\sqrt{\frac{T_1 \times \mu_s}{T_s \times \mu_1}}}$$

KaL	= 13.90 cm/hr	= Adjusted overall mass transfer coefficient
KL	= 10.29 cm/hr	= Mass transfer coefficient
T_1	= 293 ^{o}K	= Calibration water temperature of KL
T_s	= 318 ^{o}K	= Shower water temperature
μ_1	= 1.002 centipoise	= Water viscosity at T_1
μ_S	= 0.596 centipoise	= Water viscosity at T_s

$$KL = \frac{1}{\left(\frac{1}{kl}\right) + \left(\frac{R \times T}{H \times kg}\right)}$$

KL	= 10.29 cm/hr	= Mass transfer coefficient
R	= 8.21E-5 atm m^3/mol/°K	= Ideal gas law constant
T	= 293 °K	= Absolute temperature
H	= 0.256 atm m^3/mole	= Henry's Law constant
kg	= 988.38 cm/hr	= Gas-film mass transfer coefficient
kl	= 10.30 cm/hr	= Liquid-film mass transfer coefficient

$$kg = kH \times \sqrt{\frac{MWH}{MW}}$$

$$kI = kC \times \sqrt{\frac{MWC}{MW}}$$

kg	= 988.38 cm/hr	= Gas-film mass transfer coefficient
kl	= 10.30 cm/hr	= Liquid-film mass transfer coefficient
kH	= 3000 cm/hr	= kg for water
kC	= 20 cm/hr	= kl for carbon dioxide
MWH	= 18 g/mole	= Molecular Weight of water
MWC	= 44 g/mole	= Molecular Weight of carbon dioxide
MW	= 165.83 g/mole	= Molecular Weight of PCE

Inhalation of PCE (vapor phase during showering) in area groundwater at WOD for a future adult resident under an RME scenario was evaluated using the following equations (EPA, 1989a; Foster and Chrostowski, 1987):

$$InhalationDose(mg/kg \cdot day) = \frac{D \times EF \times ED}{AT}$$

$$D = \left(\frac{IR_{air} \times S}{BW \times Ra \times CF1} \right) \times Q$$

$$Q = Ds + \left[\frac{e^{-Ra \times Dt}}{Ra} \right] - \left[\frac{e^{Ra \times (Ds - Dt)}}{Ra} \right]$$

$$S = \frac{Cwd \times Fr}{Sv}$$

Where:

Carc-Inhalation Dose	= 2.21E-5	= Carcinogenic Inhalation Exposure Dose (mg/kg-day)
Noncarc-Inhalation Dose	= 6.46E-5	= Noncarcinogenic Inhalation Exposure Dose (mg/kg-day)

D	= 6.733E-5 mg/kg/shower	= Dose absorbed per kg body weight per shower
EF	= 350 days/yr	= Exposure Frequency
ED	= 24 yrs	= Exposure Duration
ATC	= 25550 days	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)
ATN	= 8760 days	= Averaging Time for Noncarcinogens (365 d/yr x 24 yrs)
IR_{air}	= 13.88 L/min	= Inhalation Rate (0.833 m^3/hr) x 1000 L/m3 x 1 hr/ 60 min
S	= 2.029 ug/m^3/min	= Indoor VOC generation rate
BW	= 70 kg	= Body Weight
Ra	= 1.667E-2 min^{-1}	= Rate of air exchange
CF1	= 10^6 ug L/mg m^3	= Conversion Factor
Q	= 2.7897 min	= Function of air exchange rate & time in shower/room
Ds	= 15 min	= Duration of shower
Dt	= 20 min	= Total time in shower room
Cwd	= 0.946 ug/L	= Concentration leaving water droplet after time ts
Fr	= 12.87 L/min	= Shower flow rate
Sv	= 6 m^3	= Shower room air volume

The RME cancer risk for a future adult resident from inhalation of PCE vapors in area groundwater during showering at WOD is estimated as follows:

CA = Inhalation Dose x SF

CA	= 4.43E-7	= Incremental Cancer Risk
SF	= 2.00E-2 $(mg/kg\text{-}day)^{-1}$	= Inhalation Slope Factor
Carc-Inhalation Dose	= 2.21E-5	= Carcinogenic Inhalation Exposure Dose (mg/kg-day)

The RME noncarcinogenic risk for a future adult resident from inhalation of PCE vapors in area groundwater during showering at WOD is estimated as follows:

NC = Inhalation Dose/RfD

NC	= 4.61E-4	= Noncarcinogenic Risk
RfD	= 1.40E-1 (mg/kg-day)	= Inhalation Reference Dose
Noncarc-Inhalation Dose	= 6.46E-5	= Noncarcinogenic Inhalation Exposure Dose (mg/kg-day)

The volatile chemical generation rate was estimated using the Foster and Chrostowski mass transfer model, which is based on two-phase film theory. The model employs contaminant-specific mass transfer coefficients, Henry's Law constants, droplet drop time, viscosity, temperature, etc. Specific details regarding the application of the mass transfer model can be found in the source documents (Foster and Chrostowski, 1987).

Ingestion of COPCs in Soil*:

Ingestion of benzo(a)pyrene (cancer) and antimony (non-cancer) in Soil* at WOD for a future adult industrial worker under an RME scenario was evaluated using the following equation (EPA, 1989a):

$$IngestionDose(mg/kg\cdot day) = \frac{CS \times IR_{soil} \times FI \times EF \times ED \times CF1}{BW \times AT}$$

Where:

Carc-Ingestion Dose	= 8.16E-8	= Carcinogenic Ingestion Exposure Dose (mg/kg-day)
Noncarc-Ingestion Dose	= 9.15E-7	= Noncarcinogenic Ingestion Exposure Dose (mg/kg-day)

CS	= 0.467 mg/kg	= Benzo(a)pyrene concentration in Soil*
CS	= 1.87 mg/kg	= Antimony concentration in Soil*
IR_{Soil}	= 50 mg/day	= Ingestion Rate
FI	= 1.0	= Fraction Ingested from this contaminated source
CF1	= 1 kg/10^6 mg	= Conversion Factor
EF	= 250 days/yr	= Exposure Frequency
ED	= 25 yrs	= Exposure Duration
BW	= 70 kg	= Body Weight
ATC	= 25550 days	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)
ATN	= 9125 days	= Averaging Time for Noncarcinogens (365 d/yr x 25 yrs)

The RME cancer risk for a future adult industrial worker from ingestion of benzo(a)pyrene in Soil* at WOD is estimated as follows:

CA = Ingestion Dose x SF

CA	= 5.96E-7	= Incremental Cancer Risk
SF	= 7.3 $(mg/kg\text{-}day)^{-1}$	= Oral Slope Factor
Carc-Ingestion Dose	= 8.16E-8	= Carcinogenic Ingestion Exposure Dose (mg/kg-day)

The RME noncarcinogenic risk for a future adult industrial worker from ingestion of benzo(a)pyrene in Soil* at WOD is estimated as follows:

NC = Ingestion Dose / RfD

NC	= 2.29E-3	= Noncarcinogenic Risk
RfD	= 0.0004 mg/kg-day	= Oral Reference Dose
Noncarc-Ingestion Dose	= 9.15E-7	= Noncarcinogenic Ingestion Exposure Dose (mg/kg-day)

Dermal Absorption of COPCs in Soil*:

Dermal absorption of benzo(a)pyrene (cancer) and antimony (non-cancer) in Soil* at WOD for a future adult industrial worker under an RME scenario was evaluated using the following equations (EPA, 1992e):

$$DermalDose(mg/kg \cdot day) = \frac{CS \times SA \times AF \times DABS \times EV \times EF \times ED \times CF1}{BW \times AT}$$

Where:

Carc-Dermal Dose	= 1.05E-7	= Carcinogenic Dermal Exposure Dose (mg/kg-day)
Noncarc-Dermal Dose	= 9.07E-8	= Noncarcinogenic Dermal Exposure Dose (mg/kg-day)

CS	= 0.467 mg/kg	= Benzo(a)pyrene concentration in Soil*
CS	= 1.87 mg/kg	= Antimony concentration in Soil*
SA	= 2479 cm^2	= Surface Area
AF	= 0.2 mg/cm^2/event	= Summation [Adherence factor per body part exposed]
EV	= 1 event/day	= Event Frequency
EF	= 250 days/yr	= Exposure Frequency
ED	= 25 yrs	= Exposure Duration
BW	= 70 kg	= Body Weight
DABS	= 0.13	= Benzo(a)pyrene Absorption Factor
DABS	= 0.01	= Antimony Absorption Factor

CF1	= 1 kg/10^6 mg	= Conversion Factor
ATC	= 25550 days	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)
ATN	= 9125 days	= Averaging Time for Noncarcinogens (365 d/yr x 25 yrs)

The RME cancer risk for a future adult industrial worker from dermal absorption of benzo(a)pyrene in Soil* at WOD is estimated as follows:

CA = Dermal Dose x SF

CA	= 7.68E-7	= Incremental Cancer Risk
SF	= 7.3 (mg/kg-day)$^{-1}$	= Dermal Slope Factor = (SF_{oral}/GI Factor; [7.3/1])
Carc-Dermal Dose	= 1.05E-7	= Carcinogenic Dermal Exposure Dose (mg/kg-day)

The RME noncarcinogenic risk for a future adult industrial worker from dermal absorption of antimony in Soil* at WOD is estimated as follows:

NC = Dermal Dose / RfD

NC	= 1.51E-3	= Noncarcinogenic Risk
RfD	= 6.00E-5 mg/kg-day	= Dermal Reference Dose = (RfD_{Oral}*GI Factor; [4E-4*0.15])
Noncarc-Dermal Dose	= 9.07E-8	= Noncarcinogenic Dermal Exposure Dose (mg/kg-day)

Inhalation of COPCs in Fugitive Dust:

Inhalation of benzo(a)pyrene in Soil* (via fugitive dust) at WOD for a future adult industrial worker under an RME scenario was evaluated using the following equations (EPA, 1992e):

$$InhalationDose(mg/kg/day) = \frac{\left(CS/PEF\right) \times IN \times ET \times EF \times ED}{BW \times AT}$$

Where:

Carc-Inhalation Dose = 1.15E-10 = Carcinogenic Inhalation Exposure Dose (mg/kg-day)

CS	= 0.467 mg/kg	= Benzo(a)pyrene concentration in Soil*
PEF	= 1.70E8 m^3/kg	= Particulate Emission Factor from Soil*
IN	= 1.5 m^3/hr	= Inhalation Rate
ET	= 8 hr/day	= Exposure Time
EF	= 250 days/yr	= Exposure Frequency
ED	= 25 yrs	= Exposure Duration
BW	= 70 kg	= Body Weight
ATC	= 25550 days	= Averaging Time for Carcinogens (365 d/yr x 70 yrs)

The RME cancer risk for a future adult industrial worker from inhalation of benzo(a)pyrene in Soil* at WOD is estimated as follows:

CA = Inhalation Dose x SF

CA	= 3.57E-10	= Incremental Cancer Risk
SF	= 3.10 (mg/kg-day)$^{-1}$	= Inhalation Slope Factor
Carc- Inhalation Dose	= 1.15E-10	= Carcinogenic Inhalation Exposure Dose (mg/kg-day)

Appendix G8

Soil to Groundwater Screening Values

Equation Values for Soil to Ground Water

Partitioning Equation Parameter	Value
Dilution factor (unitless)	20
Fraction organic carbon in soil (unitless)	0.002
Water-filled soil porosity (L_{water}/L_{soil})	0.3
Dry soil bulk density (kg/L)	1.5
Soil particle density (kg/L)	2.65

Soil Screening Levels for Soil to Ground Water (mg/kg)

Analyte	Cas Number	Ground Water Concentration* (mg/L)	Ground Water Concentration Source	Soil Screening Level
Arsenic, Inorganic	7440382	2.0E-01	MCL	5.8E+00
Benzene	71432	1.0E-01	MCL	3.4E-02
Bis(2-ethylhexyl) phthalate	117817	1.2E-01	MCL	3.6E+03
Chromium VI (particulates)	18540299	2.2E+00	HBL	4.2E+01
Dibenzofuran	132649	2.9E+00	HBL	4.8E+01
Manganese	7439965	3.4E+01	HBL	2.2E+03
Naphthalene	91203	1.5E+01	HBL	6.1E+01
Tetrachloroethylene	127184	1.0E-01	MCL	5.8E-02
Toluene	108883	2.0E+01	MCLG	1.2E+01
Trimethylbenzene, 1,2,4-	95636	3.7E+01	HBL	2.8E+02
Trimethylbenzene, 1,3,5-	108678	3.7E+01	HBL	1.3E+02
Xylene, Mixture	1330207	1.5E+03	HBL	1.4E+03
Xylene, m-	108383	2.0E+02	MCLG	2.1E+02
Xylene, o-	95476	2.0E+02	MCLG	1.9E+02

*Ground Water Concentration=Ground Water Concentration Source × Dilution Factor

APPENDIX H
SUPPORTING MATERIALS FOR
THE ECOLOGICAL RISK ASSESSMENT

APPENDIX H-1
CHEMICAL TOXICITY INFORMATION

APPENDIX H.1

This appendix presents a discussion of the different chemical classes to be analyzed at the WOD, including toxicity information, potential food chain and trophic transfer, and bioaccumulation potential. Appendix Table H.1-1 presents the bioaccumulation factors (BAFs) that were used in the surrogate species' food-chain models for the individual constituents that are detected the WOD. Note that dry weight BAFs were used for this ERA.

Volatile Organic Compounds

VOCs are usually very mobile in the environment because they are poorly adsorbed to soil and sediment particles. Also, because they are very volatile, they typically are only detected in surface water, surface soil, and sediment at low concentrations.

Most VOCs have very little potential to bioaccumulate in ecological receptors; therefore, biomagnification through the food chain does not appear to be significant. VOCs are not expected to biomagnify in plants and are typically only toxic to ecological receptors at relatively high concentrations.

Semivolatile Organic Compounds

The most common semivolatile organic compounds that are found at naval facilities include polynuclear aromatic hydrocarbons (PAHs) and phthalates. PAHs are a diverse group of compounds consisting of two or more substituted and unsubstituted polynuclear aromatic rings formed by the incomplete combustion of carbonaceous materials. PAHs are ubiquitous in the modern environment and are common constituents of coal tar, soot, vehicle exhaust, cigarette smoke, certain petroleum products, road tar, mineral oils, creosote, and many cooked foods. PAHs also are released to the environment through natural sources such as volcanoes and forest fires.

PAHs are transferred from surface water by volatilization and sorption to settling particles. The compounds are transformed in surface water by photooxidation, chemical oxidation, and microbial metabolism (ATSDR, 1989a). In soil and sediments, microbial metabolism is the major process for degradation of PAHs (ATSDR, 1989a). Although PAHs accumulate in terrestrial and aquatic plants, many organisms are able to metabolize and eliminate these compounds. Vertebrates can readily metabolize PAHs, but lower forms (insects and worms) cannot metabolize PAHs as quickly. However, food chain uptake does not appear to be a major exposure source to PAHs for aquatic animals (ATSDR, 1989a).

PAHs vary substantially in their toxicity to aquatic organisms. In general, toxicity increases as molecular weight increases, with the exception of some high molecular weight PAHs that have low acute toxicity. Most species of aquatic organisms rapidly accumulate PAHs that occur at low concentrations in the ambient medium. However, uptake of PAHs is highly species-specific, it is higher in algae, mollusks, and other species that are incapable of metabolizing PAHs (Eisler, 1987). The ability of fish to metabolize PAHs may explain why benzo(a)pyrene is frequently not detected or is found at only very low levels in fish from environments heavily contaminated with PAHs (ATSDR, 1989a).

Appendix Table H.1-1 presents the soil to earthworm BAFs for PAHs. Two sets of BAF studies were found for PAHs (see Appendix Table H.1-2). One study by Ma et al., (1998) calculated BAFs for PAHs in different soil types. The BAFs were presented as values for total PAHs. The second study, reported in Beyer (1990), presented average soil and earthworm concentrations for individual PAHs. The data were used to calculate the BAFs by dividing the PAH concentrations in the earthworm samples by the PAH concentrations in the soil samples. For the conservative food chain model, 1.606 [the maximum BAF from Ma et al., (1998)] was used while the average BAF of 0.609 was used for the average food chain model. These values were used because they are more conservative than those from Beyer (1990) and were based on more than one study.

Phthalates are semivolatile organic compounds that are used in production of plastics (ATSDR, 1993). Most phthalates are expected to sorb to soil or sediment particles after their release because of their high Log K_{OC} values (Howard, 1989). Some phthalates may bioconcentrate in aquatic organisms [Spectrum Laboratories, 1999; Howard, 1989; ATSDR, 1989a].

PCBs

The term polychlorinated biphenyls (PCBs) commonly refers to a variety of mixtures of individual biphenyl isomers, each consisting of two joined benzene rings and up to 10 chlorine atoms. Mixtures of these isomers are known by their commercial designation of Aroclor. This trade name is followed by a four-digit number; the first two numbers indicate the type of isomer mixture and the last two numbers indicate the approximate weight percent of chlorine in the mixture (USEPA, 1985).

PCBs released into water adsorb to sediments and other organic matter. Typically, PCB concentrations are greater in the sediment and suspended material than in the water column. Substantial quantities of PCBs in aquatic sediments can act as an environmental reservoir from which PCBs may be released slowly over a long period of time (ATSDR, 1989b). For PCBs that

exist in the dissolved state in water, volatilization becomes the primary fate process (USEPA, 1985).

Degradation of PCBs in the environment is dependent upon the degree of chlorination. Generally, the more chlorinated the PCB molecule, the more persistent it will be in the environment. Factors that determine biodegradability include the amount of chlorination, concentration, type of microbial population, available nutrients, and the temperature (ATSDR, 1989b).

Because PCBs are highly lipophilic, they can bioaccumulate in the lipid portions of animals. Bioconcentration factors in the thousands have been reported for various aquatic species (Eisler, 1986). PCBs can also accumulate in upper trophic level animals such as piscivorous birds and mammals that feed on contaminated prey items (Eisler, 1986).

Adverse effects of PCBs on terrestrial wildlife include increased mortality, reproductive effects, and behavioral effects (USEPA, 1985). As a group, birds are more resistant to acutely toxic effects of PCBs than mammals (Eisler, 1986). Among sensitive avian species, PCBs disrupt the normal pattern of growth, reproduction, metabolism, and behavior (Eisler, 1986). Of the mammals, the mink is the most sensitive wildlife species tested for which data are available (Eisler, 1986). Impacts to mink include anorexia, weight loss, lethargy, reproductive effects, and death (Eisler, 1986).

Metals

Many metals occur naturally at various concentrations in the surface water and sediment primarily to chemical weathering of rocks and fallout from volcanoes. Most metals are toxic to aquatic (i.e., fish, invertebrates) and terrestrial (i.e., plants, invertebrates, vertebrates) ecological receptors above certain concentrations, with some metals being more toxic at lower concentrations than others. Also, different chemical forms of the metals may be more toxic than others. For example, hexavalent chromium is typically more toxic than trivalent chromium, and methylmercury is more toxic than inorganic mercury. In addition, the toxicity of several metals (cadmium, chromium, copper, lead, nickel, silver, and zinc) to aquatic receptors in freshwater systems decreases with increasing water hardness.

Many factors (e.g., pH, Eh, clay content, organic matter content, cation exchange capacity) influence the bioavailability of metals to invertebrates in soil. It has been shown that the toxicity and bioavailability of metals is much higher in freshly salt-spiked soils than equivalent metal concentrations in field-collected soils. Some of the effects are metal or species specific. For

some metals, the pH of the soil or the presence of calcium can have an effect on the bioavailability of metals (Allen, 2002).

For plants, the temperature and humidity of the air can affect metal bioavailability. With higher temperature and lower humidity, flow of metals to the roots of plants increases (Allen, 2002).

For several metals, the Eco SSL Guidance referenced a document prepared by Sample et al., (1998), which presented soil to biota BAFs. These BAFs were used to predict the tissue concentrations in the small mammals from the chemical concentrations in the soil. The 90 percentile BAF from Sample et al., (1998) was used for the conservative food chain model and the median BAF was used for the average food chain model.

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APPENDIX TABLE H.1-1

DRY WEIGHT BAFS FOR PLANTS AND EARTHWORMS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemicals	Plant BAFs[1,2]		Earthworm BAFs[3,4]	
	Conservative[5]	Average[5]	Conservative[5]	Average[5]
Semivolatile Organics				
Benzo(a)anthracene	1.90E-02	1.90E-02	6.69E-01	2.56E-01
Benzo(a)pyrene	1.10E-02	1.10E-02	6.69E-01	2.56E-01
Benzo(b)fluoranthene	1.10E-02	1.10E-02	6.69E-01	2.56E-01
Benzo(g,h,i)perylene	5.60E-03	5.60E-03	6.69E-01	2.56E-01
Benzo(k)Fluoranthene	4.30E-03	4.30E-03	6.69E-01	2.56E-01
Chrysene	1.90E-02	1.90E-02	6.69E-01	2.56E-01
Fluoranthene	5.50E-02	5.50E-02	6.69E-01	2.56E-01
Indeno(1,2,3-cd)pyrene	5.60E-03	5.60E-03	6.69E-01	2.56E-01
Phenanthrene	8.20E-02	8.20E-02	6.69E-01	2.56E-01
Pyrene	5.50E-02	5.50E-02	6.69E-01	2.56E-01
PCBs				
Aroclor-1260	2.90E-03	2.90E-03	1.59E+01	6.67E+00
Inorganics				
Arsenic	1.10E+00	3.75E-02	5.23E-01	2.24E-01
Chromium	8.39E-02	4.10E-02	3.16E+00	3.06E-01
Copper	6.25E-01	1.24E-01	1.53E+00	5.15E-01
Lead	4.68E-01	3.89E-02	1.52E+00	2.66E-01
Mercury	5.00E+00	6.52E-01	2.06E+01	1.69E+00
Nickel	1.41E+00	1.80E-02	4.73E+00	1.06E+00
Selenium	3.01E+00	6.72E-01	1.34E+00	9.85E-01
Silver	3.67E-02	1.40E-02	1.53E+01	2.05E+00
Zinc	1.82E+00	3.66E-01	1.29E+01	3.20E+00

Notes:
BAF = Bioaccumulation Factor
All BAFs are presented on a dry weight basis
1 - ORNL (2001) for organics; only one value is available for conservative and average exposures
2 - Sample et al., (1997) for inorganics; conservative value is 90th percentile; average value is median value
3 - ORNL (September, 1998) for all chemicals except PAHs; conservative value is 90th percentile; average value is median value
4 - See Appendix Table H.1-2 for source of BAFs for PAHs
5 - Conservative and average refers to the exposure scenarios for which the uptake factors are used

APPENDIX TABLE H.1-2

SOIL TO EARTHWORM BIOACCUMULATION FACTORS FOR PAHS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Soil	Wet-Weight BAFs[1]	Dry-Weight BAFs[2]	Soil Type
OT1	0.081	0.506	Silty clay loam
OT2	0.026	0.163	Light sandy loam
OT3	0.105	0.656	Silty clay loam
OT4	0.257	1.606	Silty clay loam
OT5	0.192	1.200	Silty clay loam
OT6	0.091	0.569	Silty clay loam
GP1	0.069	0.431	Silty clay loam
GP2	0.072	0.450	Silty clay loam
GP3	0.062	0.388	Silty clay loam
GP4	0.11	0.688	Silty clay
GP5	0.042	0.263	Silty clay
GP6	0.062	0.388	Silty clay
Minimum BAF	**0.026**	**0.163**	
Maximum BAF	**0.257**	**1.606**	
Average BAF	**0.097**	**0.609**	

Notes:
Source of data is Ma et al., (1998)
1 - BAFs from the study are based on wet weight and normalized to the percent of organic carbon and percent lipids.
2 - These BAFs were calculated by dividing the wet weight BAF by 0.16 (percent solids of an earthworm)

Chemical	Earthworm Bioaccuumulation Factors [1]			
	Soil Concentration (mg/kg)	Earthworm Concentration (mg/kg)	BAF (dry weight)	BAF (wet weight) [2]
Acenaphthylene	ND	ND	ND	ND
Anthanthrene	1.2	0.11	0.092	0.015
Anthracene	0.92	0.047	0.051	0.008
Benzo(a)anthracene	2	0.25	0.13	0.020
Benzo(a)pyrene	3.8	1.3	0.34	0.055
Benzo(b)fluoranthene	2.6	0.83	0.32	0.051
Benzo(e)pryene	2.1	0.91	0.43	0.069
Benzo(g,h,i)perylene	4.5	1.1	0.24	0.039
Benzo(k)fluoranthene	1.5	0.38	0.25	0.041
Chrysene	2	0.35	0.18	0.028
Dibenzo(a,i)pyrene	1.4	0.44	0.31	0.050
Dibenzo(a,j)anthracene	0.87	0.32	0.37	0.059
Fluoranthene	2.4	0.19	0.079	0.013
Fluorene	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	3.1	1.3	0.42	0.067
Naphthalene	ND	ND	ND	ND
Perylene	1.2	0.3	0.25	0.040
Phenanthrene	2.3	0.28	0.12	0.019
Pyrene	2.5	0.23	0.092	0.015
Triphenylene	1.3	0.87	0.67	0.107
		Minimum BAF	**0.051**	**0.0082**
		Maximum BAF	**0.669**	**0.107**
		Average BAF	**0.256**	**0.041**

Notes:
ND = No data available
1 - Source of data is Table 25 in Beyer (1990)
2 - Wet weight BAF was calculated by multiplying the dry weight BAF by 0.16 (percent solids of an earthworm)

APPENDIX H-2

RECEPTOR PROFILES

APPENDIX H.2

The following sections present the receptor profiles for the short-tailed shrew, American robin, meadow vole, and northern bobwhite quail. The majority of the information for the profiles was obtained from the Wildlife Exposure Factors Handbook (USEPA, 1993). The data for the incidental soil ingestion rates were obtained from the Estimates of Soil Ingestion by Wildlife (Beyer, 1994) or the draft USEPA Ecological Soil Screening Guidance (USEPA, July 2000).

The food and water ingestion rates are typically reported in g/g (of body weight)-day on a wet weight basis, but the values were converted to a dry weight basis for the ERA. The home ranges are presented in hectares in USEPA (1993) but were converted to acres by multiplying the number of hectares by 2.471. The estimated percent of soil in the diets are listed in dry weight. Appendix Table H.2-1 presents the calculation of the exposure parameters and how the calculations were done.

Short-Tailed Shrew (*Blarina brevicauda*)

Shrews inhabit a wide variety of habitats and are common in areas with abundant vegetative cover. They need cool, moist habitats because of their high metabolic and water-loss rates. The short-tailed shrew is primarily carnivorous, eating insects such as earthworms, slugs, and snails.

The adult body weight for the short-tailed shrew in various habitats ranged from 0.015 to 0.01921 kg with an average of 0.0161 kg. The listed food ingestion rates for shrews are 0.49 and 0.62 g/g-day (wet-weight). The water ingestion rate was listed as 0.223 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in Appendix Table H.2-1. The food ingestion rates were then multiplied by 0.16, which is the percent solids of worms (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate was calculated by multiplying the food ingestion rate by the percentage of soil that is incidentally ingested (used 3 percent for conservative food chain model and 1.5 percent for the average food chain model) from USEPA (July 2000). 3 percent is the 90^{th} percentile value and 1.5 percent is the 50^{th} percentile value from USEPA (July 2000). The home range for the shrew (0. 9699 acres) was calculated using data from a tamarek bog in Manitoba (only value available).

American Robin (*Turdus migratorius*)

American robins' habitats include parks, lawns, moist forests, swamps, open woodlands, and orchards. Robins forage on the ground in open areas, along habitat edges, or the edges of streams. They also may forage above ground in shrubs and within the lower branches of trees. In the months

preceding and during the breeding season, robins feed primarily on invertebrates and on some fruits. During the rest of the year their diet consists primarily of fruits.

The adult body weight for the American robin in New York woodlands and forests and in Pennsylvania ranged from 0.0773 to 0.0862 kg with an average of 0.0804 kg. The only listed food ingestion rates were for robins in Kansas (1.52 g/g-day) and California (0.89 g/g-day), with an average of 1.205 g/g-day. The water ingestion rate was estimated as 0.14 g/g-day. Studies calculating food ingestion rates for the robin included in the USEPA (December 1993) are based on a diet comprised of berries. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in Appendix Table H.2-1. The food ingestion rates were then multiplied by 0.23, which is the percent solids of fruit (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. Because it is assumed that 100 percent of the robin's diet is worms for the food chain models, the ingestion rate for the robin was calculated using field metabolism scaling (Nagy et al., 1999) as presented in Appendix Table H.2-1. These are the values that were used in the food chain model for this site.

The incidental soil ingestion rate was calculated by multiplying the food ingestion rate by the percentage of soil that is incidentally ingested (assumed 3 percent for conservative food chain model and 1.5 percent for the average food chain model) from USEPA (2000). The 3 percent and 1.5 percent values are from the shrew since it is assumed that both the shrew and robin are consuming 100 percent worms, and no incidental soil ingestion rate was available for the robin.

The home range for the robin was calculated using data from Tennessee and a New York dense conifer forest. The values ranged from 0.27 to 1.04 acres with an average home range of 0.6095 acres.

Meadow Vole (*Microtus pennsylvanicus*)

Meadow voles inhabit grassy fields, marshes, and bogs; however, they prefer fields with more grass, more cover, and fewer woody plants. They typically consume green succulent vegetation, sedges, seeds, roots, bark, fungi, insects, and animal matter. However, green succulent vegetation makes up the majority of their diet.

The adult body weight for the vole ranges from 0.017 to 0.0524 kg with an average of 0.0358 kg. The only listed food ingestion rates for voles range from 0.30 to 0.35 g/g-day (wet-weight), with an average of 0.325 g/g-day. The water ingestion rates are 0.14 (estimated) and 0.21 g/g-day, with an average of 0.175 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in Appendix Table H.2-1. The food ingestion rates were then multiplied by 0.30, which is

the percent solids of young grass (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate is calculated by multiplying the food ingestion rate by the percentage of soil that is incidentally ingested (2.4 percent) from Beyer (1994). The home range for the meadow vole ranges from 0.000494 to 0.2051 acres with an average home range of 0.0659 acres.

Northern Bobwhite Quail (*Colinus virginianus*)

Quails inhabit grasslands, idle fields, pastures, and large clumps of grasses. Bobwhite quails forage in areas with open vegetation, some bare ground, and light litter. Seeds from weeds, woody plants, and grasses comprise the majority of an adult's diet, although green vegetation has been found to dominate the diet of this species in winter in the southern areas of the United States.

The adult body weight for the bobwhite quail ranges from 0.154 to 0.1939 kg with an average of 0.1751 kg. The listed food ingestion rates for quails range from 0.067 to 0.093 g/g-day (wet-weight), with an average of 0.078 g/g-day. The water ingestion rate is estimated as 0.10 and 0.11 g/g-day, and measured as 0.10 to 0.13 g/g-day, for an average water ingestion rate of 0.11 g/g-day. The food and water ingestion rates in kg/day and L/day, respectively, were calculated as shown in Appendix Table H.2-1. The food ingestion rates were then multiplied by 0.30, which is the percent solids of young grass (Sample et al., 1997) to convert the ingestion rate from a wet-weight value to a dry-weight value. The incidental soil ingestion rate is calculated by multiplying the food ingestion rate by the percentage of soil that is incidentally ingested (8.2 percent). The 8.2 percent is based on the incidental sediment ingestion rate of a Canada goose (Beyer, 1994), which also consumes terrestrial vegetation, because an incidental soil ingestion rate was not available for the quail.

The home range for the quail ranges from 8.9 to 41.3 acres with an average home range of 18.8 acres.

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APPENDIX TABLE H.2-1

DRY WEIGHT DERIVATION OF BODY WEIGHT, FOOD INTAKE, AND WATER INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Data from EPA (1993)				Derivation of Factors for Modeling		
Species/Factor	Age/Sex/ Cond./Seas.	Value	Study Average	Calculation of Values		Notes
American Robin						
Body Weight (g)	A B	77.3	77.3	Minimum Value	0.0773 kg	
				Maximum Value	0.0862 kg	
	A M nonbreeding	86.2		Overall Study Average	0.0804 kg	
	A F nonbreeding	83.6	84.9			
	A M breeding	77.4				
	A F breeding	80.6	79			
Food Ingestion Rate (g/g-day)	B B free-living	0.89		*For Eating Mostly Fruit*		
				Conservative value:	0.0281 kg/day	Maximum ingestion rate * Average Body weight * 0.23 [1]
	- B free-living	1.52		Average value	0.0223 kg/day	Average ingestion rate * Average Body weight * 0.23 [1]
						[1] - 0.23 = percent solids in fruit to convert to a dry weight ingestion rate
	Overall Study Average		1.21			
				Based on Metabolic Scaling		
					0.01247 kg/day	Used maximum body weight in below equation
					0.01188 kg/day	Used average body weight in below equation
						Food ingestion rates were calculated from Nagy et al., (1999) for insectivores as follows: FI = $(9.7*BW(g)^{0.706})/18kJ/g/1000$
Water Ingestion Rate (g/g-day)	A B	0.14		Conservative value:	0.012 L/day	Ingestion rate * Maximum Body weight
				Average value	0.011 L/day	Ingestion rate * Average Body weight
Short-Tailed Shrew						
Body Weight (g)	A B	15	15	Minimum Value	0.0150 kg	
				Maximum Value	0.01921 kg	
	M summer	19.21	17.27	Overall Study Average	0.01613 kg	
	F summer	17.4				
	M fall	16.87				
	M fall	15.58				
Food Ingestion Rate (g/g-day)	A B	0.49		Conservative value:	0.0016 kg/day	Maximum ingestion rate * Average Body weight * 0.16 [1]
	A B	0.62		Average value	0.00143 kg/day	Average ingestion rate * Average Body weight * 0.16 [1]
	Overall Study Average		0.555			[1] - 0.16 = percent solids in earthworms to convert to a dry weight ingestion rate
Water Ingestion Rate (g/g-day)	A B	0.223		Conservative value:	0.00428 L/day	Ingestion rate * Maximum Body weight
				Average value	0.00360 L/day	Ingestion rate * Average Body weight

APPENDIX TABLE H.2-1

DRY WEIGHT DERIVATION OF BODY WEIGHT, FOOD INTAKE, AND WATER INTAKE FACTORS FOR TERRESTRIAL FOOD CHAIN MODELS
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Data from EPA (1993)				Derivation of Factors for Modeling		
Species/Factor	Age/Sex/ Cond./Seas.	Value	Study Average	Calculation of Values		Notes
Meadow Vole						
Body Weight (g)	A M summer	40	36.7	Minimum Value	0.017 kg	
	A F summer	33.4		Maximum Value	0.052 kg	
				Overall Study Average	0.0358 kg	
	A M spring	52.4	48.0			
	A F spring	43.5				
	A B spring	26	21.2			
	A B summer	24.3				
	A B fall	17				
	A B winter	17.5				
	A M	35.5	37.3			
	A F	39				
Food Ingestion Rate (g/g-day)		0.3	0.33	Conservative value:	0.003756 kg/day	Maximum ingestion rate * Average Body weight * 0.3 [1]
		0.35		Average value	0.003488 kg/day	Average ingestion rate * Average Body weight * 0.3 [1]
						[1] - 0.30 = percent solids in grass to convert to a dry weight ingestion rate
Water Ingestion Rate	A B	0.21	0.18	Conservative value:	0.007513 L/day	Maximum ingestion rate * Average Body weight
	A B	0.14		Average value	0.006261 L/day	Average ingestion rate * Average Body weight
Northern Bobwhite Quail						
Body Weight (g)	A B fall	189.9	191	Minimum Value	0.154 kg	
	A B winter	193.9		Maximum Value	0.194 kg	
	A B spring	190		Overall Study Average	0.1751 kg	
	A M winter	181	177			
	A M summer	163				
	A F winter	183				
	A F summer	180				
	A M winter	161	157			
	A M summer	154				
	A F winter	157				
	A F summer	157				
Food Ingestion Rate (g/g-day)	A B winter	0.093	0.078	Conservative value:	0.00488 kg/day	Maximum ingestion rate * Average Body weight * 0.3 [1]
	A B spring	0.067				
	A B summer	0.079		Average value	0.00408 kg/day	Average ingestion rate * Average Body weight * 0.3 [1]
	A B fall	0.072				
						[1] - 0.30 = percent solids in grass to convert to a dry weight ingestion rate
Water Ingestion Rate (g/g-day)	A M summer	0.1	0.11	Conservative value:	0.0227616 L/day	Maximum ingestion rate * Average Body weight
	A F summer	0.13				
	A M summer	0.11		Average value	0.0192598 L/day	Average ingestion rate * Average Body weight
	A F summer	0.1				

Notes:
A = Adult
F = Female, M = Male, B = Both
BW = Body Weight

APPENDIX H-3
BIRD AND MAMMAL
TOXICITY REFERENCE VALUES

APPENDIX H.3

SOURCES AND ENPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

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NOTE: Some of the references in this list are not referenced in the proceeding table. This reference list also includes other toxicity values not used in the development of the terrestrial reference values.

APPENDIX TABLE H.3-1

TOXICITY REFERENCE VALUES
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

PARAMETER	Mammal		Bird	
	NOAEL	LOAEL	NOAEL	LOAEL
SEMIVOLATILES (mg/kg)				
Benzo(a)anthracene	0.17	1.7	2	20
Benzo(a)pyrene	1	10	2	20
Benzo(b)fluoranthene	4	40	2	20
Benzo(g,h,i)perylene	7.2	72	2	20
Benzo(k)fluoranthene	7.2	72	2	20
Chrysene	0.17	1.7	2	20
Fluoranthene	12.5	25	2	20
Indeno(1,2,3-cd)pyrene	7.2	72	2	20
Phenanthrene	1	10	2	20
Pyrene	7.5	12.5	2	20
PCBs (mg/kg)				
Aroclor-1260	0.068	0.68	0.18	1.8
INORGANICS (mg/kg)				
Arsenic	0.126	1.26	2.46	7.38
Cadmium	1	10	1.45	20
Chromium	3.28	13.14	1	5
Copper	11.71	15.14	46.97	61.72
Lead	8	80	1.13	11.3
Mercury	0.032	0.16	0.0064	0.064
Nickel	40	80	77.4	107
Selenium	0.2	0.33	0.4	0.8
Silver	2.38	23.8	5.44	54.4
Zinc	160	320	14.49	130.9

Notes:

The sources of these NOAELS and LOAELS are presented in the table titled "Sources and Endpoints for NOAELS and LOAELS for Terrestrial Wildlife" in this appendix.

The NOAELS and LOAELS in the source table were divided by 10 if a subchronic study was the basis for the value. Also, if only a NOAEL was available, the value was multiplied by 10 to estimate the LOAEL. If only a LOAEL was available, the value was divided by 10 to estimate the NOAEL.

APPENDIX TABLE H.3-2

SOURCES AND ENDPOINTS FOR NOAELS AND LOAELS FOR TERRESTRIAL WILDLIFE
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

	Concentration			Chronic/			
Parameters	**(mg/kg-day)**	**Endpoint**	**Effect**	**Subchronic**	**Species**	**Primary Reference**	**Source of Reference**
Semivolatiles Organics							
Benzo(a)anthracene	17.1	NOAEL	carcinogenic	acute	mouse	Clayson et al., 1968	PRC, 1996
Benzo(a)pyrene	10	LOAEL	reproductive	chronic	mouse	Mackenzie and Angevine, 1981	Sample et.al., 1996
Benzo(b)fluoranthene	40	LOAEL	carcinogenic	chronic	rodent	Lo and Sandi, 1978	PRC, 1996
Benzo(g,h,i)perylene	72	LOAEL	carcinogenic	chronic	rodent	Simms and Overcash, 1983	PRC, 1996
Benzo(k)fluoranthene	72	LOAEL	carcinogenic	chronic	rodent	Lo and Sandi, 1978	PRC, 1996
Chrysene	17.1	NOAEL	carcinogenic	acute	mouse	Clayson et al., 1968	PRC, 1996
Fluoranthene	125	NOAEL	systemic	subchronic	mouse	USEPA, 1988	IRIS, 2002
Fluoranthene	250	LOAEL	systemic	subchronic	mouse	USEPA, 1988	IRIS, 2002
Indeno(1,2,3-cd)pyrene	72	LOAEL	carcinogenic	chronic	rodent	Simms and Overcash, 1983	PRC, 1996
Pyrene	75	NOAEL	systemic	subchronic	mouse	USEPA, 1989c	IRIS, 2002
Pyrene	125	LOAEL	systemic	subchronic	mouse	USEPA, 1989c	IRIS, 2002
Pesticides							
Aroclor-1242	0.685	LOAEL	reproduction	chronic	mink	Bleavins et al., 1980	Sample et.al., 1996
Aroclor-1242	0.41	NOAEL	reproduction	chronic	screech owl	McLane and Hughes, 1980	Sample et.al., 1996
Aroclor-1248	0.1	LOAEL	reproductive	chronic	rhesus monkey	Barsotti et al., 1976	Sample et.al., 1996
Aroclor-1254	1.8	LOAEL	reproductive	chronic	pheasant	Dahlgren et al., 1972	Sample et.al., 1996
Aroclor-1254	0.68	LOAEL	reproduction	chronic	mouse	McCoy et al., 1995	Sample et.al., 1996
Inorganics							
Arsenic	1.261	LOAEL	reproductive	chronic	mouse	Schroeder and Mitchner, 1971	Sample et.al., 1996
Arsenic	2.46	NOAEL	mortality	chronic	brown-headed cowbird	USFWS, 1969	Sample et.al., 1996
Arsenic	7.38	LOAEL	mortality	chronic	brown-headed cowbird	USFWS, 1969	Sample et.al., 1996
Cadmium	1	NOAEL	reproductive	chronic	rat	Sutou et al., 1980	Sample et.al., 1996
Cadmium	10	LOAEL	reproductive	chronic	rat	Sutou et al., 1980	Sample et.al., 1996
Cadmium	1.45	NOAEL	reproductive	chronic	mallard duck	White and Finely, 1978	Sample et.al., 1996
Cadmium	20	LOAEL	reproductive	chronic	mallard duck	White and Finely, 1978	Sample et.al., 1996
Chromium(III)	1	NOAEL	reproductive	chronic	black duck	Haseltine et al., unpubl.	Sample et.al., 1996
Chromium(III)	5	LOAEL	reproductive	chronic	black duck	Haseltine et al., unpubl.	Sample et.al., 1996
Chromium(VI)	3.28	NOAEL	BW/food cons.	chronic	rat	Mackenzie et al., 1958	Sample et.al., 1996
Chromium(VI)	131.4	LOAEL	mortality	subchronic	rat	Steven et al., 1976	Sample et.al., 1996
Copper	11.71	NOAEL	reproductive	chronic	mink	Aulerich et al., 1982	ATSDR, 1989
Copper	15.14	LOAEL	reproductive	chronic	mink	Aulerich et al., 1982	ATSDR, 1989
Copper	46.97	NOAEL	mortality	chronic	chicks	Mehring et al., 1960	Sample et.al., 1996
Copper	61.72	LOAEL	mortality	chronic	chicks	Mehring et al., 1960	Sample et.al., 1996
Lead	8	NOAEL	reproductive	chronic	rat	Azar et al., 1973	Sample et.al., 1996
Lead	80	LOAEL	reproductive	chronic	rat	Azar et al., 1973	Sample et.al., 1996
Lead	1.13	NOAEL	reproductive	chronic	Japanese quail	Edens et al., 1976	Sample et.al., 1996
Lead	11.3	LOAEL	reproductive	chronic	Japanese quail	Edens et al., 1976	Sample et.al., 1996
Mercury	0.064	LOAEL	reproductive	chronic	mallard duck	Heinz, 1979	Sample et.al., 1996
Mercury	0.032	NOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Mercury	0.16	LOAEL	reproductive	chronic	rat	Verschuuren et al., 1976	Sample et.al., 1996
Nickel	40	NOAEL	reproductive	chronic	rat	Ambrose et al., 1976	Sample et.al., 1996
Nickel	80	LOAEL	reproductive	chronic	rat	Ambrose et al., 1976	Sample et.al., 1996
Nickel	77.4	NOAEL	mortality	chronic	mallard duck	Cain and Pafford, 1981	Sample et.al., 1996
Nickel	107	LOAEL	mortality	chronic	mallard duck	Cain and Pafford, 1981	Sample et.al., 1996
Selenium	0.4	NOAEL	reproductive	chronic	mallard duck	Heinz et al., 1989	Sample et.al., 1996
Selenium	0.8	LOAEL	reproductive	chronic	mallard duck	Heinz et al., 1989	Sample et.al., 1996
Selenium	0.2	NOAEL	reproductive	chronic	rat	Rosenfeld and Beath, 1954	Sample et.al., 1996
Selenium	0.33	LOAEL	reproductive	chronic	rat	Rosenfeld and Beath, 1954	Sample et.al., 1996
Silver	54.4	LOAEL	survival	chronic	chicks	Petersen and Jensen, 1975	
Silver	23.81	LOAEL	weight loss	chronic	mouse	Rungby and Danscher, 1984	
Zinc	160	NOAEL	reproductive	chronic	rat	Schlicker and Cox, 1968	Sample et.al., 1996
Zinc	320	LOAEL	reproductive	chronic	rat	Schlicker and Cox, 1968	Sample et.al., 1996
Zinc	14.49	NOAEL	reproductive	chronic	white leghorn hen	Stahl et al., 1990	Sample et.al., 1996
Zinc	130.9	LOAEL	reproductive	chronic	white leghorn hen	Stahl et al., 1990	Sample et.al., 1996

Notes: The NOAELS and LOAELS for the PAHs that do not have values are based on the benzo(a)pyrene values
The NOAELS and LOAELS for the PAHs for birds were based on 7,12-dimethylbenz(a)anthracene.

APPENDIX H-4

FOOD CHAIN MODEL

CALCULATION SHEETS

SHORT-TAILED SHREW - MAXIMUM CONCENTRATIONS AND CONSERVATIVE INPUT PARAMETERS (STEP 2)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Max Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
Semivolatiles								
Benzo(a)anthracene	2.10E-01	6.69E-01	1.40E-01	1.57E-02	1.70E-01	1.70E+00	9.21E-02	9.21E-03
Benzo(a)pyrene	1.30E+00	6.69E-01	8.70E-01	9.69E-02	1.00E+00	1.00E+01	9.69E-02	9.69E-03
Benzo(b)fluoranthene	4.30E-01	6.69E-01	2.88E-01	3.21E-02	4.00E+00	4.00E+01	8.02E-03	8.02E-04
Benzo(g,h,i)perylene	5.90E-01	6.69E-01	3.95E-01	4.40E-02	7.20E+00	7.20E+01	6.11E-03	6.11E-04
Benzo(k)fluoranthene	1.80E-01	6.69E-01	1.20E-01	1.34E-02	7.20E+00	7.20E+01	1.86E-03	1.86E-04
Chrysene	4.10E-01	6.69E-01	2.74E-01	3.06E-02	1.70E-01	1.70E+00	1.80E-01	1.80E-02
Fluoranthene	2.80E-01	6.69E-01	1.87E-01	2.09E-02	1.25E+01	2.50E+01	1.67E-03	8.35E-04
Indeno(1,2,3-cd)pyrene	2.30E-01	6.69E-01	1.54E-01	1.71E-02	7.20E+00	7.20E+01	2.38E-03	2.38E-04
Phenanthrene	7.70E-02	6.69E-01	5.15E-02	5.74E-03	1.00E+00	1.00E+01	5.74E-03	5.74E-04
Pyrene	2.80E-01	6.69E-01	1.87E-01	2.09E-02	7.50E+00	1.25E+01	2.78E-03	1.67E-03
Total PAH	2.32E+00	NV	NV	NV	NV	NV	NV	NV
PCBs								
Aroclor-1260	2.20E-01	1.59E+01	3.50E+00	3.74E-01	6.80E-02	6.80E-01	5.50E+00	5.50E-01
Metals								
Arsenic	1.07E+01	5.23E-01	5.60E+00	6.31E-01	1.26E-01	1.26E+00	5.01E+00	5.01E-01
Cadmium	2.40E-01	4.07E+01	9.77E+00	1.04E+00	1.00E+00	1.00E+01	1.04E+00	1.04E-01
Chromium	2.09E+01	3.16E+00	6.61E+01	7.12E+00	3.28E+00	1.31E+01	2.17E+00	5.42E-01
Copper	2.11E+01	1.53E+00	3.23E+01	3.51E+00	1.17E+01	1.51E+01	3.00E-01	2.32E-01
Lead	7.10E+01	1.52E+00	1.08E+02	1.18E+01	8.00E+00	8.00E+01	1.47E+00	1.47E-01
Mercury	4.00E-01	2.06E+01	8.25E+00	8.81E-01	3.20E-02	1.60E-01	2.75E+01	5.51E+00
Nickel	1.42E+01	4.73E+00	6.72E+01	7.21E+00	4.00E+01	8.00E+01	1.80E-01	9.01E-02
Selenium	1.50E+00	1.34E+00	2.01E+00	2.19E-01	2.00E-01	3.30E-01	1.10E+00	6.64E-01
Silver	2.30E+00	1.53E+01	3.53E+01	3.77E+00	2.38E+00	2.38E+01	1.58E+00	1.58E-01
Zinc	5.32E+01	1.29E+01	6.85E+02	7.33E+01	1.60E+02	3.20E+02	4.58E-01	2.29E-01

Body Weight = (BW) 0.0150000 kg
Food Ingestion Rate = (If) 0.0016000 kg/day
Soil Ingestion Rate = (Is) 0.0000480 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
tarninant conc. in invertebrates (=soil conc.* Biotransfer Factor)
on of food intake from the contaminated area (assume = 1)

- Cells are shaded if the EEQ is greater than 1.0

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level
NV = No value

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SHORT-TAILED SHREW - 95% UCL CONCENTRATION AND AVERAGE INPUT PARAMETERS (STEP 3A)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	95% UCL Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
PCBs								
Aroclor-1260	7.42E-02	6.67E+00	4.95E-01	4.40E-02	6.80E-02	6.80E-01	6.46E-01	6.46E-02
Metals								
Silver	5.10E-01	2.05E+00	1.04E+00	9.31E-02	2.38E+00	2.38E+01	3.91E-02	3.91E-03

Body Weight = (BW) 0.0161300 kg
Food Ingestion Rate = (If) 0.0014300 kg/day
Soil Ingestion Rate = (Is) 0.0000215 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Ci = Contaminant conc. in invertebrates (=soil conc.* Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level

SHORT-TAILED SHREW - AVERAGE CONCENTRATIONS AND AVERAGE INPUT PARAMETERS (STEP 3A)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Avg Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
PCBs								
Aroclor-1260	4.29E-02	6.67E+00	2.86E-01	2.54E-02	6.80E-02	6.80E-01	3.74E-01	3.74E-02
Metals								
Silver	2.60E-01	2.05E+00	5.32E-01	4.75E-02	2.38E+00	2.38E+01	2.00E-02	2.00E-03

Body Weight = (BW) 0.0161300 kg
Food Ingestion Rate = (If) 0.0014300 kg/day
Soil Ingestion Rate = (Is) 0.0000215 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Ci = Contaminant conc. in invertebrates (=soil conc.* Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level

AMERICAN ROBIN - MAXIMUM CONCENTRATIONS AND CONSERVATIVE INPUT PARAMETERS (STEP 2)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Max Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
Semivolatiles								
Benzo(a)anthracene	2.10E-01	6.69E-01	1.40E-01	2.37E-02	2.00E+00	2.00E+01	1.18E-02	1.18E-03
Benzo(a)pyrene	1.30E+00	6.69E-01	8.70E-01	1.47E-01	2.00E+00	2.00E+01	7.33E-02	7.33E-03
Benzo(b)fluoranthene	4.30E-01	6.69E-01	2.88E-01	4.85E-02	2.00E+00	2.00E+01	2.42E-02	2.42E-03
Benzo(g,h,i)perylene	5.90E-01	6.69E-01	3.95E-01	6.65E-02	2.00E+00	2.00E+01	3.33E-02	3.33E-03
Benzo(k)fluoranthene	1.80E-01	6.69E-01	1.20E-01	2.03E-02	2.00E+00	2.00E+01	1.01E-02	1.01E-03
Chrysene	4.10E-01	6.69E-01	2.74E-01	4.62E-02	2.00E+00	2.00E+01	2.31E-02	2.31E-03
Fluoranthene	2.80E-01	6.69E-01	1.87E-01	3.16E-02	2.00E+00	2.00E+01	1.58E-02	1.58E-03
Indeno(1,2,3-cd)pyrene	2.30E-01	6.69E-01	1.54E-01	2.59E-02	2.00E+00	2.00E+01	1.30E-02	1.30E-03
Phenanthrene	7.70E-02	6.69E-01	5.15E-02	8.68E-03	2.00E+00	2.00E+01	4.34E-03	4.34E-04
Pyrene	2.80E-01	6.69E-01	1.87E-01	3.16E-02	2.00E+00	2.00E+01	1.58E-02	1.58E-03
Total PAH	2.32E+00	NV	NV	NV	NV	NV	NV	NV
PCBs								
Aroclor-1260	2.20E-01	1.59E+01	3.50E+00	5.66E-01	1.80E-01	1.80E+00	3.14E+00	3.14E-01
Metals								
Arsenic	1.07E+01	5.23E-01	5.60E+00	9.55E-01	2.46E+00	7.38E+00	3.88E-01	1.29E-01
Cadmium	2.40E-01	4.07E+01	9.77E+00	1.58E+00	1.45E+00	2.00E+01	1.09E+00	7.88E-02
Chromium	2.09E+01	3.16E+00	6.61E+01	1.08E+01	1.00E+00	5.00E+00	1.08E+01	2.15E+00
Copper	2.11E+01	1.53E+00	3.23E+01	5.31E+00	4.70E+01	6.17E+01	1.13E-01	8.61E-02
Lead	7.10E+01	1.52E+00	1.08E+02	1.78E+01	1.13E+00	1.13E+01	1.57E+01	1.57E+00
Mercury	4.00E-01	2.06E+01	8.25E+00	1.33E+00	6.40E-03	6.40E-02	2.08E+02	2.08E+01
Nickel	1.42E+01	4.73E+00	6.72E+01	1.09E+01	7.74E+01	1.07E+02	1.41E-01	1.02E-01
Selenium	1.50E+00	1.34E+00	2.01E+00	3.32E-01	4.00E-01	8.00E-01	8.29E-01	4.14E-01
Silver	2.30E+00	1.53E+01	3.53E+01	5.70E+00	5.44E+00	5.44E+01	1.05E+00	1.05E-01
Zinc	5.32E+01	1.29E+01	6.85E+02	1.11E+02	1.45E+01	1.31E+02	7.65E+00	8.47E-01

Body Weight = (BW) 0.0773000 kg
Food Ingestion Rate = (If) 0.0124700 kg/day
Soil Ingestion Rate = (Is) 0.0003741 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Ci = Contaminant conc in invertebrates (=soil conc. * Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- Cells are shaded if the EEQ is greater than 1.0

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level
NV = No value

AMERICAN ROBIN - 95% UCL CONCENTRATION AND AVERAGE INPUT PARAMETERS (STEP 3A)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	95% UCL Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
PCBs								
Aroclor-1260	7.42E-02	6.67E+00	4.95E-01	7.33E-02	1.80E-01	1.80E+00	4.07E-01	4.07E-02
Metals								
Silver	5.10E-01	2.05E+00	1.04E+00	1.55E-01	5.44E+00	5.44E+01	2.85E-02	2.85E-03

Body Weight = (BW) 0.0804000 kg
Food Ingestion Rate = (If) 0.0118800 kg/day
Soil Ingestion Rate = (Is) 0.0001782 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Ci = Contaminant conc in invertebrates (=soil conc.*Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level

AMERICAN ROBIN - AVERAGE CONCENTRATIONS AND AVERAGE INPUT PARAMETERS (STEP 3A)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Avg Soil Concentration (mg/kg)	Biotransfer Factor (soil to inv.)	Invertebrate Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
PCBs								
Aroclor-1260	4.29E-02	6.67E+00	2.86E-01	4.24E-02	1.80E-01	1.80E+00	2.35E-01	2.35E-02
Metals								
Silver	2.60E-01	2.05E+00	5.32E-01	7.91E-02	5.44E+00	5.44E+01	1.45E-02	1.45E-03

Body Weight = (BW) 0.0804000 kg
Food Ingestion Rate = (If) 0.0118800 kg/day
Soil Ingestion Rate = (Is) 0.0001782 kg/day

Dose=(If*Ci+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Ci = Contaminant conc in invertebrates (=soil conc.*Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- This table only presents the EEQs for contaminants that had EEQs greater than 1.0 using the maximum concentrations and conservative input parameters, and were detected above background concentrations (for inorganic chemicals)

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level

MEADOW VOLE - MAXIMUM CONCENTRATIONS AND CONSERVATIVE INPUT PARAMETERS (STEP 2)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Max Soil Concentration (mg/kg)	Biotransfer Factor (soil to plant)	Plant Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
Semivolatiles								
Benzo(a)anthracene	2.10E-01	1.90E-02	3.99E-03	2.00E-03	1.70E-01	1.70E+00	1.17E-02	1.17E-03
Benzo(a)pyrene	1.30E+00	1.10E-02	1.43E-02	1.01E-02	1.00E+00	1.00E+01	1.01E-02	1.01E-03
Benzo(b)fluoranthene	4.30E-01	1.10E-02	4.73E-03	3.33E-03	4.00E+00	4.00E+01	8.31E-04	8.31E-05
Benzo(g,h,i)perylene	5.90E-01	5.60E-03	3.30E-03	3.86E-03	7.20E+00	7.20E+01	5.36E-04	5.36E-05
Benzo(k)fluoranthene	1.80E-01	4.30E-03	7.74E-04	1.13E-03	7.20E+00	7.20E+01	1.56E-04	1.56E-05
Chrysene	4.10E-01	1.90E-02	7.79E-03	3.90E-03	1.70E-01	1.70E+00	2.29E-02	2.29E-03
Fluoranthene	2.80E-01	5.50E-02	1.54E-02	4.89E-03	1.25E+01	2.50E+01	3.91E-04	1.95E-04
Indeno(1,2,3-cd)pyrene	2.30E-01	5.60E-03	1.29E-03	1.50E-03	7.20E+00	7.20E+01	2.09E-04	2.09E-05
Phenanthrene	7.70E-02	8.20E-02	6.31E-03	1.80E-03	1.00E+00	1.00E+01	1.80E-03	1.80E-04
Pyrene	2.80E-01	5.50E-02	1.54E-02	4.89E-03	7.50E+00	1.25E+01	6.52E-04	3.91E-04
Total PAH	2.32E+00	NV	NV	NV	NV	NV	NV	NV
PCBs								
Aroclor-1260	2.20E-01	2.90E-03	6.38E-04	1.31E-03	6.80E-02	6.80E-01	1.92E-02	1.92E-03
Metals								
Arsenic	1.07E+01	1.10E+00	1.18E+01	2.66E+00	1.26E-01	1.26E+00	2.11E+01	2.11E+00
Cadmium	2.40E-01	3.25E+00	7.80E-01	1.74E-01	1.00E+00	1.00E+01	1.74E-01	1.74E-02
Chromium	2.09E+01	8.39E-02	1.75E+00	4.98E-01	3.28E+00	1.31E+01	1.52E-01	3.79E-02
Copper	2.11E+01	6.25E-01	1.32E+01	3.03E+00	1.17E+01	1.51E+01	2.58E-01	2.00E-01
Lead	7.10E+01	4.68E-01	3.32E+01	7.72E+00	8.00E+00	8.00E+01	9.65E-01	9.65E-02
Mercury	4.00E-01	5.00E+00	2.00E+00	4.44E-01	3.20E-02	1.60E-01	1.39E+01	2.78E+00
Nickel	1.42E+01	1.41E+00	2.00E+01	4.50E+00	4.00E+01	8.00E+01	1.13E-01	5.63E-02
Selenium	1.50E+00	3.01E+00	4.52E+00	1.01E+00	2.00E-01	3.30E-01	5.03E+00	3.05E+00
Silver	2.30E+00	3.67E-02	8.44E-02	3.08E-02	2.38E+00	2.38E+01	1.30E-02	1.30E-03
Zinc	5.32E+01	1.82E+00	9.68E+01	2.17E+01	1.60E+02	3.20E+02	1.35E-01	6.77E-02

Body Weight = (BW) 0.0170000 kg
Food Ingestion Rate = (If) 0.0037560 kg/day
Soil Ingestion Rate = (Is) 0.0000901 kg/day

Dose=(If*Cp+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Cp = Contaminant conc. in plants (=soil conc.* Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- Cells are shaded if the EEQ is greater than 1.0

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level
NV = No value

BOBWHITE QUAIL - MAXIMUM CONCENTRATIONS AND CONSERVATIVE INPUT PARAMETERS (STEP 2)
TERRESTRIAL WILDLIFE MODEL ECOLOGICAL EFFECTS QUOTIENT CALCULATION
WOD RI REPORT
NASA WFF, WALLOPS ISLAND, VIRGINIA

Chemical	Max Soil Concentration (mg/kg)	Biotransfer Factor (soil to plant)	Plant Concentration (mg/kg)	Dose (mg/kg/day)	NOAEL (mg/kg/day)	LOAEL (mg/kg/day)	NOAEL EEQn	LOAEL EEQl
Semivolatiles								
Benzo(a)anthracene	2.10E-01	1.90E-02	3.99E-03	6.72E-04	2.00E+00	2.00E+01	3.36E-04	3.36E-05
Benzo(a)pyrene	1.30E+00	1.10E-02	1.43E-02	3.83E-03	2.00E+00	2.00E+01	1.92E-03	1.92E-04
Benzo(b)fluoranthene	4.30E-01	1.10E-02	4.73E-03	1.27E-03	2.00E+00	2.00E+01	6.34E-04	6.34E-05
Benzo(g,h,i)perylene	5.90E-01	5.60E-03	3.30E-03	1.64E-03	2.00E+00	2.00E+01	8.19E-04	8.19E-05
Benzo(k)fluoranthene	1.80E-01	4.30E-03	7.74E-04	4.92E-04	2.00E+00	2.00E+01	2.46E-04	2.46E-05
Chrysene	4.10E-01	1.90E-02	7.79E-03	1.31E-03	2.00E+00	2.00E+01	6.56E-04	6.56E-05
Fluoranthene	2.80E-01	5.50E-02	1.54E-02	1.22E-03	2.00E+00	2.00E+01	6.08E-04	6.08E-05
Indeno(1,2,3-cd)pyrene	2.30E-01	5.60E-03	1.29E-03	6.38E-04	2.00E+00	2.00E+01	3.19E-04	3.19E-05
Phenanthrene	7.70E-02	8.20E-02	6.31E-03	4.00E-04	2.00E+00	2.00E+01	2.00E-04	2.00E-05
Pyrene	2.80E-01	5.50E-02	1.54E-02	1.22E-03	2.00E+00	2.00E+01	6.08E-04	6.08E-05
Total PAH	2.32E+00	NV	NV	NV	NV	NV	NV	NV
PCBs								
Aroclor-1260	2.20E-01	2.90E-03	6.38E-04	5.92E-04	1.80E-01	1.80E+00	3.29E-03	3.29E-04
Metals								
Arsenic	1.07E+01	1.10E+00	1.18E+01	4.02E-01	2.46E+00	7.38E+00	1.63E-01	5.44E-02
Cadmium	2.40E-01	3.25E+00	7.80E-01	2.53E-02	1.45E+00	2.00E+01	1.75E-02	1.27E-03
Chromium	2.09E+01	8.39E-02	1.75E+00	1.10E-01	1.00E+00	5.00E+00	1.10E-01	2.20E-02
Copper	2.11E+01	6.25E-01	1.32E+01	4.73E-01	4.70E+01	6.17E+01	1.01E-02	7.66E-03
Lead	7.10E+01	4.68E-01	3.32E+01	1.24E+00	1.13E+00	1.13E+01	1.10E+00	1.10E-01
Mercury	4.00E-01	5.00E+00	2.00E+00	6.44E-02	6.40E-03	6.40E-02	1.01E+01	1.01E+00
Nickel	1.42E+01	1.41E+00	2.00E+01	6.72E-01	7.74E+01	1.07E+02	8.68E-03	6.28E-03
Selenium	1.50E+00	3.01E+00	4.52E+00	1.47E-01	4.00E-01	8.00E-01	3.68E-01	1.84E-01
Silver	2.30E+00	3.67E-02	8.44E-02	8.65E-03	5.44E+00	5.44E+01	1.59E-03	1.59E-04
Zinc	5.32E+01	1.82E+00	9.68E+01	3.21E+00	1.45E+01	1.31E+02	2.21E-01	2.45E-02

Body Weight = (BW) 0.1540000 kg
Food Ingestion Rate = (If) 0.0048800 kg/day
Soil Ingestion Rate = (Is) 0.0004002 kg/day

Dose=(If*Cp+Is*Cs)(H)/BW

Cs = Contaminant concentration in soil
Cp = Contaminant conc in plants (=soil conc. * Biotransfer Factor)
H = Portion of food intake from the contaminated area (assume = 1)

- Cells are shaded if the EEQ is greater than 1.0

EEQ_l = LOAEL Ecological Effects Quotient
EEQ_n = NOAEL Ecological Effects Quotient
LOAEL = Lowest observed adverse effect level
NOAEL = No observed adverse effect level
NV = No value

APPENDIX I
GROUNDWATER VAPOR EVALUATION

APPENDIX I

PART 1 – VAPOR INTRUSION SCREENING

WASTE OIL DUMP
VADEQ VRP TABLE2.10
MAXIMUM GROUNDWATER CONCENTRATIONS
ASSUMING DEPTH TO GROUNDWATER-12FEET

Revised 12/12/03

Depth to groundwater in feet (enter 4, 8 or 12): 12

le 2.10 Selection of Contaminants of Concer Restricted Groundwater Use Unrestricted (Residential) Land Use Inhalation of Indoor Air	CAS No.	Groundwater Concentration Lwt=4' ug/L	Groundwater Concentration Lwt=8' ug/L	Groundwater Concentration Lwt=12' ug/L	Tier III Groundwater Concentration Lwt=12' ug/L	Maximum Groundwater Concentration ug/L	Contaminant of Potential Concern?
Inorganics							
Aluminum	7429-90-5	5.94E+07	5.94E+07 *	5.94E+07 *	*	8220	
Antimony	7440-36-0	3.85E+07	3.85E+07 *	3.85E+07 *	*		
Arsenic	7440-38-2	3.02E+07	3.02E+07 *	3.02E+07 *	*	21.4	
Barium	7440-39-3	4.10E+07	4.10E+07 *	4.10E+07 *	*	117	
Beryllium	7440-41-7	5.67E+07	5.67E+07 *	5.67E+07 *	*		
Cadmium (water)	7440-43-9	2.98E+07	2.98E+07 *	2.98E+07 *	*	0.92	
Calcium	7440-70-2	3.99E+08	3.99E+08 *	3.99E+08 *		40500	
Chromium	7440-47-3	1.20E+07	1.20E+07 *	1.20E+07 *	*	147	
Cobalt	7440-48-4	2.59E+07	2.59E+07 *	2.59E+07 *	*		
Copper	7440-50-8	2.44E+07	2.44E+07 *	2.44E+07 *	*		
Cyanide	57-12-5	1.00E+09	1.00E+09 *	1.00E+09 *	*		
Iron	7439-89-6	1.60E+07	1.60E+07 *	1.60E+07 *	*	49900	
Lead	7439-92-1	5.00E+07	5.00E+07 *	5.00E+07 *	*	68.6	
Magnesium	7439-95-4	3.25E+08	3.25E+08 *	3.25E+08 *		19900	
Manganese (nonfood)	7439-96-5	4.26E+07	4.26E+07 *	4.26E+07 *	*	641	
Mercuric chloride	7487-94-7	2.76E+07	2.76E+07 *	2.76E+07 *	*		
Mercury	7439-97-6	2.80E+00	1.17E+00	2.76E+00	2.76E+00		
Methylmercury	22967-92-6	3.13E+07	3.13E+07 *	3.13E+07 *	*		
Nickel	7440-02-0	2.54E+07	2.54E+07 *	2.54E+07 *	*	49.1	
Potassium	7440-09-7	5.78E+08	5.78E+08 *	5.78E+08 *		10900	
Selenium	7782-49-2	1.30E+07	1.30E+07 *	1.30E+07 *	*		
Silver	7440-22-4	5.57E+07	5.57E+07 *	5.57E+07 *	*	3.1	
Sodium	7440-23-5	8.83E+07	8.83E+07 *	8.83E+07 *		30200	
Thallium	7440-28-0	5.00E+07	5.00E+07 *	5.00E+07 *	*		
Vanadium	7440-62-2	8.64E+07	8.64E+07 *	8.64E+07 *	*	9.9	
Zinc	7440-66-6	4.32E+07	4.32E+07 *	4.32E+07 *	*		
Volatile Organic Compounds (VOC)							
Acetone	67-64-1	2.06E+06	1.62E+06	2.34E+06	2.34E+06		
Benzene	71-43-2	3.09E+01	1.40E+01	3.09E+01	3.09E+01	1.10E+01	
Bromochloromethane	74-97-5	3.04E+03	1.29E+03	3.00E+03	3.00E+03		
Bromodichloromethane	75-27-4	6.47E+01	2.47E+01	6.25E+01	8.00E+01 (a)		
Bromoform	75-25-2	7.25E+03	2.18E+03	6.62E+03	6.62E+03		
Bromomethane	74-83-9	4.54E+01	1.89E+01	4.47E+01	4.47E+01		
2-Butanone (methyl ethyl ketone)	78-93-3	3.08E+06	2.01E+06	3.31E+06	3.31E+06	6	
Carbon disulfide	75-15-0	1.07E+03	5.21E+02	1.09E+03	1.09E+03		
Carbon tetrachloride	56-23-5	3.20E+00	1.37E+00	3.16E+00	5.00E+00 (a)		
Chlorobenzene	108-90-7	1.20E+03	5.01E+02	1.18E+03	1.18E+03		
Chloroethane	75-00-3	7.40E+01	5.59E+01	8.42E+01	8.42E+01		
Chloroform	67-66-3	1.34E+01	6.58E+00	1.36E+01	8.00E+01 (a)		
Chloromethane	74-87-3	3.54E+02	1.90E+02	3.68E+02	3.68E+02		
Cyclohexane	110-82-7	1.83E+03	8.09E+02	1.82E+03	1.82E+03		
1,2-Dibromo-3-chloropropane	96-12-8	9.08E+01	3.67E+01	8.72E+01	8.72E+01		
Dibromochloromethane	124-48-1	1.45E+02	5.02E+01	1.38E+02	1.38E+02		
1,2-Dibromoethane	106-93-4	1.52E+01	5.58E+00	1.46E+01	1.46E+01		
1,2-Dichlorobenzene (ortho)	95-50-1	6.31E+03	2.61E+03	6.19E+03	6.19E+03		
1,3-Dichlorobenzene (meta)	541-73-1	2.97E+03	1.22E+03	2.92E+03	2.92E+03		
1,4-Dichlorobenzene (para)	106-46-7	1.28E+02	5.26E+01	1.25E+02	1.25E+02		
Dichlorodifluoromethane	75-71-8	3.05E+01	1.26E+01	3.00E+01	3.50E+01 (a)		
1,1-Dichloroethane	75-34-3	5.58E+03	2.35E+03	5.50E+03	5.50E+03		
1,2-Dichloroethane	107-06-2	4.57E+01	2.30E+01	4.67E+01	4.67E+01		
1,1-Dichloroethene	75-35-4	4.08E+02	1.86E+02	4.09E+02	4.09E+02		
1,2-Dichloroethene (total)	540-59-0	3.79E+02	1.72E+02	3.79E+02	3.79E+02		
cis-1,2-Dichloroethene	156-59-2	4.75E+02	2.17E+02	4.76E+02	4.76E+02	3.00E+00	
trans-1,2-Dichloroethene	156-60-5	4.81E+02	1.97E+02	4.72E+02	4.72E+02		
1,2-Dichloropropane	78-87-5	2.82E+01	1.22E+01	2.80E+01	2.80E+01		
1,3-Dichloropropene (total)	542-75-6	2.02E+01	7.83E+00	1.96E+01	1.96E+01		
cis-1,3-Dichloropropene	10061-01-5	2.42E+02	1.05E+02	2.40E+02	2.40E+02		
trans-1,3-Dichloropropene	10061-02-6	3.56E+02	1.56E+02	3.53E+02	3.53E+02		
Ethylbenzene	100-41-4	9.46E+03	3.99E+03	9.33E+03	9.33E+03	6.80E+01	
Hexane	110-54-3	3.71E+00	2.46E+00	4.07E+00	4.20E+01 (a)		
2-Hexanone	591-78-6	2.76E+03	1.57E+03	2.87E+03	2.87E+03		
Isopropylbenzene	98-82-8	3.07E+01	1.21E+01	2.99E+01	6.60E+01 (a)	6	
4-Methyl-2-pentanone (methyl isobutyl k	108-10-1	1.21E+06	6.27E+05	1.23E+06	1.23E+06		

WASTE OIL DUMP
VADEQ VRP TABLE2.10
MAXIMUM GROUNDWATER CONCENTRATIONS
ASSUMING DEPTH TO GROUNDWATER-12FEET

Revised 12/12/03

Depth to groundwater in feet (enter 4, 8 or 12): 12

le 2.10 Selection of Contaminants of Concer Restricted Groundwater Use Unrestricted (Residential) Land Use Inhalation of Indoor Air	CAS No.	Groundwater Concentration Lwt=4' ug/L	Groundwater Concentration Lwt=8' ug/L	Groundwater Concentration Lwt=12' ug/L	Tier III Groundwater Concentration Lwt=12' ug/L	Maximum Groundwater Concentration ug/L	Contaminant of Potential Concern?
Methyl acetate	79-20-9	9.51E+05	5.48E+05	9.98E+05	9.98E+05		
Methyl tert-butyl ether	1634-04-4	1.63E+03	8.31E+02	1.67E+03	1.67E+03		
Methylcyclohexane	108-87-2	5.00E+02	2.03E+02	4.90E+02	6.30E+02 (a)	18	
Methylene chloride	75-09-2	1.07E+03	5.24E+02	1.09E+03	1.09E+03		
Styrene	100-42-5	2.84E+04	1.18E+04	2.80E+04	2.80E+04	5	
1,1,2,2-Tetrachloroethane	79-34-5	7.95E+01	3.60E+01	7.92E+01	7.92E+01		
Tetrachloroethene	127-18-4	1.66E+01	6.83E+00	1.63E+01	1.63E+01	5.00E+00	
Toluene	108-88-3	3.73E+03	1.68E+03	3.73E+03	3.73E+03	1.20E+02	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	6.89E+03	2.17E+03	6.47E+03	6.47E+03		
1,2,3-Trichlorobenzene	87-61-6	4.31E+02	1.46E+02	4.07E+02	4.07E+02		
1,2,4-Trichlorobenzene	120-82-1	4.38E+02	1.36E+02	4.08E+02	4.08E+02		
1,1,1-Trichloroethane	71-55-6	7.99E+03	3.42E+03	7.91E+03	7.91E+03		
1,1,2-Trichloroethane	79-00-5	1.05E+02	4.66E+01	1.04E+02	1.04E+02		
Trichloroethene	79-01-6	1.28E+00	5.52E-01	1.27E+00	5.00E+00 (a)		
Trichlorofluoromethane	75-69-4	3.71E+02	1.67E+02	3.70E+02	3.70E+02		
Vinyl Chloride	75-01-4	4.00E+00	1.97E+00	4.08E+00	4.08E+00		
		8.00E+00	3.95E+00	8.15E+00			
Total Xylenes	1330-20-7	1.51E+03	6.13E+02	1.48E+03	1.00E+04 (a)	5.40E+02	
Semi-Volatile Organic Compounds (SVOC)							
Acenaphthene	83-32-9	4.24E+03	4.24E+03 *	4.24E+03 *	4.24E+03 *	9	
Acenaphthylene	208-96-8	1.61E+04	1.61E+04 *	1.61E+04 *	1.61E+04 *		
Acetophenone	98-86-2	8.20E+05	8.64E+05	1.02E+06	1.02E+06		
Anthracene	120-12-7	4.34E+01	4.34E+01 *	4.34E+01 *	1.80E+02 (a)		
Atrazine	1912-24-9	7.00E+04	7.00E+04 *	7.00E+04 *	7.00E+04 *		
Benzaldehyde	100-52-7	4.47E+05	3.97E+05	5.25E+05	5.25E+05		
Benzo(a)anthracene	56-55-3	9.40E+00	9.40E+00 *	9.40E+00 *	9.40E+00 *		
Benzo(a)pyrene	50-32-8	1.62E+00	1.62E+00 *	1.62E+00 *	1.62E+00 *		
Benzo(b)fluoranthene	205-99-2	1.50E+00	1.50E+00 *	1.50E+00 *	1.50E+00 *		
Benzo(g,h,i)perylene	191-24-2	2.60E-01	2.60E-01 *	2.60E-01 *	1.80E+01 (a)		
Benzo(k)fluoranthene	207-08-9	8.00E-01	8.00E-01 *	8.00E-01 *	9.20E-01 (a)		
1,1'-Biphenyl	92-52-4	7.45E+03	7.45E+03 *	7.45E+03 *	7.45E+03 *		
bis(2-Chloroethoxy)methane	111-91-1	1.21E+08	1.21E+08 *	1.21E+08 *	1.21E+08 *		
bis(2-chloroethyl)ether	111-44-4	1.24E+02	1.11E+02	1.46E+02	1.46E+02		
bis-(2-Ethylhexyl)phthalate	117-81-7	3.40E+02	3.40E+02 *	3.40E+02 *	3.40E+02 *	18	
4-Bromophenyl-phenylether	101-55-3	4.60E+03	4.60E+03 *	4.60E+03 *			
Butylbenzylphthalate	85-68-7	2.69E+03	2.69E+03 *	2.69E+03 *	2.69E+03 *		
Caprolactam	105-60-2	2.87E+07	2.87E+07 *	2.87E+07 *	2.87E+07 *		
Carbazole	86-74-8	7.48E+03	7.48E+03 *	7.48E+03 *	7.48E+03 *		
4-Chloro-3-methylphenol	59-50-7	1.48E+05	1.97E+05	2.05E+05	2.05E+05		
4-Chloroaniline	106-47-8	7.89E+05	1.08E+06	1.09E+06	1.09E+06		
2-Chloronaphthalene	91-58-7	1.17E+04	1.17E+04 *	1.17E+04 *	1.17E+04 *		
2-Chlorophenol	95-57-8	3.47E+03	1.56E+03	3.45E+03	3.45E+03		
4-Chlorophenyl-phenylether	7005-72-3	1.42E+03	1.42E+03 *	1.42E+03 *	(a)		
Chrysene	218-01-9	1.60E+00	1.60E+00 *	1.60E+00 *	9.20E+00 (a)		
Di-n-butylphthalate	84-74-2	1.12E+04	1.12E+04 *	1.12E+04 *	1.12E+04 *		
Di-n-octylphthalate	117-84-0	2.00E+01	2.00E+01 *	2.00E+01 *	1.50E+02 (a)		
Dibenzo(a,h)anthracene	53-70-3	2.49E+00	2.49E+00 *	2.49E+00 *	2.49E+00 *		
Dibenzofuran	132-64-9	1.00E+04	1.00E+04 *	1.00E+04 *	1.00E+04 *	4	
3,3'-Dichlorobenzidine	91-94-1	3.11E+03	3.11E+03 *	3.11E+03 *	3.11E+03 *		
2,4-Dichlorophenol	120-83-2	6.09E+04	7.73E+04	8.26E+04	8.26E+04		
Diethylphthalate	84-66-2	1.08E+06	1.08E+06 *	1.08E+06 *	1.08E+06 *		
2,4-Dimethylphenol	105-67-9	7.06E+05	9.51E+05	9.87E+05	9.87E+05		
Dimethylphthalate	131-11-3	4.00E+06	4.00E+06 *	4.00E+06 *	4.00E+06 *		
4,6-Dinitro-2-methylphenol	534-52-1	1.15E+04	1.63E+04	1.65E+04	1.65E+04		
2,4-Dinitrophenol	51-28-5	9.32E+05	1.12E+06	1.12E+06	1.12E+06		
2,4-Dinitrotoluene	121-14-2	2.70E+05	2.70E+05 *	2.70E+05 *	2.70E+05 *		
2,6-Dinitrotoluene	606-20-2	1.13E+05	1.59E+05	1.61E+05	1.61E+05		
Fluoranthene	206-44-0	2.06E+02	2.06E+02 *	2.06E+02 *	2.06E+02 *		
Fluorene	86-73-7	1.98E+03	1.98E+03 *	1.98E+03 *	1.98E+03 *	12	
Hexachlorobenzene	118-74-1	6.61E+00	2.53E+00	6.38E+00	6.38E+00		
Hexachlorobutadiene	87-68-3	9.63E+00	3.58E+00	9.28E+00	9.28E+00		
Hexachlorocyclopentadiene	77-47-4	1.76E+00	4.98E-01	1.62E+00	5.00E+01 (a)		
Hexachloroethane	67-72-1	1.21E+03	2.54E+02	1.06E+03	1.06E+03		
Indeno(1,2,3-cd)pyrene	193-39-5	2.20E-02	2.20E-02 *	2.20E-02 *	9.20E-02 (a)		
Isophorone	78-59-1	3.07E+05	3.40E+05	3.92E+05	3.92E+05		
2-Methylnaphthalene	91-57-6	1.46E+04	5.85E+03	1.42E+04	1.42E+04	130	

WASTE OIL DUMP
VADEQ VRP TABLE2.10
MAXIMUM GROUNDWATER CONCENTRATIONS
ASSUMING DEPTH TO GROUNDWATER-12FEET

Revised 12/12/03

Depth to groundwater in feet (enter 4, 8 or 12): 12

le 2.10 Selection of Contaminants of Concer Restricted Groundwater Use Unrestricted (Residential) Land Use Inhalation of Indoor Air	CAS No.	Groundwater Concentration Lwt=4' ug/L	Groundwater Concentration Lwt=8' ug/L	Groundwater Concentration Lwt=12' ug/L	Tier III Groundwater Concentration Lwt=12' ug/L	Maximum Groundwater Concentration ug/L	Contaminant of Potential Concern?
2-Methylphenol	95-48-7	2.72E+06	3.76E+06	3.85E+06	3.85E+06		
3-Methylphenol	108-39-4	3.89E+06	5.49E+06	5.57E+06	5.57E+06		
4-Methylphenol	106-44-5	1.18E+05	1.67E+05	1.70E+05	1.70E+05	42	
N-Nitroso-di-n-propylamine	621-64-7	9.73E+01	1.28E+02	1.34E+02	1.34E+02		
N-Nitrosodiphenylamine	86-30-6	3.51E+04	3.51E+04 *	3.51E+04 *	3.51E+04 *		
Naphthalene	91-20-3	5.78E+02	2.40E+02	5.66E+02	5.66E+02	130	
2-Nitroaniline	88-74-4	1.91E+04	2.21E+04	2.22E+04	2.22E+04		
3-Nitroaniline	99-09-2	1.66E+05	1.98E+05	1.98E+05	1.98E+05		
4-Nitroaniline	100-01-6	7.28E+05	7.28E+05 *	7.28E+05 *	7.28E+05 *		
Nitrobenzene	98-95-3	2.73E+03	2.36E+03	3.17E+03	3.17E+03		
2-Nitrophenol	88-75-5	8.45E+04	9.69E+04	1.09E+05	1.09E+05		
4-Nitrophenol	100-02-7	7.37E+06	7.36E+06	7.37E+06	7.37E+06		
2,2'-Oxybis(1-chloropropane)	108-60-1	6.28E+04	2.92E+04	6.26E+04	6.26E+04		
Pentachlorophenol	87-86-5	2.28E+05	2.38E+05	2.39E+05	2.39E+05		
Phenanthrene	85-01-8	1.15E+03	1.15E+03 *	1.15E+03 *	1.15E+03 *	15	
Phenol	108-95-2	4.78E+07	6.75E+07	6.80E+07	6.80E+07		
Pyrene	129-00-0	1.35E+02	1.35E+02 *	1.35E+02 *	1.35E+02 *		
1,2,4,5-Tetrachlorobenzene	95-94-3	9.21E+01	2.86E+01	8.60E+01	8.60E+01		
2,4,5-Trichlorophenol	95-95-4	1.20E+06	1.20E+06 *	1.20E+06 *	1.20E+06 *		
2,4,6-Trichlorophenol	88-06-2	2.62E+04	2.99E+04	3.38E+04	3.38E+04		
Pesticides/Polychlorinated Biphenyls (PCB)							
Aldrin	309-00-2	4.82E+00	2.12E+00	4.64E+00	4.64E+00		
Aroclor-1016	12674-11-2	1.45E+02	5.26E+01	1.36E+02	1.36E+02		
Aroclor-1221	11104-28-2	2.76E+00	7.98E-01	2.55E+00	2.55E+00		
Aroclor-1232	11141-16-5	1.12E+01	3.49E+00	1.04E+01	1.04E+01		
Aroclor-1242	53469-21-9	1.67E+01	5.45E+00	1.56E+01	1.56E+01		
Aroclor-1248	12672-29-6	4.39E+00	1.24E+00	4.04E+00	4.04E+00		
Aroclor-1254	11097-69-1	6.68E+00	1.91E+00	6.16E+00	6.16E+00		
Aroclor-1260	11096-82-5	3.40E+00	9.31E-01	3.12E+00	3.12E+00		
alpha-BHC	319-84-6	5.00E+01	5.70E+01	6.44E+01	6.44E+01		
beta-BHC	319-85-7	2.40E+02	2.40E+02 *	2.40E+02 *	2.40E+02 *		
delta-BHC	319-86-8	3.14E+04	3.14E+04 *	3.14E+04 *	3.14E+04 *		
gamma-BHC (lindane)	58-89-9	2.91E+03	2.94E+03	3.56E+03	3.56E+03		
Chlordane	57-74-9	5.60E+01	5.60E+01 *	5.60E+01 *	5.60E+01 *		
alpha-Chlordane	5103-71-9	4.39E+01	4.39E+01 *	4.39E+01 *	4.39E+01 *		
gamma-Chlordane	5103-74-2	1.88E+01	1.88E+01 *	1.88E+01 *	1.88E+01 *		
4,4'-DDD	72-54-8	9.00E+01	9.00E+01 *	9.00E+01 *	9.00E+01 *		
4,4'-DDE	72-55-9	1.20E+02	1.20E+02 *	1.20E+02 *	1.20E+02 *		
4,4'-DDT	50-29-3	2.50E+01	2.50E+01 *	2.50E+01 *	2.50E+01 *		
Dieldrin	60-57-1	1.69E+01	1.72E+01	2.07E+01	2.07E+01		
Endosulfan	115-29-7	5.10E+02	5.10E+02 *	5.10E+02 *	5.10E+02 *		
Endosulfan I	959-98-8	5.10E+02	5.10E+02 *	5.10E+02 *	5.10E+02 *		
Endosulfan II	33213-65-9	4.50E+02	4.50E+02 *	4.50E+02 *	4.50E+02 *		
Endosulfan Sulfate	1031-07-8	6.45E+03	6.45E+03 *	6.45E+03 *	6.45E+03 *		
Endrin	72-20-8	2.50E+02	2.50E+02 *	2.50E+02 *	2.50E+02 *		
Endrin Aldehyde	7421-93-4	3.13E+03	3.13E+03 *	3.13E+03 *	3.13E+03 *		
Endrin Ketone	53494-70-5	2.22E+02	2.22E+02 *	2.22E+02 *	2.22E+02 *		
Heptachlor	76-44-8	4.57E+00	1.32E+00	4.21E+00	4.21E+00		
Heptachlor epoxide	1024-57-3	3.81E+01	4.25E+01	4.86E+01	4.86E+01		
Methoxychlor	72-43-5	4.50E+01	4.50E+01 *	4.50E+01 *	4.50E+01 *		
Toxaphene	8001-35-2	4.67E+02	5.59E+02	6.15E+02	6.15E+02		
Chlorinated dioxins/dibenzofurans (CDDs/CDFs)							
2,3,7,8-TCDD	1746-01-6	8.30E-04	5.84E-04	8.90E-04	8.90E-04		
2,3,7,8-TCDF	51207-31-9	4.08E-03	1.70E-03	3.91E-03	3.91E-03		

(a) The VRP Tier II screening level (VRP) was substituted for the Johnson & Ettinger model estimate when the J&E estimate was less than the VRP.

WASTE OIL DUMP
VADEQ VRP TABLE 2.10
MAXIMUM GROUNDWATER CONTAMINANT CONCENTRATIONS
ASSUMING DEPTH TO GROUNDWATER-12 FEET

Depth to groundwater in feet (enter 4, 8 or 12): 12

le 2.10 Selection of Contaminants of Concer Restricted Groundwater Use Unrestricted (Residential) Land Use Inhalation of Indoor Air	CAS No.	Groundwater Concentration Lwt=4' ug/L	Groundwater Concentration Lwt=8' ug/L	Groundwater Concentration Lwt=12' ug/L	Tier III Groundwater Concentration Lwt=12' ug/L	VRP Tier II Screening Level ug/L	Maximum Groundwater Concentration ug/L	Contaminant of Potential Concern?
Inorganics								
Volatile Organic Compounds (VOC)								
n-butylbenzene	104-51-8	6.84E+02	2.48E+02	6.57E+02	6.57E+02	24		
sec-butylbenzene	135-98-8	6.86E+02	2.47E+02	6.57E+02	6.57E+02	24		
tert-butylbenzene	98-06-6	9.05E+02	3.26E+02	8.68E+02	8.68E+02	24		
1,4-dioxane	123-91-1					6.1		
isopropyltoluene	99-87-6	2.73E+03	1.01E+03	2.63E+03	2.63E+03	66		
n-propylbenzene	103-65-1	1.02E+03	3.88E+02	9.84E+02	9.84E+02	24		
1,1,1,2-tetrachloroethane	630-20-6	8.24E+01	3.42E+01	8.10E+01	8.10E+01	0.41		
1,2,4-trimethylbenzene	95-63-6	7.34E+01	2.82E+01	7.11E+01	7.11E+01	1.2	170	yes
1,3,5-trimethylbenzene	108-67-8	5.18E+01	1.98E+01	5.02E+01	5.02E+01	1.2	74	yes
m-xylene	108-38-3	5.99E+04	2.45E+04	5.87E+04	5.87E+04	1200	370	
o-xylene	95-47-6	7.09E+04	3.21E+04	7.10E+04	7.10E+04	1200	170	
p-xylene	106-42-3	5.32E+04	2.27E+04	5.26E+04	5.26E+04	1200	370	
m,p-xylene - max 370								
Semi-Volatile Organic Compounds (SVOC)								
Benzoic Acid	65-85-0	2.70E+06	2.70E+06	2.70E+06	2.70E+06 *	15000		
Pesticides/Polychlorinated Biphenyls (PCB)								
Chlorinated dioxins/dibenzofurans (CDDs/CDFs)								

(a) The VRP Tier II screening level (VRP) was substituted for the Johnson & Ettinger model estimate when the J&E estimate was less than the VRP.

NOC = NOT OF CONCERN. The groundwater concentration at or above the solubility limit is not of concern for this pathway.

DEFAULT BASEMENT (6.5 feet)
DEPTH TO GW 21 feet

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
95636	1.70E+02	1,2,4-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)	**ENTER** Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
200	640	LS	13	

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	**ENTER** User-defined vandose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone SCS soil type (Lookup Soil Parameters)	**ENTER** Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
LS			LS	1.62	0.39	0.076

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	30	350

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	5.70E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	6.1E-01

MESSAGE SUMMARY BELOW:

END

DEFAULT BASEMENT (6.5 feet)
DEPTH TO GW 21 feet

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
108678	7.40E+01	1,3,5-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)	**ENTER** Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
200	640	LS	13	

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	**ENTER** User-defined vandose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone SCS soil type (Lookup Soil Parameters)	**ENTER** Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
LS			LS	1.62	0.39	0.076

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	30	350

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	2.00E+03	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.5E-01

MESSAGE SUMMARY BELOW:

END

DEFAULT BASEMENT (6.5 feet)
DEPTH TO GW 12 feet

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	**ENTER** Initial groundwater conc., C_W (µg/L)	Chemical
95636	1.70E+02	1,2,4-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	**ENTER** Depth below grade to water table, L_{WT} (cm)	**ENTER** SCS soil type directly above water table	**ENTER** Average soil/ groundwater temperature, T_S (°C)	**ENTER** Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
200	366	LS	13	

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)	OR	**ENTER** User-defined vandose zone soil vapor permeability, k_v (cm^2)	**ENTER** Vadose zone SCS soil type (Lookup Soil Parameters)	**ENTER** Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	**ENTER** Vadose zone soil total porosity, n^V (unitless)	**ENTER** Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
LS			LS	1.62	0.39	0.076

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	**ENTER** Target hazard quotient for noncarcinogens, THQ (unitless)	**ENTER** Averaging time for carcinogens, AT_C (yrs)	**ENTER** Averaging time for noncarcinogens, AT_{NC} (yrs)	**ENTER** Exposure duration, ED (yrs)	**ENTER** Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	30	350

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	5.70E+04	NA

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	6.7E-01

MESSAGE SUMMARY BELOW:

END

DEFAULT BASEMENT (6.5 feet)
DEPTH TO GW 12 feet

DATA ENTRY SHEET

GW-SCREEN
Version 3.0; 04/03

Reset to Defaults

CALCULATE RISK-BASED GROUNDWATER CONCENTRATION (enter "X" in "YES" box)

YES [ ]

OR

CALCULATE INCREMENTAL RISKS FROM ACTUAL GROUNDWATER CONCENTRATION
(enter "X" in "YES" box and initial groundwater conc. below)

YES [X]

ENTER Chemical CAS No. (numbers only, no dashes)	ENTER Initial groundwater conc., C_W (µg/L)	Chemical
108678	7.40E+01	1,3,5-Trimethylbenzene

MORE ↓

ENTER Depth below grade to bottom of enclosed space floor, L_F (cm)	ENTER Depth below grade to water table, L_{WT} (cm)	ENTER SCS soil type directly above water table	ENTER Average soil/ groundwater temperature, T_S (°C)	ENTER Average vapor flow rate into bldg. (Leave blank to calculate) Q_{soil} (L/m)
200	366	LS	13	

MORE ↓

ENTER Vadose zone SCS soil type (used to estimate soil vapor permeability)		ENTER User-defined vandose zone soil vapor permeability, k_v (cm^2)	ENTER Vadose zone SCS soil type (Lookup Soil Parameters)	ENTER Vadose zone soil dry bulk density, ρ_b^V (g/cm^3)	ENTER Vadose zone soil total porosity, n^V (unitless)	ENTER Vadose zone soil water-filled porosity, θ_w^V (cm^3/cm^3)
LS			LS	1.62	0.39	0.076

MORE ↓

ENTER Target risk for carcinogens, TR (unitless)	ENTER Target hazard quotient for noncarcinogens, THQ (unitless)	ENTER Averaging time for carcinogens, AT_C (yrs)	ENTER Averaging time for noncarcinogens, AT_{NC} (yrs)	ENTER Exposure duration, ED (yrs)	ENTER Exposure frequency, EF (days/yr)
1.0E-06	1	70	30	30	350

Used to calculate risk-based groundwater concentration.

RESULTS SHEET

RISK-BASED GROUNDWATER CONCENTRATION CALCULATIONS:

Indoor exposure groundwater conc., carcinogen (µg/L)	Indoor exposure groundwater conc., noncarcinogen (µg/L)	Risk-based indoor exposure groundwater conc., (µg/L)	Pure component water solubility, S (µg/L)	Final indoor exposure groundwater conc., (µg/L)
NA	NA	NA	2.00E+03	NA

MESSAGE SUMMARY BELOW:

END

INCREMENTAL RISK CALCULATIONS:

Incremental risk from vapor intrusion to indoor air, carcinogen (unitless)	Hazard quotient from vapor intrusion to indoor air, noncarcinogen (unitless)
NA	2.8E-01

APPENDIX I

PART 2 – CONSTRUCTION WORKER TRENCH MODEL

APPENDIX I, PART 2: RAGS D TABLE 4

VALUES USED FOR DAILY INTAKE CALCULATIONS - RME AND CTE ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER

WOD RI REPORT

NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation Within Trench from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Parameter Code	Parameter Definition	Units	RME Value	RME Rationale/ Reference	CTE Value	CTE Rationale/ Reference	Intake Equation/ Model Name
Inhalation	CW	Chemical Concentration in Water	ug/l	See Table 3	See Table 3	See Table 3	See Table 3	Intake (mg/kg-day) =
	VF	Volatilization Factor from Groundwater	l/m3	Chemical-Specific	See Support Calc.	Chemical-Specific	See Support Calc.	(CW x VF) x IR-A x ET x EF x ED x 1/(BW x AT); Where VF=
	IR-A	Inhalation Rate	m3/hr	3.3	Prof Judge	2.5	Prof Judge	function of soil properties, Henrys Law &Diffusion Coef.
	ET	Exposure Time	hours/day	8	Prof Judge	8	Prof Judge	Model Equations From VADEQ, 2004 using groundwater depth of 21 feet, trench depth 15 feet.
	EF	Exposure Frequency	days/year	20	Prof Judge	20	Prof Judge	
	ED	Exposure Duration	years	1	Prof Judge	1	Prof Judge	
	CF1	Conversion Factor 1	mg/ug	0.001	--	0.001	--	
	BW	Body Weight	kg	70	EPA, 1997	70	EPA, 1997	
	AT-C	Averaging Time (Cancer)	days	25550	EPA, 1989	25550	EPA, 1989	
	AT-N	Averaging Time (Non-Cancer)	days	365	EPA, 1989	365	EPA, 1989	

Notes/Sources:

EPA, 1989. Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual (Part A). EPA 540/1-89/002. Office of Emergency and Remedial Response. Washington, DC.

EPA, 1993. Superfund's Standard Default Exposure Factors for Central Tendency and Reasonable Maximum Exposure. Draft.

EPA, 1997. Exposure Factors Handbook. Update to Exposure Factors Handbook. EPA/600/8-89/043 - May 1989. Office of Research and Development.

VADEQ, 2004. Voluntary Remediation Program □Risk Assessment Guidance. Section 3.2.2.1 Groundwater Greater Than 15 Feet Deep: Table 3.7. From website: http://www.deq.state.va.us/vrprisk/raguide.html

VADEQ VRP TABLE 3.7

CONSTRUCTION - TRENCH WORKER ASSUMPTIONS

For Effective Diffusion Coefficients

Hv	180	cm
ACvad	0.25	cm3/cm3
PorVad	0.44	cm3/cm3
T	77	F
T	298	K
R	8.20E-05	atm-m3/mol-K

For Emission Flux and Concentration in Trench

CF1	1.00E-03	L/cm3
CF2	1.00E+04	cm2/m2
CF3	3600	s/hr
Lgw	21	ft
Lgw	640	cm
F	1	
ACH	2	hr-1

Trench dimensions

Length	8	ft
	2.44	m
Width	3	ft
	0.91	m
Depth	15	ft
	4.57	m
Width/Depth	0.20	

VADEQ VRP TABLE 3.7 - CONSTRUCTION - TRENCH WORKER MODELING RESULTS

Table 3.7 Exposure point concentrations (inhalation) for construction/utility workers in a trench: Groundwater greater than 15 feet deep	CAS No	Molecular Weight MW g/mol	Henry's Law Constant Hi atm-m3/mol	Diffusion Coefficient in Air Dair cm2/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench pg/m3
Metals								
Aluminum	7429-90-5	26.98						
Antimony	7440-36-0	121.76						
Arsenic	7440-38-2	74.92						
Barium	7440-39-3	137.33						
Beryllium	7440-41-7	9.01						
Cadmium	7440-43-9	112.41						
Calcium	7440-70-2	40.08						
Chromium	7440-47-3	52.00						
Cobalt	7440-48-4	58.93						
Copper	7440-50-8	63.55						
Cyanide	57-12-5	26.02						
Iron	7439-89-6	55.85						
Lead	7439-92-1	207.20						
Magnesium	7439-95-4	24.31						
Manganese	7439-96-5	54.94						
Mercuric chloride	7487-94-7	271.50						
Mercury	7439-97-6	200.59	1.14E-02	7.15E-02				
Methylmercury	22967-92-6	215.63						
Nickel	7440-02-0	58.69						
Potassium	7440-09-7	39.10						
Selenium	7782-49-2	78.96						
Silver	7440-22-4	107.87						
Sodium	7440-23-5	22.99						
Thallium	7440-28-0	204.38						
Vanadium	7440-62-2	50.94						
Zinc	7440-66-6	65.39						
Volatile Organic Compounds (VOCs)								
Acetone	67-64-1	58.08	3.88E-05	1.24E-01				
Benzene	71-43-2	78.11	5.55E-03	8.80E-02	8.50E+00	2.19E-02	1.86E-01	1.86E+05
Bromochloromethane	74-97-5	129.38	1.46E-03	7.14E-02				
Bromodichloromethane	75-27-4	163.83	1.60E-03	5.63E-02				
Bromoform	75-25-2	252.73	5.35E-04	1.49E-02				
Bromomethane	74-83-9	94.94	6.24E-03	7.28E-02				
2-Butanone (methyl ethyl ketone)	78-93-3	72.11	5.59E-05	8.08E-02	3.32E+00	2.02E-04	6.72E-04	6.72E+02
Carbon disulfide	75-15-0	76.14	3.03E-02	1.04E-01				
Carbon tetrachloride	56-23-5	153.82	3.04E-02	7.80E-02				
Chlorobenzene	108-90-7	112.56	3.70E-03	7.30E-02				
Chloroethane	75-00-3	64.51	8.82E-03	2.71E-01				
Chloroform	67-66-3	119.38	3.67E-03	1.04E-01				
Chloromethane	74-87-3	50.49	8.82E-03	1.26E-01				
Cyclohexane	110-82-7	84.16	1.95E-01	8.39E-02				
1,2-Dibromo-3-chloropropane	96-12-8	236.33	1.47E-04	3.21E-02				
Dibromochloromethane	124-48-1	208.28	7.83E-04	3.66E-02				
1,2-Dibromoethane	106-93-4	187.86	7.43E-04	4.31E-02				
1,2-Dichlorobenzene (ortho)	95-50-1	147.00	1.90E-03	6.90E-02				
1,3-Dichlorobenzene (meta)	541-73-1	147.00	3.10E-03	6.92E-02				
1,4-Dichlorobenzene (para)	106-46-7	147.00	2.43E-03	6.90E-02				
Dichlorodifluoromethane	75-71-8	120.91	3.43E-01	7.22E-02				
1,1-Dichloroethane	75-34-3	98.96	5.62E-03	7.42E-02				
1,2-Dichloroethane	107-06-2	98.96	9.79E-04	1.04E-01				
1,1-Dichloroethene	75-35-4	96.94	2.61E-02	9.00E-02				
1,2-Dichloroethene (total)	540-59-0	96.94	4.51E-03	8.80E-02				
cis-1,2-Dichloroethene	156-59-2	96.94	4.08E-03	8.84E-02	1.94E+00	1.62E-02	3.13E-02	3.13E+04
trans-1,2-Dichloroethene	156-60-5	96.94	9.38E-03	7.03E-02				
1,2-Dichloropropane	78-87-5	112.99	2.80E-03	7.82E-02				
1,3-Dichloropropene (total)	542-75-6	110.97	1.77E-02	6.26E-02				
cis-1,3-Dichloropropene	10061-01-5	110.97	1.20E-03	7.65E-02				
trans-1,3-Dichloropropene	10061-02-6	110.97	8.00E-04	7.63E-02				
Ethylbenzene	100-41-4	106.17	7.88E-03	7.50E-02	4.22E+01	2.65E-02	1.12E+00	1.12E+06
Hexane	110-54-3	86.18	1.69E+00	2.00E-01				
2-Hexanone	591-78-6	100.16	9.32E-05	7.04E-02				
Isopropylbenzene	98-82-8	120.19	1.16E+00	6.50E-02	3.04E+00	3.38E+00	1.03E+01	1.03E+07
4-Methyl-2-pentanone (methyl isobutyl ketone)	108-10-1	100.16	1.38E-04	7.50E-02				
Methyl acetate	79-20-9	74.08	1.15E-04	1.04E-01				
Methyl tert-butyl ether	1634-04-4	88.15	5.87E-04	1.02E-01				
Methylcyclohexane	108-87-2	98.19	4.30E-01	7.00E-02	1.12E+01	1.35E+00	1.51E+01	1.51E+07
Methylene chloride	75-09-2	84.93	2.19E-03	1.01E-01				
Styrene	100-42-5	104.15	2.75E-03	7.10E-02	2.59E+00	8.75E-03	2.27E-02	2.27E+04
1,1,2,2-Tetrachloroethane	79-34-5	167.85	3.45E-04	7.10E-02				
Tetrachloroethene	127-18-4	165.83	1.84E-02	7.20E-02	2.55E+00	5.93E-02	1.51E-01	1.51E+05
Toluene	108-88-3	92.14	6.64E-03	8.70E-02	7.35E+01	2.59E-02	1.90E+00	1.90E+06
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	187.37	4.81E-01	3.76E-02				
1,2,3-Trichlorobenzene	87-61-6	181.45	1.25E-03	3.87E-02				
1,2,4-Trichlorobenzene	120-82-1	181.45	1.42E-03	3.00E-02				
1,1,1-Trichloroethane	71-55-6	133.40	1.72E-02	7.80E-02				
1,1,2-Trichloroethane	79-00-5	133.40	9.13E-04	7.80E-02				
Trichloroethene	79-01-6	131.39	1.03E-02	7.90E-02				
Trichlorofluoromethane	75-69-4	137.37	9.70E-02	8.70E-02				
Vinyl Chloride	75-01-4	62.50	2.70E-02	1.06E-01				
Total Xylenes	1330-20-7	106.16	5.18E-03	6.85E-02	4.95E+02	1.59E-02	7.87E+00	7.87E+06
Semivolatile Organic Compounds (SVOCs)								
Acenaphthene	83-32-9	154.21	1.55E-04	4.67E-02	3.93E+00	3.24E-04	1.28E-03	1.28E+03
Acenaphthylene	208-96-8	152.19	1.13E-04	4.50E-02				
Acetophenone	98-86-2	120.15	1.07E-05	6.00E-02				
Anthracene	120-12-7	178.23	6.50E-05	3.90E-02				
Atrazine	1912-24-9	215.68	2.36E-09	2.66E-02				
Benzaldehyde	100-52-7	106.12	2.67E-05	7.64E-02				
Benzo(a)anthracene	56-55-3	228.29	3.35E-06	5.10E-02				
Benzo(a)pyrene	50-32-8	252.31	1.13E-06	4.30E-02				

VADEQ VRP TABLE 3.7 - CONSTRUCTION - TRENCH WORKER MODELING RESULTS

Table 3.7 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater greater than 15 feet deep	CAS No.	Molecular Weight MW g/mol	Henry's Law Constant Hi atm-m3/mol	Diffusion Coefficient in Air Dair cm2/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench ug/m3	Concentration of Contaminant in Trench Ctrench pg/m3
Benzo(b)fluoranthene	205-99-2	252.31	1.11E-04	2.50E-02				
Benzo(g,h,i)perylene	191-24-2	276.33	1.41E-07	2.45E-02				
Benzo(k)fluoranthene	207-08-9	252.31	8.29E-07	2.50E-02				
1,1'-Biphenyl	92-52-4	154.21	3.00E-04	4.04E-02				
bis(2-Chloroethoxy)methane	111-91-1	173.04	1.70E-07	4.17E-02				
bis(2-chloroethyl)ether	111-44-4	143.01	1.80E-05	6.92E-02				
bis-(2-Ethylhexyl)phthalate	117-81-7	390.56	1.02E-07	3.51E-02	4.40E+00	1.60E-07	7.06E-07	7.06E-01
4-Bromophenyl-phenylether	101-55-3	249.10	1.17E-04	2.78E-02				
Butylbenzylphthalate	85-68-7	312.36	1.26E-06	2.23E-02				
Caprolactam	105-60-2	113.16	2.53E-08	6.81E-02				
Carbazole	86-74-8	167.21	1.54E-08	4.38E-02				
4-Chloro-3-methylphenol	59-50-7	142.58	2.45E-06	5.67E-02				
4-Chloroaniline	106-47-8	127.57	3.31E-07	7.04E-02				
2-Chloronaphthalene	91-58-7	162.62	3.14E-04	4.47E-02				
2-Chlorophenol	95-57-8	128.56	3.91E-04	6.61E-02				
4-Chlorophenyl-phenylether	7005-72-3	204.65	9.00E-05	2.69E-02				
Chrysene	218-01-9	228.29	9.46E-05	2.61E-02				
Di-n-butylphthalate	84-74-2	278.34	9.38E-10	4.38E-02				
Di-n-octylphthalate	117-84-0	390.56	6.68E-05	1.73E-02				
Dibenzo(a,h)anthracene	53-70-3	278.35	1.47E-08	2.36E-02				
Dibenzofuran	132-64-9	168.19	1.26E-05	4.11E-02	2.85E+00	2.32E-05	6.60E-05	6.60E+01
3,3'-Dichlorobenzidine	91-94-1	253.13	4.00E-09	2.54E-02				
2,4-Dichlorophenol	120-83-2	163.00	3.16E-06	4.86E-02				
Diethylphthalate	84-66-2	222.24	4.50E-07	2.61E-02				
2,4-Dimethylphenol	105-67-9	122.16	2.00E-06	6.23E-02				
Dimethylphthalate	131-11-3	194.18	1.05E-07	5.68E-02				
4,6-Dinitro-2-methylphenol	534-52-1	198.13	4.27E-07	3.00E-02				
2,4-Dinitrophenol	51-28-5	184.11	4.43E-07	2.73E-02				
2,4-Dinitrotoluene	121-14-2	182.13	9.26E-08	2.03E-01				
2,6-Dinitrotoluene	606-20-2	182.13	7.47E-07	3.70E-02				
Fluoranthene	206-44-0	202.25	1.61E-05	2.76E-02				
Fluorene	86-73-7	166.22	6.36E-05	4.40E-02	4.68E+00	1.25E-04	5.86E-04	5.86E+02
Hexachlorobenzene	118-74-1	284.78	1.32E-03	5.42E-02				
Hexachlorobutadiene	87-68-3	260.76	8.15E-03	5.61E-02				
Hexachlorocyclopentadiene	77-47-4	272.77	2.70E-02	2.72E-02				
Hexachloroethane	67-72-1	236.74	3.89E-03	2.50E-03				
Indeno(1,2,3-cd)pyrene	193-39-5	276.33	1.60E-06	2.45E-02				
Isophorone	78-59-1	138.21	6.64E-06	6.23E-02				
2-Methylnaphthalene	91-57-6	142.20	5.18E-04	5.24E-02	8.03E+01	1.22E-03	9.77E-02	9.77E+04
2-Methylphenol	95-48-7	108.14	1.20E-06	7.40E-02				
3-Methylphenol	108-39-4	108.14	8.65E-07	7.40E-02				
4-Methylphenol	106-44-5	108.14	7.92E-07	7.40E-02	2.21E+01	2.63E-06	5.80E-05	5.80E+01
N-Nitroso-di-n-propylamine	621-64-7	130.19	2.25E-06	5.64E-02				
N-Nitrosodiphenylamine	86-30-6	198.22	5.00E-06	2.84E-02				
Naphthalene	91-20-3	128.17	4.83E-04	5.90E-02	8.03E+01	1.28E-03	1.02E-01	1.02E+05
2-Nitroaniline	88-74-4	138.12	1.09E-07	7.30E-02				
3-Nitroaniline	99-09-2	138.12	1.44E-07	5.42E-02				
4-Nitroaniline	100-01-6	138.12	2.07E-09	6.37E-02				
Nitrobenzene	98-95-3	123.11	2.40E-05	7.60E-02				
2-Nitrophenol	88-75-5	139.11	9.47E-06	6.05E-02				
4-Nitrophenol	100-02-7	139.11	4.15E-10	6.41E-02				
2,2'-Oxybis(1-chloropropane)	108-60-1	171.06	1.17E-04	6.02E-02				
Pentachlorophenol	87-86-5	266.34	2.44E-08	5.60E-02				
Phenanthrene	85-01-8	178.23	2.33E-05	3.45E-02	8.18E+00	3.60E-05	2.94E-04	2.94E+02
Phenol	108-95-2	94.11	3.97E-07	8.20E-02				
Pyrene	129-00-0	202.25	1.10E-05	2.78E-02				
1,2,4,5-Tetrachlorobenzene	95-94-3	215.89	2.58E-03	3.19E-02				
2,4,5-Trichlorophenol	95-95-4	197.45	4.33E-06	2.91E-02				
2,4,6-Trichlorophenol	88-06-2	197.45	7.79E-06	3.14E-02				
Pesticides/Polychlorinated Biphenyls (PCBs)								
Aldrin	309-00-2	364.91	1.70E-04	2.28E-02				
Aroclor-1016	12674-11-2	257.90	2.90E-04	2.54E-02				
Aroclor-1221	11104-28-2	200.70	3.50E-03	2.70E-02				
Aroclor-1232	11141-16-5	232.20	7.36E-04	2.58E-02				
Aroclor-1242	53469-21-9	266.50	5.20E-04	2.50E-02				
Aroclor-1248	12672-29-6	299.50	2.80E-03	2.40E-02				
Aroclor-1254	11097-69-1	328.00	2.00E-03	2.37E-02				
Aroclor-1260	11096-82-5	375.70	4.60E-03	2.26E-02				
alpha-BHC	319-84-6	290.83	1.06E-05	2.75E-02				
beta-BHC	319-85-7	290.83	7.43E-07	2.77E-02				
delta-BHC	319-86-8	290.83	4.29E-07	2.60E-02				
gamma-BHC (lindane)	58-89-9	290.83	1.40E-05	2.77E-02				
Chlordane	57-74-9	409.78	4.86E-05	2.15E-02				
alpha-Chlordane	5103-71-9	409.76	4.86E-05	2.16E-02				
gamma-Chlordane	5103-74-2	409.76	4.86E-05	2.16E-02				
4,4'-DDD	72-54-8	320.04	4.00E-06	2.28E-02				
4,4'-DDE	72-55-9	318.02	2.10E-05	2.34E-02				
4,4'-DDT	50-29-3	354.48	8.10E-06	1.83E-02				
Dieldrin	60-57-1	380.91	1.51E-05	2.33E-02				
Endosulfan	115-29-7	406.92	1.12E-05	2.25E-02				
Endosulfan I	959-98-8	406.92	6.50E-05	2.29E-02				
Endosulfan II	33213-65-9	406.92	6.50E-05	2.29E-02				
Endosulfan Sulfate	1031-07-8	422.92	3.25E-07	2.24E-02				
Endrin	72-20-8	380.91	7.52E-06	2.37E-02				
Endrin Aldehyde	7421-93-4	380.91	4.18E-06	2.37E-02				
Endrin Ketone	53494-70-5	380.90	1.25E-05	2.40E-02				
Heptachlor	76-44-8	373.32	1.09E-03	2.23E-02				
Heptachlor epoxide	1024-57-3	389.32	9.50E-06	2.38E-02				
Methoxychlor	72-43-5	345.65	1.58E-05	2.21E-02				
Toxaphene	8001-35-2	414.00	6.00E-06	2.17E-02				
Chlorinated dioxins/dibenzofurans (CDDs/CDFs)								
2,3,7,8-TCDD	1746-01-6	322.00	7.92E-05	2.59E-02				
2,3,7,8-TCDF	51207-31-9	305.97	2.64E-04	2.58E-02				

VADEQ VRP TABLE 3.7 - CONSTRUCTION - TRENCH WORKER MODELING RESULTS

Table 3.7 Exposure-point concentrations (inhalation) for construction/utility workers in a trench: Groundwater greater than 15 feet deep	CAS No.	Molecular Weight MWi g/mol	Henry's Law Constant Hi atm-m3/mol	Diffusion Coefficient in Air Dair cm2/s	Concentration of Contaminant in Groundwater Cgw ug/L	Volatilization Factor VF L/m3	Concentration of Contaminant in Trench Ctrench pg/m3
Inorganics							
Volatile Organic Compounds (VOCs)							
n-butylbenzene	104-51-8	134.22	1.59E-02	5.31E-02			
sec-butylbenzene	135-98-8	134.22	1.76E-02	5.27E-02			
tert-butylbenzene	98-06-6	134.22	1.32E-02	5.26E-02			
1,4-dioxane	123-91-1						
isopropyltoluene	99-87-6	134.22	1.10E-02	5.60E-02			
n-propylbenzene	103-65-1	120.19	1.05E-02	6.03E-02			
1,1,1,2-tetrachloroethane	630-20-6	167.85	2.42E-03	7.10E-02			
1,2,4-trimethylbenzene	95-63-6	120.19	6.16E-03	6.05E-02	1.04E+02	1.67E-02	1.74E+06
1,3,5-trimethylbenzene	108-67-8	120.19	8.77E-03	6.02E-02	4.54E+01	2.36E-02	1.07E+06
m-xylene	108-38-3	106.17	7.34E-03	7.00E-02			
o-xylene	95-47-6	106.17	5.19E-03	8.70E-02			
p-xylene	106-42-3	106.17	7.66E-03	7.69E-02			
Semivolatile Organic Compounds (SVOCs)							
Benzoic acid	65-85-0	122.12	3.81E-08	7.02E-02			
Pesticides/Polychlorinated Biphenyls (PCBs)							
Chlorinated dioxins/dibenzofurans (CDDs/CDFs)							

APPENDIX I, PART 2: RAGS D TABLE 7
CALCULATION OF NON-CANCER HAZARDS - ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation Within Trench from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Hazard Calculation (1)	Intake (Non-Cancer)	Intake (Non-Cancer) Units	Reference Dose	Reference Dose Units	Reference Concentration	Reference Concentration Units	Hazard Quotient
Inhalation	2-Methylnaphthalene	8.03E+01	ug/L	9.77E+04	pg/m3	R	2.02E-06	mg/kg-day	--	--	--	mg/kg-day	--
	4-Methylphenol	2.21E+01	ug/L	5.80E+01	pg/m3	R	1.20E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Acenaphthene	3.93E+00	ug/L	1.28E+03	pg/m3	R	2.65E-08	mg/kg-day	--	--	--	mg/kg-day	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/L	7.06E-01	pg/m3	R	1.46E-11	mg/kg-day	--	--	--	mg/kg-day	--
	Dibenzofuran	2.85E+00	ug/L	6.60E+01	pg/m3	R	1.36E-09	mg/kg-day	--	--	--	mg/kg-day	--
	Naphthalene	8.03E+01	ug/L	1.02E+05	pg/m3	R	2.11E-06	mg/kg-day	--	--	8.60E-04	mg/kg-day	2.45E-03
	Phenanthrene	8.18E+00	ug/L	2.94E+02	pg/m3	R	6.08E-09	mg/kg-day	--	--	--	mg/kg-day	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/L	1.74E+06	pg/m3	R	3.60E-05	mg/kg-day	--	--	1.70E-03	mg/kg-day	2.12E-02
	1,2-Dichloroethene (cis)	1.94E+00	ug/L	3.13E+04	pg/m3	R	6.47E-07	mg/kg-day	--	--	--	mg/kg-day	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/L	1.07E+06	pg/m3	R	2.21E-05	mg/kg-day	--	--	1.70E-03	mg/kg-day	1.30E-02
	2-Butanone	3.32E+00	ug/L	6.72E+02	pg/m3	R	1.39E-08	mg/kg-day	--	--	1.40E+00	mg/kg-day	9.92E-09
	Benzene	8.50E+00	ug/L	1.86E+05	pg/m3	R	3.84E-06	mg/kg-day	--	--	8.60E-03	mg/kg-day	4.47E-04
	Ethylbenzene	4.22E+01	ug/L	1.12E+06	pg/m3	R	2.31E-05	mg/kg-day	--	--	2.90E-01	mg/kg-day	7.98E-05
	Isopropylbenzene	3.04E+00	ug/L	1.03E+07	pg/m3	R	2.13E-04	mg/kg-day	--	--	1.10E-01	mg/kg-day	1.94E-03
	Methylcyclohexane	1.12E+01	ug/L	1.51E+07	pg/m3	R	3.12E-04	mg/kg-day	--	--	8.57E-01	mg/kg-day	3.64E-04
	Styrene	2.59E+00	ug/L	2.27E+04	pg/m3	R	4.69E-07	mg/kg-day	--	--	2.86E-01	mg/kg-day	1.64E-06
	Tetrachloroethene	2.55E+00	ug/L	1.51E+05	pg/m3	R	3.12E-06	mg/kg-day	--	--	1.40E-01	mg/kg-day	2.23E-05
	Toluene	7.35E+01	ug/L	1.90E+06	pg/m3	R	3.93E-05	mg/kg-day	--	--	1.14E-01	mg/kg-day	3.44E-04
	Xylene (Total)	4.95E+02	ug/L	7.87E+06	pg/m3	R	1.63E-04	mg/kg-day	--	--	2.80E-02	mg/kg-day	5.81E-03
	(Total)												4.56E-02
	(Total)												4.56E-02

(1) Specify Medium-Specific (M) or Route-Specific (R) EPC selected for hazard calculation.

APPENDIX I, PART 2: RAGS D TABLE 8
CALCULATION OF CANCER RISKS - ADULT CONSTRUCTION WORKER AMBIENT VOC INHALATION FROM GROUNDWATER
REASONABLE MAXIMUM EXPOSURE
WOD RI REPORT
NASA WFF - WALLOPS ISLAND, VIRGINIA

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Vapors
Exposure Point: Ambient VOC Inhalation Within Trench from Groundwater
Receptor Population: Construction Worker
Receptor Age: Adult

Exposure Route	Chemical of Potential Concern	Medium EPC Value	Medium EPC Units	Route EPC Value	Route EPC Units	EPC Selected for Risk Calculation (1)	Intake (Cancer)	Intake (Cancer) Units	Cancer Slope Factor	Cancer Slope Factor Units	Cancer Risk
Inhalation	2-Methylnaphthalene	8.03E+01	ug/L	9.77E+04	pg/m3	R	2.88E-08	mg/kg-day	--	1/(mg/kg-day)	--
	4-Methylphenol	2.21E+01	ug/L	5.80E+01	pg/m3	R	1.71E-11	mg/kg-day	--	1/(mg/kg-day)	--
	Acenaphthene	3.93E+00	ug/L	1.28E+03	pg/m3	R	3.78E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Bis(2-ethylhexyl) Phthalate	4.40E+00	ug/L	7.06E-01	pg/m3	R	2.08E-13	mg/kg-day	1.40E-02	1/(mg/kg-day)	2.92E-15
	Dibenzofuran	2.85E+00	ug/L	6.60E+01	pg/m3	R	1.95E-11	mg/kg-day	--	1/(mg/kg-day)	--
	Naphthalene	8.03E+01	ug/L	1.02E+05	pg/m3	R	3.01E-08	mg/kg-day	--	1/(mg/kg-day)	--
	Phenanthrene	8.18E+00	ug/L	2.94E+02	pg/m3	R	8.68E-11	mg/kg-day	--	1/(mg/kg-day)	--
	1,2,4-Trimethylbenzene	1.04E+02	ug/L	1.74E+06	pg/m3	R	5.14E-07	mg/kg-day	--	1/(mg/kg-day)	--
	1,2-Dichloroethene (cis)	1.94E+00	ug/L	3.13E+04	pg/m3	R	9.24E-09	mg/kg-day	--	1/(mg/kg-day)	--
	1,3,5-Trimethylbenzene	4.54E+01	ug/L	1.07E+06	pg/m3	R	3.16E-07	mg/kg-day	--	1/(mg/kg-day)	--
	2-Butanone	3.32E+00	ug/L	6.72E+02	pg/m3	R	1.98E-10	mg/kg-day	--	1/(mg/kg-day)	--
	Benzene	8.50E+00	ug/L	1.86E+05	pg/m3	R	5.49E-08	mg/kg-day	2.70E-02	1/(mg/kg-day)	1.48E-09
	Ethylbenzene	4.22E+01	ug/L	1.12E+06	pg/m3	R	3.31E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Isopropylbenzene	3.04E+00	ug/L	1.03E+07	pg/m3	R	3.04E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Methylcyclohexane	1.12E+01	ug/L	1.51E+07	pg/m3	R	4.46E-06	mg/kg-day	--	1/(mg/kg-day)	--
	Styrene	2.59E+00	ug/L	2.27E+04	pg/m3	R	6.70E-09	mg/kg-day	--	1/(mg/kg-day)	--
	Tetrachloroethene	2.55E+00	ug/L	1.51E+05	pg/m3	R	4.46E-08	mg/kg-day	2.00E-02	1/(mg/kg-day)	8.92E-10
	Toluene	7.35E+01	ug/L	1.90E+06	pg/m3	R	5.61E-07	mg/kg-day	--	1/(mg/kg-day)	--
	Xylene (Total)	4.95E+02	ug/L	7.87E+06	pg/m3	R	2.32E-06	mg/kg-day	--	1/(mg/kg-day)	--
	(Total)										2.37E-09
	(Total)										2.37E-09